



CMA INTER GROUP-2 FAST TRACK - BOOK

“Every *Success* Story
Starts With A *Dream.*”

TARGET ACADEMY

**GUNTUR
BRODIPETA**

**HYDERABAD
S.R.NAGAR**

CELL: 9059529540, 9010676997

CMA INTER
GROUP-2
FAST TRACK BOOK

(SYLLABUS-2022)

“WINNERS ARE NOT THOSE WHO NEVER FAIL BUT THOSE WHO NEVER QUIT.”

- DR. APJ ABDUL KALAM

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BOOSTER BOOK

(GROUP – 02)

CONTACT: 90595 29540, 90106 76997.

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JOB ALLOCATION

Job Allocation

Each job should be allocated based on difficulty of job and efficiency of employee.

Only one job is be allocated to one person (Employee) by one person (HR)

In general allocation of job should results in

Maximization of profit

Maximization of production

Minimization of cost

Minimization of hours required for production

From this chapter we able to learn
HOW TO PLACE A PERSON TO A
PARTICULAR JOB

7 Steps to solve job allocation problems

- Find out the Objective function
- Check whether the given matrix is balanced or not
- Row minimization
- Column minimization
- Optimality test
- Draw Improved matrix
- Optimal Assignment

Step 1 : Find out the Objective function

Check weather the problem is asked for minimization or maximization

Note that The given 7 steps applicable for ONLY minimization problems
If cost matrix or time matrix is is given then it is minimization problem

If profit matrix is given then it is maximization problem.

Process of CONVERSION

If Maximization problem is given then CONVERT it into minimization problem
Subtract Each and Every element of the matrix from the maximum element of that matrix.

The resultant matrix is know as opportunity cost / opportunity loss matrix.

Step 2: Check whether the given matrix is balanced or not

If the Number of Rows in matrix are equal to Number of columns in the matrix then the question is said to be Balanced .

No. of ROWS = No. of COLUMNS

Otherwise it is called Not balanced.

In such case it is added by dummy Row or dummy Column with ZEROs

- Step 3 : Row minimization** Select a Row in the matrix and find out minimum element in that row then subtract it from all other elements in that row (Only)
Repeat the process for all other rows.
ZERO in each row indicate job can allotted to respective employee and other positive values in that row indicates extra time taken by employee (Time matrix problem).
- Step 4 : Column Minimization** Select a Column in the matrix and find out minimum element in that column then subtract it from all other elements in that column (Only)
Repeat the process for all other columns.
This step has to be done to reduce the extra time that is identified in step 3
- Step 5 : Optimality test :** Draw minimum lines to cover maximum zeros.
If number of lines equal to Order of matrix then Solution is said to be optimal.
No. of LINES = ORDER OF MATRIX
In other cases solution is said be not optimal.
If solution is Not Optimal then step 6 is to be follow.
If solution is Optimal step 6 will not appear
- Step 6 : Improved Matrix** Find minimum un covered element
Deduct MUE from all un covered elements and
Add MUE to all Intersection points
Covered elements remain same.
- Step 7 : Optimal Assignment** Assign the job to the respective employee
Find out row or column having one zero or least number of zeros.
If you allot one job to one employee in one row then you have to block other zeros in respective column and vice versa.
Prepare assignment schedule.

QUESTION:

A captain of a cricket team has to allot five middle batting positions to five batman. The average runs scored by each batsman at these positions are as follows

	Position 1	Position 2	Position 3	Position 4	Position 5
P	40	40	35	25	50
Q	42	30	16	25	27
R	50	48	40	60	50
S	20	19	20	18	25
T	58	60	59	55	53

Solution:

- Step 1 :
 - The given matrix is RUN matrix. So the problem is for maximization.

- In order to solve the problem, first we should convert it into minimization by subtracting each and every element of the matrix from highest element of matrix. (i.e 60 in this case).
- The resultant matrix is called Opportunity cost matrix.
- Opportunity cost matrix

	Position 1	Position 2	Position 3	Position 4	Position 5
P	60-40	60-40	60-35	60-25	60-50
Q	60-42	60-30	60-16	60-25	60-27
R	60-50	60-48	60-40	60-60	60-50
S	60-20	60-19	60-20	60-18	60-25
T	60-58	60-60	60-59	60-55	60-53

- Step 2 : Balancing
 - No of Columns (5) = No of rows (5)
 - The problem is balanced.
- Step 3 : Row minimization

	Position 1	Position 2	Position 3	Position 4	Position 5
P					
Q					
R					
S					
T					

- Step 4 : Column Minimization

	Position 1	Position 2	Position 3	Position 4	Position 5
P					
Q					
R					
S					
T					

- Step 5 : Optimality Test

	Position 1	Position 2	Position 3	Position 4	Position 5
P					
Q					
R					
S					
T					

- Step 6 : Improved matrix

	Position 1	Position 2	Position 3	Position 4	Position 5
P					
Q					
R					
S					
T					

• **Step 7 : Optimal Assignment**

	Position 1	Position 2	Position 3	Position 4	Position 5
P					
Q					
R					
S					
T					

• **Assignment schedule**

Batsman	Position	Runs
P		
Q		
R		
S		
T		
MAX RUNS		



THE END

TRANSPORTATION MODEL

- Objective of TRANSPORTATION MODEL
- Minimize the transportation cost

Methods to solve transportation model

North - West Corner Rule Method
It does not consider cost

Least Cost Method

Vogel's Approximation Method

- Find the initial solution and Is the initial solution feasible? By the following methods
 - 1. North-west Corner method
 - 2. Least cost method
 - 3. Vogel's Approximation method

Particulars	Store 1	Store 2	Store 3	Total supplies
Plant 1	49	60	56	14
Plant 2	45	55	53	26
Plant 3	50	80	70	36
Plant 4	52	64	55	22
Demand	20	32	25	

Solution by North - West Corner Rule Method

- Step 1 : Objective function
 - The given matrix is cost matrix.
 - Hence the problem is for Minimization
- Step 2: Balancing
 - Total demand (77) $\neq$ Total supply (98)
 - The problem is not balanced
 - Hence we need to add dummy column

Particulars	Store 1	Store 2	Store 3	Dummy	Total supplies
Plant 1	49	60	56		14
Plant 2	45	55	53		26
Plant 3	50	80	70		36
Plant 4	52	64	55		22
Demand	20	32	25		98

- Step 3 : Initial Basic feasible solution by NWC method

Particulars	Store 1	Store 2	Store 3	Dummy	Total supplies
Plant 1	49	60	56	0	14
Plant 2	45	55	53	0	26
Plant 3	50	80	70	0	36
Plant 4	52	64	55	0	22
Demand	20	32	25	21	98

- ▶ Step 4 : No of allocated cells = $m + n - 1$
- ▶ There is _____ degeneracy
- ▶ So Initial basic solution is _____

Solution by Least Cost Method

- ▶ Step 1 and Step 2 are same
- ▶ Step 3 : Initial Basic feasible solution by Least Cost Method

Particulars	Store 1	Store 2	Store 3	Dummy	Total supplies
Plant 1	49	60	56	0	14
Plant 2	45	55	53	0	26
Plant 3	50	80	70	0	36
Plant 4	52	64	55	0	22
Demand	20	32	25	21	98

- ▶ Step 4 : No of allocated cells = $m + n - 1$
- ▶ There is _____ degeneracy
- ▶ So Initial basic solution is _____

Solution by Vogel's Approximation Method

- ▶ Step 1 and Step 2 are same
- ▶ Step 3 : Initial Basic feasible solution by Vogel's Approximation Method

Particulars	Store 1	Store 2	Store 3	Dummy	Total supplies	Penalty
Plant 1	49	60	56	0	14	
Plant 2	45	55	53	0	26	
Plant 3	50	80	70	0	36	
Plant 4	52	64	55	0	22	
Demand	20	32	25	21	98	
Penalty						

Step 4: No of allocated cells = $m + n - 1$

There is _____ degeneracy

So Initial basic solution is _____

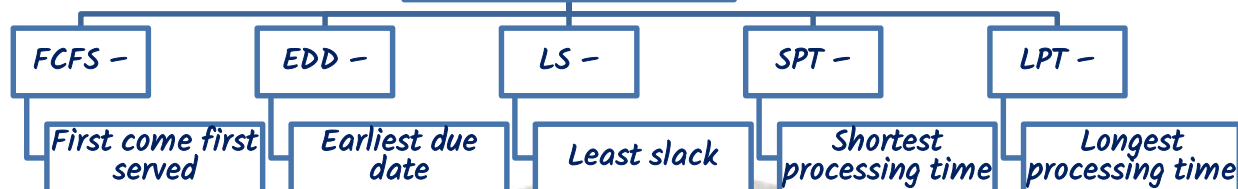
THE END

LINE BALANCING

Line Balancing:

Equality in Capacity in every department by increasing bottle neck capacity.

Terms we should know



QUESTION:

Table shows the time remaining (number of days until due date) and the work remaining (number of day's work) for 5 jobs which were assigned the letters A to E as they arrived to the shop. Sequence these jobs by priority rules viz., (a) FCFS, (b) EDD, (c) LS, (d) SPT and (e) LPT.

Job	Number days until due date	Number of days work remaining
A	8	7
B	3	4
C	7	5
D	9	2
E	6	6

Solution

► (a) FCFS

► Sequence of jobs to be done :

► (b) EDD

Job	A	B	C	D	E
No of days until due date	8	3	7	9	6

► Sequence of jobs to be done :

► (c) LS Least slack

Job	Time remaining (a)	Work remaining (b)	Least slack (a-b)
A	8	7	
B	3	4	
C	7	5	
D	9	2	
E	6	6	

► Sequence of jobs to be done :

► (d) SPT

Job	A	B	C	D	E
Processing time	7	4	5	2	6

► Sequence of jobs to be done :

► (e) LPT (opp to SPT)

► Sequence of jobs to be done :



THE END

ECONOMICS OF MAINATANCE AND SPARES MANAGEMENT

OBJECTIVES OF MAINTENANCE

To keep all the production facilities and other allied facilities such as building and premises, power supply system, etc. in an optimum working condition,

To keep the down time of the machine at minimum.

To extend the useful life of plant and machinery, without sacrificing the level of performance.

To improve productivity of existing machine tools

MAJOR AREAS OF MAINTENANCE

CIVIL MAINTENANCE

Building construction and maintenance, maintaining service facility such as water, gas, steam, compressed air, heating and ventilating, air conditioning, painting, plumbing and carpentry work

MECHANICAL MAINTENANCE:

Maintaining machines and equipments, transport vehicles, material handling equipment, lubricants, steam generators

ELECTRICAL MAINTENANCE:

Maintaining electrical equipments such as generators, transformers, switch gears, motors, telephone systems, electrical installations, lighting, fans, meters, gages, instruments, control panels and battery charging.

Effective maintenance requirements

Good training should be given to the maintenance personnel,

Good and clear instructions to be given to maintenance crew regarding the repair,

Proper control of work in co-ordination with production department

Proper maintenance record keeping is a must,

Good supervision and administration of maintenance department

QUESTION 1:

Computation of total preventive maintenance cost: PQR Company has kept records of breakdowns of its machines for 300 days work year as shown below

No. of breakdown	Frequency in days
0	40
1	150
2	70
3	30
4	10

300

The firm estimates that each breakdown costs Rs.650 and is considering adopting a preventive maintenance program which would cost Rs.200 per day and limit the number of breakdown to an average of one per day. What is the expected annual savings from preventive maintenance program?

Solution :

► Breakdown maintenance cost

No of BD (a)	Frequency days	Probability (b)	Expected no of BD (a X b)
0	40	0.133	0
1	150	0.50	0.5
2	70	0.2333	0.466
3	30	0.10	0.30
4	10	0.033	0.132
	300		1.398

► Total BD maintenance cost p.a

► No of BD X Cost per BD

► $(1.398 \times 300 \text{ days}) \times 650 =$

► Preventive maintenance

► Preventive maintenance cost (A) = 200 per day * 300 days =

► Plus BD cost (B) = 1 BD * 300 days * 650 =

► Total Preventive maintenance cost A + B =

► Savings in cost due to preventive maintenance =

QUESTION 2:

► The following mortality rates have been observed for a certain type of light b bulb's:

Week	1	2	3	4	5
Percent failing by end of week	10	25	50	80	100

There are 1,000 bulbs in use, and It cost Rs.2 to replace an individual bulb which has burnt out. If all bulbs were replaced simultaneously it would cost 50 paise per bulb. It is proposed to replace all bulbs at fixed intervals, whether or not they have burnt out, and to continue replacing burnt out bulbs as they fait. At what intervals should all the bulbs be replaced?

Solution:

Week	1	2	3	4	5
Cum . Probability (%)	10	25	50	80	100
Ind . Probability (%)	10	15	25	30	20

► Statement showing avg cost

Week	No of Individual replacements	Individual replacements cost	Cumulative individual	Group replacement cost	Total cost	Avg cost

			replacement cost			
1	100 (1000 * 10 %)	200 (100 * 2)		500 (1000 * 0.5)		
2	(1000 * 15%) + (100 * 10 %)					
3	(1000 * 25%) + (100 * 15 %) + (160 * 10 %)					

QUESTION 3:

The simple engineering company has a machine whose purchase price is Rs.80000. The expected maintenance costs and resale price in different years are as given below:

Year	1	2	3	4	5	6	7
Maintenance cost (Rs.)	1,000	1,200	1,600	2,400	3,000	3,900	5,000
Resale value (Rs. in thousand)	75	72	70	65	58	50	45

► After what time interval should the machine be replaced?

Solution:

Year	Maintenance cost	Cum . Maintenance cost	Net investment (IC - scrap)	Total cost	Avg cost
1	1000		80000-75000		
2	1200				
3	1600				
4	2400				

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PROJECT MANAGEMENT

PROJECT:

A project is defined as a combination of interrelated activities all of which must be executed in a certain order to achieve a set goal.

Some of the typical projects are:

- Construction of a house
- Construction of a factory
- Construction of a ship
- Research to develop a new technology

PROJECT MANAGEMENT:

Definition:

- Project management is the process and activity of planning, organizing, motivating, and controlling resources, procedures and protocols to achieve specific goals in scientific or daily problems.
- Project management is generally applied for constructing items of public utilities, large industrial projects, organizing mega events etc.

Three main managerial functions for any project are:

Planning: This phase involves setting the objectives of the project. For example men, machines, materials required for the project and also estimates of costs and duration of activities also determined.

Scheduling: Establishments of times at which to begin and/or complete each operation.

i.e. When aspect

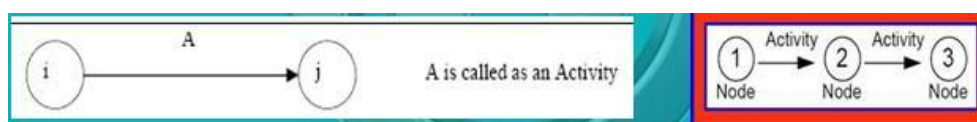
Controlling: It consists of reviewing the process of the project whether its process as per planned schedule.

Basic Terminologies used in CPM and PERT

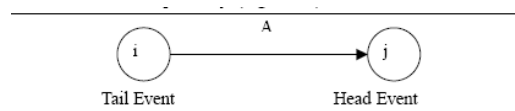
- Activity
- Event
- Merge and burst events
- Preceding, Succeeding, Concurrent activities
- Dummy activity
- Starting and terminal activities
- Common errors (Loop, Dangling, Redundancy)

Activity:

Activity is a task or item of work to be done in a project. An activity consumes resources like time, money, labour etc. It is represented by an arrow.



Event or Node: An event will always occur at the beginning and end of an activity. The event has no resources and is represented by a circle.



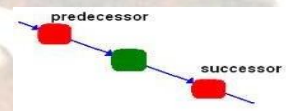
Merge and Burst Events:

- One or more activities can start and end simultaneously at an event



Preceding and Succeeding Activities:

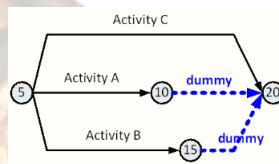
Activities performed before given events are known as preceding activities and activities performed after a given event are known as succeeding activities



In the above diagram A is called immediate predecessor of B and B is called immediate successor of A.

Dummy Activity:

An imaginary activity which does not consume any resource and time is called a dummy activity. Dummy activities are simply used to represent a connection between events in order to maintain logic in the network. It is represented by a dotted line in a network

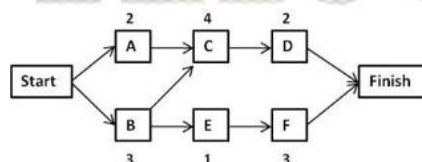


Start activity:

Activities which have no predecessors are called start activities of the project

Terminal activity:

Activities which have no successor are called terminal activities of the project.



Note:

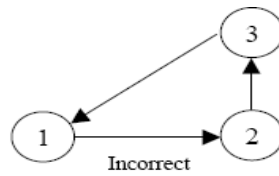
There are two methods of representing any project in the network form:

- Activities on Arrow diagram (AOA)
- Activities on Node diagram (AON)

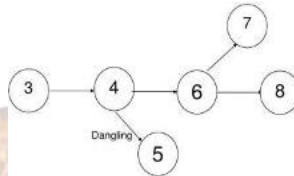
AOA diagram is commonly used in project management

COMMON ERRORS

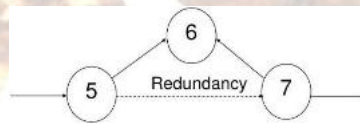
Looping or cycling error: It is an edge connecting and operating itself



Dangling: There are two or more end points in the network



Redundancy error: When dummy activity is introduced but it is not required



QUESTION 1:

Draw the network for the following activities and find the critical path and total duration of the project

Activity	Duration(month)
1-2	2.5
2-3	2.5
2-4	1.5
3-4	1.0
3-5	1.0
4-5	2.0
5-6	3.0
5-7	1.5
5-7	1.5

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QUESTION 2:

Project with the following data is to be implemented. Draw the network and find the critical path

Activity	Predecessor	Duration (days)	Cost (Day)
A	-	2	50
B	-	4	50
C	A	1	40
D	B	2	100
E	A,B	3	100
F	E	2	60

- ▶ Draw Gantt chart.
- ▶ Determine peak requirement money.

Gantt Chart

- ▶ Peak requirement of money

Day	1	2	3	4	5	6	7	8	9	10
Activity to be done										
Amount required										

- ▶ Peak requirement of money =

QUESTION 3:

Jaago Engineering is analyzing the efficiency of its work and service personnel. Its service procedure is classified into the following seven activities along with its duration

Activity	Duration (Hrs.)	Precedence Activity
A	8	--
B	4	--
C	6	A
D	9	B
E	11	A

F	3	C
G	1	D,E,F

► From the above details:

- i) Draw the network diagram, iv) Stack time for each path,
- ii) Find the critical path, v) Earliest Start and Finish Time,
- iii) Calculate the expected time, v) Latest Finish and Start Time.

Solution:



Statement showing calculation of Float.

Activity	Duration	EST	EFT (EST + DURATION)	LFT	LST (LFT-DURATION)	Float LST - EST or LFT - EFT
A	8					
B	4					
C	6					
D	9					
E	11					
F	3					
G	1					

► **Note**

- Total float = LFT -EFT or LST - EST
- Free float = Total float - slack of head event
- Independent float = Free float - slack of tail event

► (5,6)

(2,3)



► Tail event

Head event

► Slack of tail event =

slack of head event =

THE END

FACILITY LAYOUT

DEFINITION:

Facility layout is an arrangement of different aspects of manufacturing in an appropriate manner as to achieve desired production results. Facility layout considers available space, final product, safety of users and facility and convenience of operations.

PROBLEM

Given:

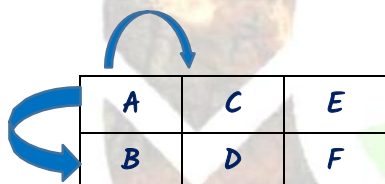
1. Plant Layout
2. Frequency

Example:

A	C	E
B	D	F

Solution:

1. Find the traffic between the departments given in the problem



Traffic details

$$A - C = 1, A - B = 1, A - D = 2, D - E = 2$$

Likewise find the same for all the layout which are given in your question

2. Computation of total cost matrix

$$\text{Total Cost} = \text{Traffic between the department} \times \text{Frequency (given)}$$

QUESTION:

The manager of the department is intending to interchange the departments C and F in the present layout. The handling frequencies between the departments are given. All the departments are of same size and configuration. the material handling cost per unit length travel between departments is same. What will be the effect of interchange of departments C and F in the layout?

A	C	E
B	D	F

FROM/TO	A	B	C	D	E	F
A	-	0	80	150	60	10
B	-	-	90	0	90	110
C	-	-	-	40	0	5
D	-	-	-	-	160	20
E	-	-	-	-	-	60
F	-	-	-	-	-	-

Solution:
► Plant Layout

A	C	E
B	D	F

► Distance matrix

FROM/TO	A	B	C	D	E	F
A	-	1	1	2	2	3
B	-	-	2	1	3	2
C	-	-	-	1	1	2
D	-	-	-	-	2	1
E	-	-	-	-	-	1
F	-	-	-	-	-	-

► Cost matrix (Distance x Qty)

FROM/TO	A	B	C	D	E	F	Total
A	-						
B	-	-					
C	-	-	-				
D	-	-	-	-			
E	-	-	-	-	-		
F	-	-	-	-	-	-	
Total							

► Proposed Matrix

A	F	E
B	D	C

► Distance matrix

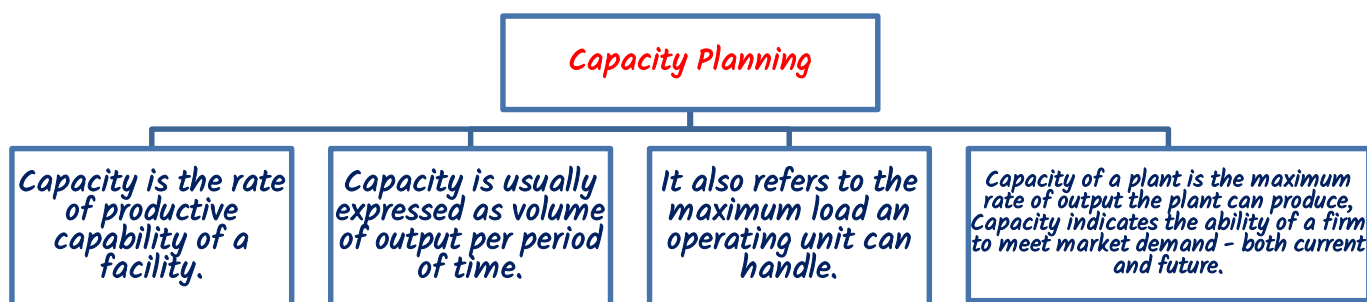
FROM/TO	A	B	C	D	E	F
A	-					
B	-	-				
C	-	-	-			
D	-	-	-	-		
E	-	-	-	-	-	
F	-	-	-	-	-	-

► Cost matrix (Distance x Qty)

FROM/TO	A	B	C	D	E	F	Total
A	-						
B	-	-					
C	-	-	-				
D	-	-	-	-			
E	-	-	-	-	-		
F	-	-	-	-	-	-	
Total							

THE END

CAPACITY PLANNING



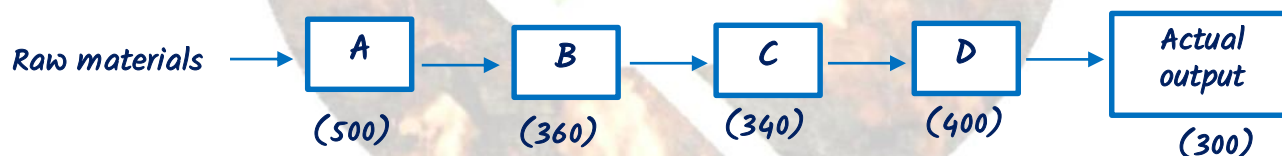
CAPACITY PLANNING IS REQUIRED FOR



Bottleneck Centre - It is the minimum capacity of work centre

QUESTION 1:

- A firm has four work centers, A, B, C & D, in series with individual capacities in units per day shown in the figure below.



- Identify the bottle neck center?
- What is the system capacity?
- What is the system efficiency?

QUESTION 2:

A department works on 8 hours shift, 288 days a year and has the usage data of a machine, as given below

Product	Annual Demand (units)	Processing time (standard time in hours)
A	325	5.0
B	450	4.0
C	550	6.0

Calculate:

- a) Processing time needed in hours to produce product A, B and C,
- b) Annual production capacity of one machine in standard hours, and
- c) Number of machines required

Solution:

A) Statement showing processing Hours

Product	No of units	Time p.u	Total process time
A	325	5	
B	450	4	
C	550	6	
TOTAL			

- ▶ B)Total capacity of machine = Hours per day * No of hours
- ▶ C) No of machines = total processing time / No of machine hrs. per machine p.a



THE END

DEMAND FORECASTING

Forecasting
: Guessing

Ranges for Short - term, Medium - term and Long - term Forecasting

Short term forecasting

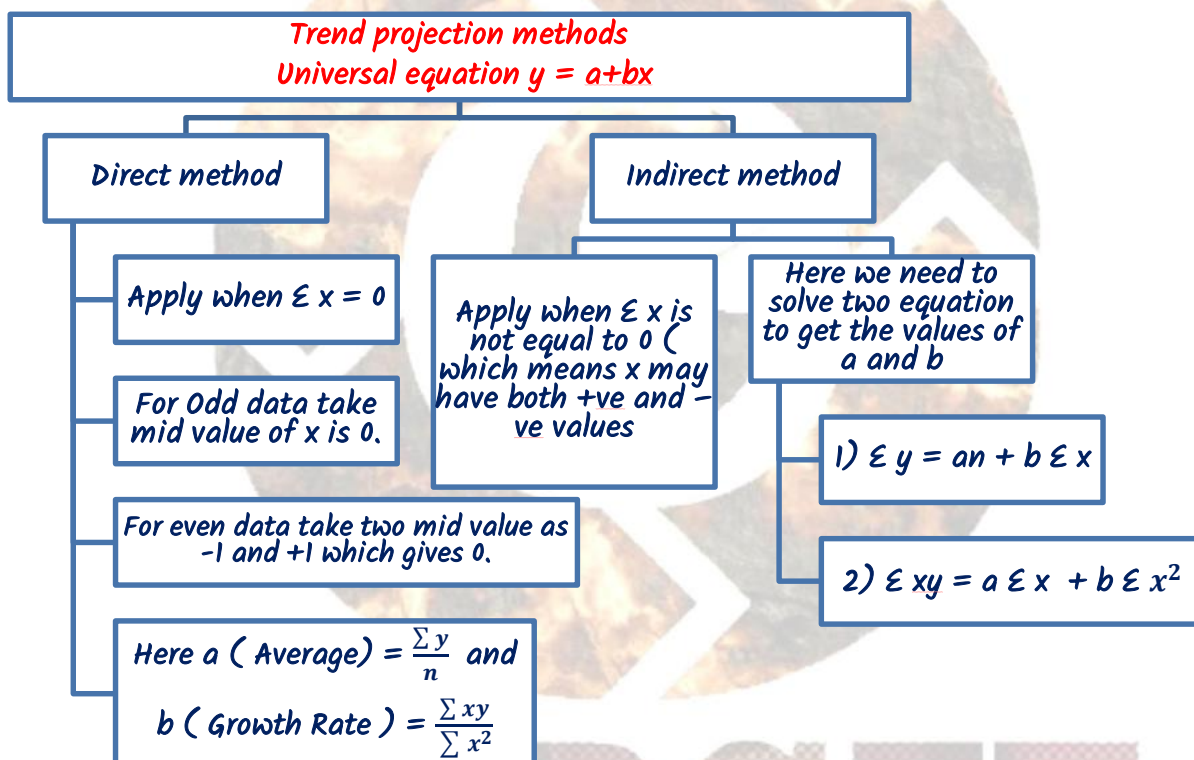
period may be one week two weeks or a couple of months.

Medium term forecasting

period may any from 3 to 6 months.

Long term forecasting

period may any from one year to any period



THE END

LINEAR PROGRAMMING

QUESTION:

ORTIS INVESTMENT MANAGEMENT LTD. (a Mutual Fund company) has Rs.40 lakhs available for investment in Government Bonds, Blue Chip Stocks, Speculative Stocks and Short Term Deposits. The annual expected return and risk factor are given below

Type of investment	Annual Expected Return (%)	Risk Factor (0 to 100)
Return (%)	(0 to 100)	
Government bonds	12	12
Blue chip Stocks	20	24
Speculative Stocks	25	50
Short terms Deposits	8	5

► The Company (OIML) is required to keep at least Rs. 5 lakhs in short term deposits and not to exceed average risk factor of 40. Speculative stocks must be at most 25% of the total amount invested.

► Required:

- I. How should ORTIS INVESTMENT MANAGEMENT LTD. invest the funds so as to maximize its total expected Annual Return?
- II. Formulate this as a Linear Programming Problem. You are not required to solve the L.P.P.

Solution

Let X_1, X_2, X_3 and X_4 be the amount to be invested in Govt bonds, Blue-chip stock, Speculative stock and short term deposits.

Objective function = maximization of annual return

= Investment * % of return

$Z =$

Subject constraints relating to

- 1) Cash
- 2) Minimum investment in short term deposit
- 3) Maximum risk
- 4) Amount to be invested in speculative stocks
- 5) Non negative function

THE END

SIMULATION



QUESTION:

Dr strong is a dentist who schedules all her patients for 30- minutes appointments. Some of the parents take more or less than 30 minutes depending on the type of dental work to be done. The following summary shows the various categories of work, their probabilities and the time actually needed to complete the work

Category	Time Required	Probability of Category
Filling	45 minutes	0.40
Crown	60 minutes	0.15
Crown	15 minutes	0.15
Extraction	45 minutes	0.15
Check-up	15 minutes	0.20

Simulate the dentist's clinic for four hours and determine average waiting time for the patients as well as the idleness of the doctor. Assume that all the patients show up at the clinic at exactly their scheduled arrival time starting at 8 a.m. Use the following random numbers for handling the above problem: 40, 82, 11, 34, 25, 66, 17, 79.

Solution

Random Number Allocation Table (minutes)

Category	Time Required	Probability of Category	Cumulative probability	Two digit random number allocation
Filling	45 minutes	0.40	0.40	0-39
Crown	60 minutes	0.15	0.55	40-54
Crown	15 minutes	0.15	0.70	55-69
Extraction	45 minutes	0.15	0.80	70-79
Check-up	15 minutes	0.20	1	80-99

Simulation Table

Patient	Random Number	Arrival rate of patient	Treatment starts at	Treatment time	Treatment ends at	Waiting time of patient	Idle time of doctor
1	40	8:00	8:00	60	9:00	0	0
2	82	8:30	9:00	15	9:15	30	0
3	11	9:00	9:15	45	10:00	15	0
4	34	9:30	10:00	45	10:45	30	0
5	25	10:00	10:45	45	11:30	45	0
6	66	10:30	11:30	15	11:45	60	0
7	17	11:00	11:45	45	12:30	45	0
8	79	11:30	12:30	45	1:15	60	0
total							

► Avg Waiting time of Patient =

► Avg Idle time of Doctor =

TARGET
Academy

THE END

STRATEGIC MANAGEMENT

STRATEGIC MANAGEMENT INTRODUCTION

STRATEGY:

Strategy may be defined as the direction and scope of a organisation over the long term, which achieves advantage for the organisation through the configuration of resources within a changing environment and to fulfill stakeholder expectations

Strategic Fit Strategic Stretch:

Strategy can be seen as matching the resources and activities to the environment in which it operates. Stretch is the leverage of the resources and competences of an organization to provide competitive advantage and /or yield new opportunities.

Strategic Management Framework:

Stage 1: Where are we now? Analysis of present situation

Stage 2: Where we want to go? Setting goals and objectives for future

Stage 3: Analyses of various alternatives to achieve the goals and objectives

Stage 4: Selecting best alternatives in line with strengths of organisation

Stage 5: Implementing and executing the selected alternatives and monitoring of the same overtimes

Major Steps in Strategic Management Process:

Step 1 : Identifying/ Defining Business Mission Purpose & Objectives

Step 2: Environmental Analysis

Step 3: Revise Organizational Direction

Step 4: Alternative Strategic Choice

Step 5: Strategy Implementation

Step 6: Strategic Evaluation & Control

VISION:

Vision is a statement of the future. It articulates the basic characteristic that shape organizations strategy.

The benefits of having a Vision

- Good visions are inspiring and exhilarating.
- Vision represents a discontinuity, a step function and a jump ahead so that the company knows what it is to be.
- Good vision helps in the creation of a common identity and a shared sense of purpose.
- Good visions are competitive, original and unique. They make sense in the market place as they are practical.
- Good visions foster risk taking and experimentation.
- Good visions foster long term thinking
- Good visions represent integrity: they are truly genuine and can be used to the benefit of the people.

MISSION:

The mission may, as such, be described as the scope of operations in terms of product, market or the service as well as customers and clients. The mission of a firm defines its reasons for existence.

Objectives:

Objectives are performance targets which organizations want as result or outcomes in the specified periods

Characteristics of Objectives: Objectives characterize business long-term prospective, such as:

- Facilitate to achieve mission and goals
- Set the basis for strategic decision making
- Clear the relationship of organization with environment
- Should be understandable by each member of organization
- Should be measurable and controllable
- Should be related to time frame
- Should be challenging
- Should be concrete and specific
- Should be formed within the constraints
- Should motivate people

STRATEGIC LEVELS IN ORGANISATION:



THE END

STRATEGIC ANALYSIS AND PLANNING

SWOT ANALYSIS

The acronym SWOT stands for Strengths, Weaknesses, Opportunities, and Threats.

Corporate Strengths

- (i) Financially very sound
- (ii) Good products and product-mix with high demand including future prospects
- (iii) Full capacity utilisation, locational advantages
- (iv) Good infrastructures
- (v) Good industrial relations
- (vi) No political interference
- (vii) Good performance in production and services with consistent records
- (viii) Good raw materials base
- (ix) Incentives from State Government
- (x) Good relation with Government departments
- (xi) Technologically rich and with expertise

Corporate Weaknesses:

1. Under-utilization of capacity due to economic slump
2. High debt burden in the capital structure
3. Poor product-mix
4. Lack of managerial strengths
5. Industrial unrest
6. Technology gap
7. Demand gap
8. Poor infrastructures
9. Raw materials source at a distance
10. Lack of latest information technology
11. Competition war
12. Global threats

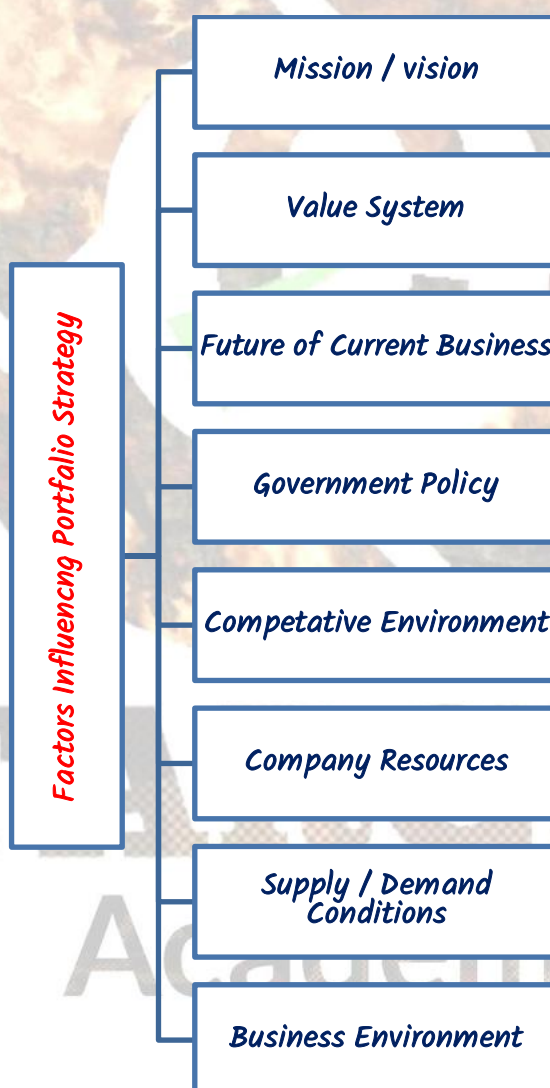
Opportunities:

1. Seasonal/climatical demand of products
2. Global markets for the company's products/services (Export opportunities)
3. Rural markets to explore and to penetrate
4. To explore the markets in the undeveloped/under-developed/developing states/places
5. To avail of the incentives/concessions declared by Central and State Governments
6. Diversification's opportunities
7. Mergers/acquisition opportunities
8. Good home market available due to boost in the economy
9. Liberalized policies of the Government both at Centre as well as State level for the individual production and industrial developments

Threats:

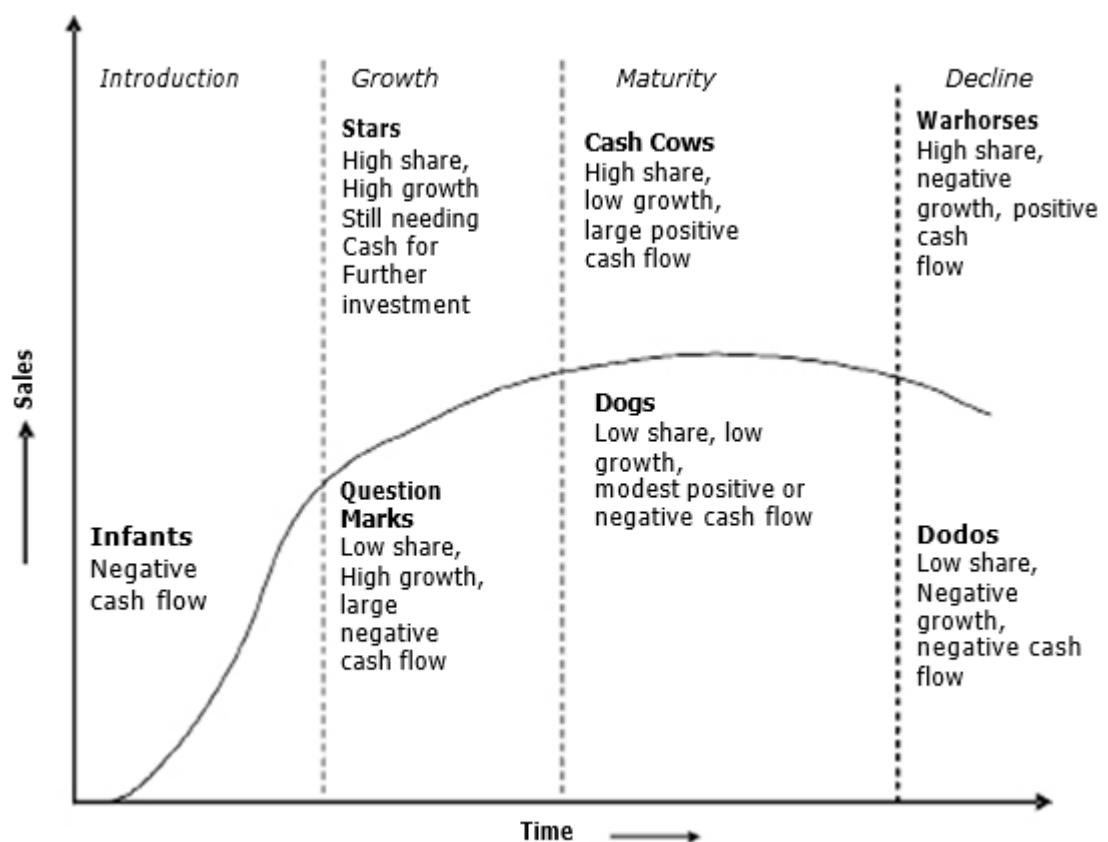
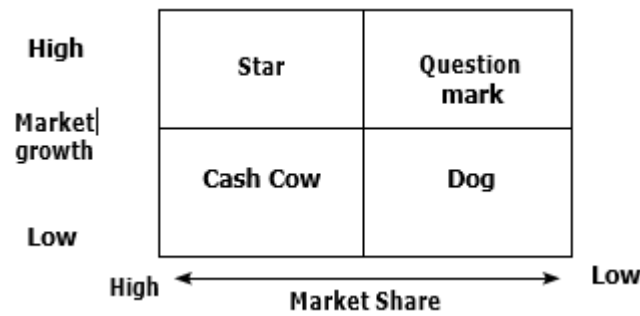
1. Globalization
2. Competition
3. Price cutting war
4. Free imports
5. Industrial unrest
6. Political instability
7. Quality thrusts
8. High and adverse debt equity ratio
9. Increase in financing cost
10. Economic slowdown due to international recession impact

Factors influencing Portfolio Strategy:



BCG MTRICES:

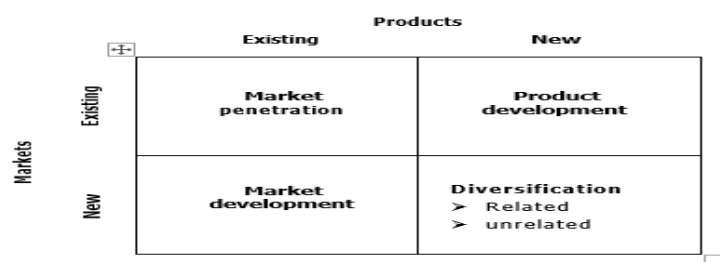
analyses 'products and businesses by market share and market growth.



Product Life Cycle with market share/market growth classification

ANSOFF'S MODEL:

Market Penetration Strategy:



Competitive position	Stage of Industry Maturity			
	Embryonic	Growth	Mature	Ageing
Dominant	- Startup - Fast growth - Build barriers	- Fast growth - Attain cost leadership - Renew - Defend position - Act offensive	- Defend position - Attain cost leadership - Renew - Fast growth - Act offensive	- Defend position - Cost focus - Renew - Harvest or divest
Strong	- Start up - Differentiate - Fast growth	- Fast growth - Renew - Differentiate - Cost focus - Act offensive	- Attain cost leadership - Renew - Differentiate - Grow with industry	- Find niche - Hold niche - Hang on - Grow with industry - Harvest
Favourable	- Start up - Differentiate - Fast growth	- Differentiate - Cost focus - Catch up - Grow with industry	- Harvest - Find niche - Hold niche - Hang on - Renew - Turnaround - Cost focus - Differentiation focus - Grow with industry	- Harvest - Divest
Tenable	- Start up - Grow with industry - Cost focus - Differentiation focus	- Hold niche - Find niche - Hang on - Harvest - Catch up - Turnaround - Cost focus - Differentiation focus - Grow with industry	- Harvest - Turnaround - Find niche - Retrench - Hold niche	- Divest - Retrench
Weak	- Find niche - Catch up - Grow with industry	- Turnaround - Retrench - Withdraw	- Withdraw - Divest	- Withdraw

Dominant - It is comparatively a rare situation where the SBU enjoys monopoly position or very strong market ability of its products.

Strong-When an SBU enjoys strong competitive position, it can afford to chalk out its own strategies without too much concern for the competitors.

Favourable- In this competitive position, no firm will enjoy dominant market share and the competition will be intense.

Tenable- The tenable competitive position implies that a firm can survive through specialization and focus. These firms are vulnerable to stiff competition in the market. They can withstand with cost focus and differentiation focus strategies.

Weak- The weak firms will generally show poor performance. They can withstand with niche strategy and can become strong players in their area. The consistent weak performance may need to divest or withdraw from the product line.

STAGES IN STRATEGIC PLANNING:



Steps in Contingency Planning:

Robert Linnemam and Rajan Chandran have suggested that a seven-step process as follows:

Step 1 - Identify the beneficial and unfavorable events that could possibly derail the strategy or strategies.

Step 2 - Specify trigger points. Calculate about when continue events are likely to occur.

Step 3 - Assess the impact of each contingent event. Estimate the potential benefit or harm of each contingent event.

Step 4 - Develop contingency plans. Be sure that contingency plans are compatible with current strategy and are economically feasible.

Step 5 - Assess the counter impact of each contingency plan. That is, estimate how much each contingency plan

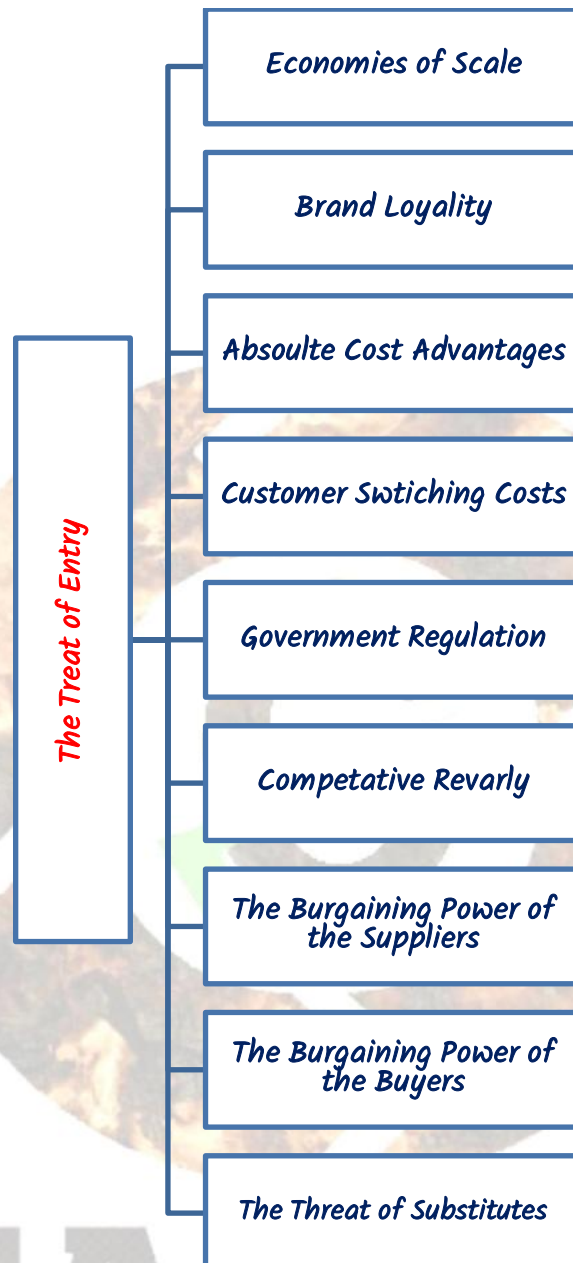
will capitalize on or cancel out its associated contingent event. Doing this will quantify the potential value of each

contingency plan.

Step 6 - Determine early warning signals for key contingency event. Monitor the early warning signals.

Step 7 - For contingent event with reliable early warning signals, develop advance action plans to take advantage of the available lead time

PORTER'S FIVE FORCES FRAMEWORK:

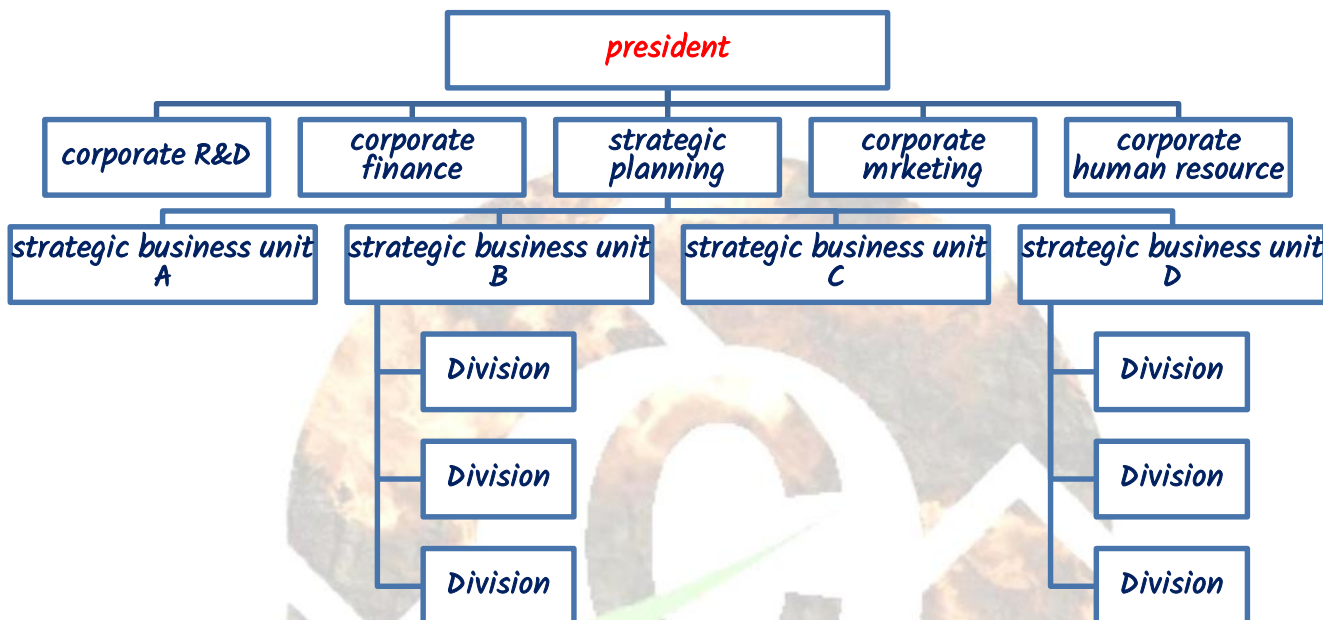


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STRATEGY BUSINESS UNIT (SBU):

SBU groups similar divisions into “Strategic Business Units” and then delegate’s authority and responsibility of each unit to a senior executive who is normally identified as CEO or MD of that SBU.

SBU Structure:



Advantages:

- (i) Promotes accountability since units’ heads are responsible for individual SBU profitability
- (ii) Career development opportunities are further higher in this structure
- (iii) Allow better control of categories of products manufacturing, marketing and distributions
- (iv) Helps to expand in different related and unrelated businesses

Disadvantages:

- (i) May provide inconsistent approach to tackle customers, etc, because each unit may work in it’s own way to handle situations
- (ii) High cost approach

Matrix Organisation Structure:

The above structures (Functional, Divisional and SBU) consist of flow of authority from top to bottom i.e. vertical flow whereas Matrix structure contains both vertical and horizontal flow of communications or authority. This type of structure is frequently used in IT organisation for managing different projects. Each individual project is managed by a project manager and projects manager will have his team arranged under him.

Advantages:

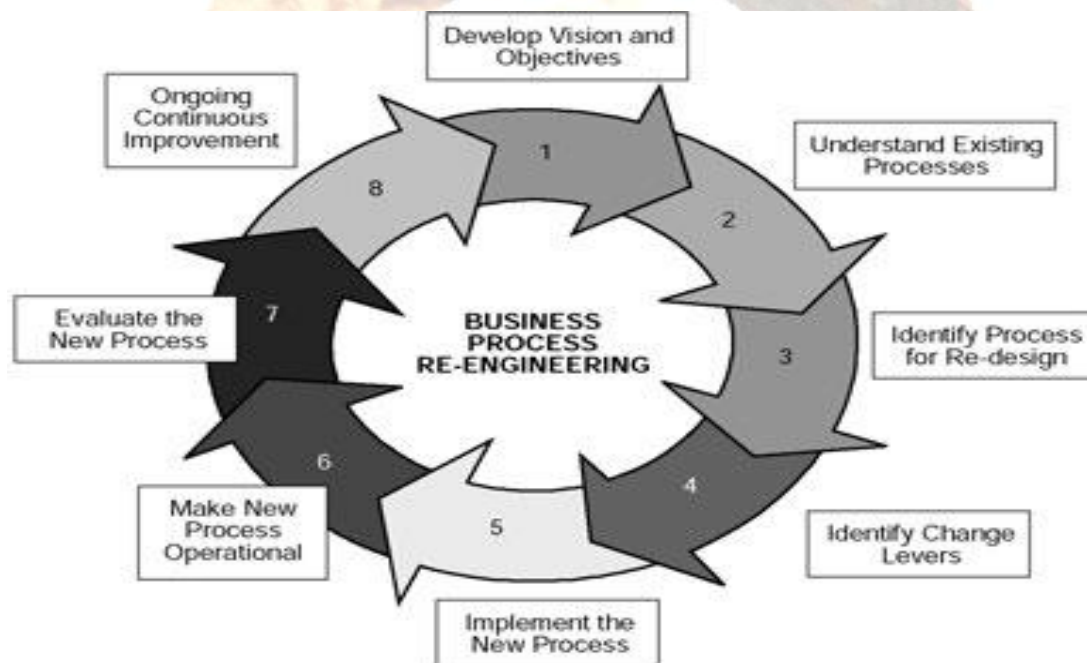
- (i) Useful for some specific industries like Information Technology, Healthcare etc.
- (ii) Employee can see visible results of their efforts
- (iii) Remove barrier to communications
- (iv) Managing projects are easy
- (v) Effective structures when environment is very dynamic

Disadvantages:

- (i) Complex structure as this contains both vertical and horizontal flow of information
- (ii) High cost approach due to more management positions
- (iii) Dual lines of authority
- (iv) Conflicts arises in the allocation of resources

BUSINESS PROCESS RE-ENGINEERING:

BPR seeks to help companies radically restructure their organizations by focusing on the ground-up design of their business processes. According to Davenport (1990) a business process is a set of logically related tasks performed to achieve a defined business outcome. Re-engineering emphasized a holistic focus on business objectives and how processes related to them, encouraging full-scale recreation of processes rather than iterative optimization of subprocesses. Business process re-engineering is also known as business process redesign, business transformation, or business process change management



Source: Vakola *et al* (1998)

Principle of BPR:-

BPR is achieving dramatic performance improvements through radical change in organizational processes, rearchitecting of business and management processes. It involves the redrawing of organizational boundaries, the reconsideration of jobs, tasks, and skills.

CORE COMPETENCE AND CRITICAL SUCCESS FACTORS:

Critical Success Factors Critical Success Factors (CSFs) are those product features which are particularly valued by a group of customers and, therefore, where the organisation must excel in order to outperform competition. According to Rockart there are four major sources of CSFs

- Structure of the Industry:
- Competitive strategy
- Environmental Factors

➤ *Temporal factors*

In order to identify CSFs in the industry there are three important areas that need to be analysed. They are known as Ohmae's three Cs. They are.

- *Customers*
- *Competition*
- *Corporation*



THE END

INTRODUCTION

Digital technologies include electronic tools, systems, devices and resources that generate store or process data. In scientific terms, digital technology is a technology in which information is represented in digital form, i.e., as 0s and 1s. Some of the examples of digital technologies are online games, multimedia, social media and mobile phones.

The invention of transistor in the year 1947 is often credited with the beginning of digital technology era. The Digital Revolution began between the late 1950's and 1970's with the transition of technology from mechanical and analog to digital. Governments across the world were using computers and by 1970s and many household had personal computers. This was the time when digital computers and digital record keeping became the norm and dramatically changed the way humans communicate. The introduction of digital technology has led to job creation. This paved the way to the Information Age.

While some experts are of the opinion that the world has moved out of the Digital Revolution and into the Information Age, others believe that the Digital Revolution has only just begun. The technological advancements have actually increased manufacturing output with robots replacing humans. The Digital Revolution has impacted the medical industry as well with the use of genetic information for personalized treatment plans. The Digital Revolution is allowing us to overcome many limitations rapidly and opening up new frontiers with unprecedented speed.

A digital strategy, sometimes called a digital media strategy, is a plan for maximizing the business benefits of data assets and technology-focused initiatives. A successful digital strategy requires a cross-functional team with executive leadership, marketing and information technology (IT) members. It involves breaking down the silo between information technology leaders and those of other customer-facing departments to deliver a consistent digital customer experience. In today's organization, there are many ideas of what constitutes a digital strategy. A marketing executive will see a digital strategy as social media and web channels. An IT person would see a digital strategy as cloud. An operations executive will see it as data analytics. An R&D executive would see it as online products. A financial person will see it as online revenue channels.

While traditional information technology strategies tend to focus on long-term road maps and budget forecasts that extend years into the future, digital strategies tend to rely on short-term, month-to-month road maps that are tied to actionable items and measurable business objectives. To be successful, the strategy should place focus on where the company value chain is vulnerable to disruption and could be made stronger and more economically viable from a digital reboot. One of the challenges for establishing a digital strategy is to figure out which services should be done in-house, which services should be outsourced to a third-party provider and which services require customization in order to be effective.

There is a tendency to talk about digital transformation interchangeably with digital strategy. The two terms are closely related, but differ in scope.

Digital transformation drives change in three areas: customer experience, operational processes and business models. The process of digital transformation requires coordination across the entire organization, and involves business culture changes.

Digital strategy, on the other hand, focuses on technology, not culture. Digital strategy is most relevant to changes in business models, and uses technology to create the capabilities a company needs to become a digital business. Setting down a strategy is a key component of the transformation process, and ensures that technology is being implemented in a way that supports the business objectives.

The five following questions become relevant for an organisation's digital transformation:

- Does digital technology change the businesses you should be in?
- How could digital technology improve the way you add value to the businesses you are in?
- Could digital technology change your target customer?
- Does digital technology affect the value proposition to your target customer?
- How can digital technology enhance the enterprise capabilities that differentiate you from your competition?

DIGITAL TRANSFORMATION FOR COMPETITIVE ADVANTAGES

- When an organisation embarks on a transformation journey, embracing digital technologies, two of their main objectives are to out manoeuvre competitors and attain sustainable competitive advantages or growth and prosperity. Basu (2021)
- When 'trans-created' solutions are offered by an entity to solve customers' problems, meet their latent demands, and/or simplify operating processes, that business entity starts operating in a strategically created 'blue ocean' market space in that traditional sector. The phrase 'trans-created' means creation of a new versatile product and/or related business model transforming a traditional one run by legacy systems.
- Innovative applications of digital technologies help them to implement the strategic plan and enjoy first mover's advantages. Such interplays of strategies and technologies can be termed as 'innovation', which is a combination of three tasks. viz., innovation, invention, and creation driven by distinctively formulated strategies.
- The objective is to generate and share values. Here value also includes value for time, quality, greener technology, and minimised risks, in addition to additions to organisations' profit measurable in monetary terms.
- Basu (2021) mentions that according to Bharadwaj et.al. , the emerging idea on digital business strategies may be categorized under four major groups viz, scope, scale, agility, and sources of value creation.
- These would be the influencing factors for scoping digital strategies for those business entities which want to leverage digital technologies for value creation by integration of operating business

processes.

Research scholars Chanas and Hess in their seminal work concluded that “Digital transformation strategies are predominantly shaped by a diversity of emergent strategizing activities of separate organisational sub communities through a bottom-up process and prior to the initiation of a holistic digital transformation strategy by top management. As a result, top management’s deliberate strategies seek to accomplish the subsequent alignment of pre-existing emergent strategy contents with their intentions and to simultaneously increase the share of deliberate contents.” These two researchers have graphically explained the process of interplay of business strategy formulation and technology through the following diagram.

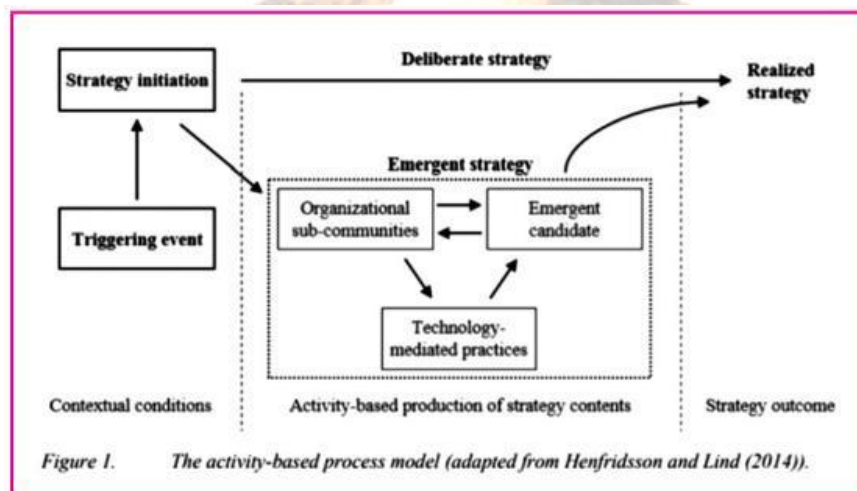


Figure 11.1

Source: Basu, (2021). Management Accountant, November, pg.78

Common elements of Digital Strategy.

- **Choose a Leader** -This is arguably the most important part of creating a digital strategy, but choosing the right person will depend on company culture, structure and priorities. Whether companies place leadership with the CEO or an appointed Chief Digital Officer, the leader’s influence will need to match the scope of digital strategy; otherwise, it will be difficult to create the full buy-in from each department necessary to make effective changes.
- **Attack vs. Defend**- McKinsey & Company emphasizes that companies would do well to categorize their potential threats and opportunities in digital business, then compare these against their own purpose. This clarifies whether a proactive or defensive stance needs to guide new initiatives.
- **Take a Measured Approach** - Digital strategy often incorporates a process for assessing whether new technology will really complement or grow the current business. If you fear that your company is already behind on digital, it can be tempting to rush into a project without looking at how it fits your current strategy. By taking a measured approach, you can avoid wasting resources on initiatives that don’t align with your business’s needs and priorities.
- **Future Proof** - The goal of digital transformation is to create an appropriate foundation for digital business. This means creating an organization that can continue to reinvent itself as necessary to keep up with changes in technology and customer expectations. Digital strategy should be visionary enough

to carry companies through changes in the digital economy, in a way that continues to bring a digital edge to the business.

(<https://www.liferay.com/resources/1/digitalstrategy#:~:text=Digital%20strategy%20focuses%20on%20using,use%20to%20achieve%20these%20changes.>)

INNOVATIONS AND DISRUPTIVE BUSINESS MODELS

The clarion call of present time is to first learn surfing for revival and survival, and then grow. One of the most critical tasks for saving the entity from drowning is implementation of digital transformation (DT) befitting the emerging way of living and operating in the new world order. This is a journey and not a destination to be reached just for once. Any organisation can lay the foundation of digital transformation on 4Ds, viz., Discover, Design, Deliver and De-risk as suggested by McKinsey; 2 Ps, i.e., People and Process and 1 T, i.e., Tools. Basu (2020)

The following measures can be listed for orchestrated planning and execution across hierarchical levels, length and breadth of the organisation:

- Integration of digital technologies with functional areas that will bring metamorphosis in the process of conducting business operations with the ultimate objective of improving stakeholders' relationship and experience management.
- Challenging the status quo of policies and standard operating practices for driving towards the inevitable metamorphosis.
- Training of existing human capital with different capabilities and redeployment for dealing with digital tools consciously being mindful of the requirement of cultural change and removing fear of unknown to embrace the new.
- Conducting experiments with digital technologies to assess suitability vis-à-vis the specificities of the needs of business and its stakeholders with the ultimate objective of incremental contributions for profit and profitability.
- Approaching the long-drawn task with a mindset of creative destruction of long-standing business policies and processes in favour of relatively new digitally driven practices that are still being defined, adopted, and stabilised.
- Providing the DT team, a free environment with committed assistance for innovative applications of various digital tools, if not 'innoventing' new tools, and establishing collaboration with man and digitally operated machines, which are artificially intelligent.
- Ensuring data privacy, cyber security, and information safety as an integral part of the entity's policy and processes for risk-enabled performance management.
- Permitting implementation team to make mistakes and not penalising them for the same. Instead incentivise every attempt irrespective of success or failure so that the environment is congenial for innovating and delivering the best.
- Unwavering commitment of funds and other resources, as well as extending help and support to

the dedicated DT team by every single functional area of the organization

Therefore, digital transformation is an orchestrated combination of people, process and technology for discovering, designing, and delivering with risk enabled process management what the stakeholders want. Through deductive logic one can explore out of the above narratives five essential elements of digital transformation, viz., stakeholders' relationship and experience, operational agility, culture and leadership, workforce enablement and integration of digital technologies for revival and sustainable growth with prosperity. The author reiterates that DT should be considered as a journey and not a destination because it is a task in eternity.

Basu (2020) comments that diffusion of digitization and digitalization is at the core of the tasks in this era of DT. Making meaning out of data and drawing inferences for strategic planning and deciding tactics for execution are the two critical drivers for attaining competitive advantages.

- **Innovation:** There is a need to come out from the aura of this buzz word. Conducting exploratory analysis for identifying hitherto unattended/unresolved problems and latent demands of society from the perspective of the business domain and beyond become imperative. Applying ground-breaking thoughts to determine costeffective ways for meeting those demands and solving problems with a win-win approach for both customers and the business entity have become the need of the hour. This may cause disruptions to existing players.
- **Digitization:** All analogue data needs to be converted and generated by operating machinery and legacy systems, devices, physical documents, etc. into digital data and records. Taking steps to ensure that all data to be used in the process of business transformation are relevant, generated from first-hand sources and trustworthy is important.
- **Digitalization:** The need to use digital technologies befitting the needs for changing business, operating and revenue models with the objective to generate more turnover and achieving maximisation of value creation as well as minimisation of value destruction needs to be implemented. For example, brick and mortar business models is added with and /or replaced by virtual marketplace for e-Commerce.
- **Digital Transformation:** One has to embark upon the journey with strategically planned tasks for managing changes and applying digital technology to stay ahead of competition with an agile mindset. Taking all possible measures for training/ upskilling of workforce and inculcating digital agility.

It is evident from the above that two major tasks for digital transformation are Digitization and Digitalization as opined by Antonio Grasso. A simple example for this can be drawn from manufacturing industries. Lots of analogue data are generated in industrial units by various counters, flow meters, etc. to count/measure throughputs, output generations, and consumption of utilities like steam, power, chilled water, etc. Voluminous data are also generated in physical records maintained by workmen/supervisors including for maintenance of machines, consumption of spare parts and deployment of technicians. However, such data are not digitised with the help of IoTs and APIs, and stored for conducting analytical studies that may provide meaningful help in planning, monitoring, controlling, deriving trends and patterns, etc., and drawing inferences by cross functional data analyses. All these when done can help in making strategic decisions and execution there of which

may in turn help in maximisation of value generation and minimisation of value creation.

Layers of Digital Transformation

- The following seven layers simplify the task of DT
- **Data aggregation** - Aggregation of business relevant data from reliable sources, including conversion of analogue data to digital form and store for easy retrieval.
- **Data management** - Categorising and organizing the digitised data and making it ready for application of further processes.
- **Workflow automation** - Application of algorithms and utilising the data for the business process to be envisioned.
- **Process component** - Application of algorithms and start utilising the data for the business process.
- **Platform interface integration** - Integrating the digital system with the core systems for smoother operations.
- **End to end processing** - Conducting end to end processing and ensure error free transformation.
- **Front end software** - Integrating with the front end of stakeholders' devices so that she/he can get seamless services in a technologically collaborated mode.

Big Data

- Big data is a collection of data that is huge in volume and is growing exponentially with time.
- It is a data with so large size and complexity that none of traditional data management tools can store it or process it efficiently.
- Big data is also a data but with huge size. Examples of Big Data include stock exchange, social networking site, jet engine, etc.
- There are three types of Big Data namely, structured, unstructured and semi-structured.
 - A 'structured data' is any data that can be stored, accessed and processed in the form of fixed format. A lot of success has been achieved over a period of time in developing techniques for working with such kind of data (where the format is well known in advance) and also deriving value out of it.
 - An unstructured data is one with unknown form or structure. In addition to the size being huge, unstructured data poses multiple challenges in terms of its processing for deriving value out of it.
 - A semi-structured data can contain both the forms of data. Example of semi-structured data is a data represented in an XML file.

Big Data can be described by the following characteristics:

- **Volume** – Size of data plays a very crucial role in determining value out of data. Also, whether a particular data can actually be considered as a Big Data or not, is dependent upon the volume of data. The name Big Data itself is related to a size which is enormous. Hence, 'Volume' is one characteristic which needs to be considered while dealing with Big Data solutions.
- **Variety** – Variety refers to heterogeneous sources and the nature of data, both structured, unstructured and semi structured. During earlier days, spreadsheets and databases were the only sources of data considered by most of the applications however, in recent period data can be in

the form of emails, photos, videos, monitoring devices, PDFs, audio, etc.. These data also need to be analysed.

- **Velocity** – The term ‘velocity’ refers to the speed of generation of data and processing of data to be responsive to the needs of the customers. Big Data velocity deals with the speed at which data flows in from sources like business processes, application logs, networks, and social media sites, sensors, mobile devices, etc. The flow of data is massive and continuous.
- **Variability** – This refers to the inconsistency which can be shown by the data at times, thus hampering the process of being able to handle and manage the data effectively.

The following are some of the benefits of Big Data Processing

- Businesses can utilize outside intelligence while taking decisions.
 - Improved customer service.
 - Early identification of risk to the product/services, if any.
 - Better operational efficiency.
- **Cloud Computing**
- ✓ Cloud computing is a general term for anything that involves delivering hosted services over the internet.
 - ✓ These services are divided into three main categories or types of cloud computing: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS).
 - ✓ IaaS providers, such as Amazon Web Services (AWS), supply a virtual server instance and storage, as well as application programming interfaces (APIs) that let users migrate workloads to a virtual machine (VM). Users have an allocated storage capacity and can start, stop, access and configure the VM and storage as desired. In the PaaS model, cloud providers host development tools on their infrastructures. Users access these tools over the internet using APIs, web portals or gateway software. PaaS is used for general software development, and many PaaS providers host the software after it's developed.
 - ✓ SaaS is a distribution model that delivers software applications over the internet; these applications are often called web services. Users can access SaaS applications and services from any location using a computer or mobile device that has internet access. In the SaaS model, users gain access to application software and databases.
- **A cloud can be private or public.**
- ✓ A public cloud sells services to anyone on the internet.
 - ✓ A private cloud is a proprietary network or a data center that supplies hosted services to a limited number of people, with certain access and permissions settings.
 - ✓ Private or public, the goal of cloud computing is to provide easy, scalable access to computing resources and IT services. Examples of cloud computing include Google Docs, Microsoft 365, Email services, Google Calendar, Skype, Wats App, Zoom, etc.

Cloud computing benefits to modern businesses including the following:

- **Cost management:**
- **Data and workload mobility:**
- **Business continuity and disaster recovery (BCDR):**

The demerits of cloud computing

In spite of the fact that cloud computing has huge benefits yet, it has its own causes of concern as follows:

- **Cloud security:** There is a clear lack of transparency regarding how and where sensitive information entrusted to the cloud provider is handled. When relying on the cloud, organisations risk data breaches, hacking of APIs and interfaces, compromised credentials and authentication issues.
- **Cost unpredictability:** The concept Pay-as-you-go subscription plans for cloud use, along with scaling resources to accommodate fluctuating workload demands, can make it tough to define and predict final costs.
- **Lack of capability and expertise:** With cloud-supporting technologies rapidly advancing, organisations are struggling to keep up with the growing demand for tools and employees with the proper skill sets and knowledge needed to architect, deploy, and manage workloads and data in a cloud.
- **IT governance:** The emphasis on do-it-yourself capability in cloud computing can make IT governance difficult, as there is no control over provisioning, de provisioning and management of infrastructure operations.
- **Compliance with industry laws:** When transferring data from on-premises local storage into cloud storage, it can be difficult to manage compliance with industry regulations through a third party.
- **Management of multiple clouds:** Every cloud is different, so multi-cloud deployments can disjoint efforts to address more general cloud computing challenges.
- **Cloud performance:** Network and provider outages can interfere with productivity and disrupt business processes if organisations are not prepared with contingency plans.
- **Building a private cloud:** Architecting, building and managing private clouds whether for its own purpose or for a hybrid cloud goal can be a daunting task for IT departments and staff.
- **Cloud migration:** The process of moving applications and other data to a cloud infrastructure often causes complications. Migration projects frequently take longer than anticipated and go over budget.
- **Vendor lock-in:** Switching between cloud providers can cause significant issues. This includes technical incompatibilities, legal and regulatory limitations and substantial costs incurred from sizable data migrations.

[<https://www.techtarget.com/searchcloudcomputing/definition/cloud-computing>]

EMERGING TRENDS IN DIGITAL AND SOCIAL MARKETING STRATEGIES

Artificial Intelligence:

- Artificial intelligence (AI) is intelligence exhibited by machines and systems, with machines imitating functions which are mostly related with human cognition.
- There are three levels of AI namely; Narrow AI, General AI/human-level and Super AI.
- Narrow AI refers to the current state-of-the-art with existing software that automates a traditionally human activity and often outperforms humans in efficiency and endurance in one specialized area, e.g., forecasting the weather, autonomous driving, etc.
- General AI/human-level AI describes the capacity of machines to understand their environment and reason and act accordingly, just as a human would in all activities across all dimensions, including scientific creativity, general knowledge, and social skills.
- Super AI, the highest level of AI, is reached when AI becomes much smarter than the best human brains in practically every field.
- Super AI systems can make deductions about unknown environments.
- Machine learning (ML) describes automated learning of implicit properties of, or underlying rules for data. It is a major component for implementing
- AI since its output is used as the basis for recommendations, decisions, and feedback mechanisms with regards to a previously unknown situation.
- ML is an approach to creating AI. As most AI systems today are ML-based, the terms are often used interchangeably-particularly in a business context.
- ML involves training algorithms on sample input data to optimize its performance on a specific task so that the machine gains a new capability.
- Deep learning is a branch of AI. It mainly deals with neural networks that consist of many layers, hence the name “deep.” In the last years, deep neural networks have been the most successful AI approach in many areas.
- AI is required for analyzing previously unavailable or indecipherable data (e.g., video or sound which previously could only be interpreted by humans), in order to detect quality issues.
- AI also has the ability to help detection and analysis mechanisms, improve its own accuracy by continuously learning from the issues detected, and optimize manufacturing processes by incorporating feedback and adjusting the control parameters accordingly.
- It is amazing to note how much friendly a technology AI is emerging to help people in quest for solving problems for society.

According to Basu (2019) versatility of AI is transcending all areas of solution building. The most encouraging is that AI is emerging as a friend of all for keeping cyber criminals away. It is also acquiring self-propelling energies.

More and more corporates, who were observing peers attaining competitive advantage using digital technologies, are now plunging into the act of digital transformation, particularly using AI with IoTs and Block chain.

Blockchain: Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible (house, car, cash, land, etc.) or intangible (intellectual property, patents, copyrights, branding). Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved. The importance of block chain network stems from the fact that business runs on information. The information should be accurate and received fast. Blockchain is ideal for delivering that information because it provides immediate, shared and completely transparent information stored on an immutable ledger that can be accessed only by permissioned network members. A blockchain network can track orders, payments, accounts, production and much more.

As members share a single view of the truth, one can see all details of a transaction end to end, giving greater confidence, as well as new efficiencies and opportunities.

The important components of a block chain includes

Distributed ledger technology

All network participants have access to the distributed ledger and its immutable record of transactions. With this shared ledger, transactions are recorded only once, eliminating the duplication of effort that's typical of traditional business networks.

Immutable records

No participant can change or tamper with a transaction after it's been recorded to the shared ledger. If a transaction record includes an error, a new transaction must be added to reverse the error, and both transactions are then visible.

Smart contracts

A smart contract is stored on the blockchain and executed automatically. A smart contract can define conditions for corporate bond transfers; include terms for travel insurance to be paid and much more. A smart contract acts a set of rules and allows fastest transactions.

The benefits of blockchain network

Increased trust

As block chain is used by only the members who are within a defined network. This assures the members that the data being received by them is accurate and timely data. Moreover, the confidential blockchain records will be shared only with network members to whom one has specifically granted access.

Greater security

The increase security in blockchain network arises from the fact that consensus on data accuracy is required from all network members, and all validated transactions are immutable because they are recorded permanently. No one, not even a system administrator, can delete a transaction.

Increased efficiencies

With a distributed ledger that is shared among members of a network, time-wasting record reconciliations are eliminated. The smart contract enables automated transactions thereby saving on time.

Robotic Process Automation: Robotic Process Automation (RPA) is a form of business process automation that allows anyone to define a set of instructions for a robot or 'bot' to perform. RPA bots are capable of mimicking most human-computer interactions to carry out a ton of error-free tasks, at high volume and speed. Robotic process automation is not a physical or mechanical robot. RPA is the process by which a software bot uses a combination of automation, computer vision, and machine learning to automate repetitive, high-volume tasks that are rule-based and trigger-driven. Robotic process automation tools are best suited for processes with repeatable, predictable interactions with IT applications. These processes typically lack the scale or value to warrant automation via IT transformation. RPA tools can improve the efficiency of these processes and the effectiveness of services without fundamental process redesign. Robotic process automation software "robots" perform routine business processes by mimicking the way that people interact with applications through a user interface and following simple rules to make decisions. Entire end-to-end processes can be performed by software robots with very little human interaction, typically to manage exceptions.

The benefits of RPA solutions not only reduce cost but also include:

- Decreased cycle times
- Flexibility and scalability
- Improved accuracy
- Improved employee morale
- Detailed data capture

Basu (2019) mentions that the next Russian Soyuz spacecraft will be navigated by a humanoid Skybot sitting in commander's chair. It is one of the latest versions of Russia's FEDOR series robots serving as all-purpose standin for humans in everything from rescue work to driving cars and now, flying into space. Such robots will be artificially intelligent and have cognitive skills almost like of a human astronaut. Artificially intelligent robots will soon be able to identify wrongdoers through face and outfit recognition ability and take actions, including killing if need be. This group of robots will eventually be of help to security forces for surveillance and dealing with strategy execution in battlefields and curbing terrorism. Robotists have successfully brought out the next genre of Robots called Cobots by applying DevOps concept. These are designed to interact and collaborate with human beings at a shared workspace. Cobots will ensure delivery with higher speed, quality and cost optimisation, yet will not cause much reduction in workforce.

- **Digitalisation of Sports:** Technology is playing a larger role than ever in the lives of diehard fans and followers, opening the way for sports organisations to create new, innovative customer experiences. Partnering with broadcasters and new distribution platforms can give fans the experiences they want, and capture viewership across multiple devices, including mobile. Sports organisations need to strategically leverage digital media to build direct connections with fans. One way is to partner with broadcasters to master content across multiple channels, which also allows for a wealth of real-time marketing opportunities. Ultimately, digital optimization of content across platforms will help broaden content reach for sports organisation. Many sports fans are no longer interested in the game alone—they crave the kind of exclusive and shareable experiences that can

be amplified by technology. Sports organisations could grow stadium attendance by using immersive technologies such as augmented and virtual reality to create an intensely exciting viewing experience. They can also increase engagement by leveraging loyalty and customer relationship management data to tailor experiences to individual fan preferences. [<https://www2.deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/digital-transformation-and-future-changes-in-sports-industry.html>]. According to Basu (2019) the cricket enthusiast will be happy to learn that a Smart Chip, planted in a ball, can now bring amazing advancements for umpires taking more accurate decisions and help trainers in training players more effectively.

- **Internet of Things:** The internet of things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. A thing in the internet of things can be anything from a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low or any other natural or man-made object that can be assigned an Internet Protocol (IP) address and is able to transfer data over a network. Increasingly, organisations in a variety of industries are using IoT to operate more efficiently, better understand customers to deliver enhanced customer service, improve decision-making and increase the value of the business. In IoT ecosystem consists of web-enabled smart devices that use embedded systems, such as processors, sensors and communication hardware, to collect, send and act on data they acquire from their environments. IoT devices share the sensor data they collect by connecting to an IoT gateway or other edge device where data is either sent to the cloud to be analyzed or analysed locally. Sometimes, these devices communicate with other related devices and act on the information they get from one another. The devices do most of the work without human intervention, although people can interact with the devices—for instance, to set them up, give them instructions or access the data. [<https://www.techtarget.com/iotagenda/definition/Internet-of-Things-IoT>].

Although the idea of IoT has been in existence for a long time, a collection of recent advances in a number of different technologies has made it practical. These technologies include:

- **Access to low-cost, low-power sensor technology:** Affordable and reliable sensors are making IoT technology possible for more manufacturers.
- **Connectivity:** A host of network protocols for the internet has made it easy to connect sensors to the cloud and to other “things” for efficient data transfer.
- **Cloud computing platforms:** The increase in the availability of cloud platforms enables both businesses and consumers to access the infrastructure they need to scale up without actually having to manage it all.
- **Machine learning and analytics:** With advances in machine learning and analytics, along with access to varied and vast amounts of data stored in the cloud, businesses can gather insights faster and more easily. The emergence of these allied technologies continues to push the boundaries of

IoT and the data produced by IoT also feeds these technologies.

- **Conversational artificial intelligence (AI):** Advances in neural networks have brought natural-language processing (NLP) to IoT devices (such as digital personal assistants Alexa, Cortana, and Siri) and made them appealing, affordable, and viable for home use.

Smart Lighting

This is another one of the Internet of Things examples that have gradually been coming into common usage. Bulbs and battens connected to Wifi can be turned on and off remotely. Schedule for usage can be set for these devices along with their bright nesses controlled and their power consumption monitored. Using other IoT devices, smart lighting devices can also be turned on and off by voice alone. The power consumption of these devices can also be easily monitored using IoT.

Smart Parking

It is hard to regulate the occupancy and parking coverage in large multi-story car parking facilities. Among the many Internet of Things examples is the use of IoT in such facilities for counting the number of cars that have driven into the facility and the number that have driven out. Specific devices can also give you the exact location where you have parked your car so you are not lost.

Medical Fridges

Medical fridges are a grand entry to the Internet of Things examples list and can be used for regulatory compliance and safety purposes. Vials of vaccines and medicines can often be spoiled if they are not kept at the correct temperatures. Medical refrigerators cannot be monitored throughout the day, especially in person. Having IoT sensors inside medical fridges can enable them to be monitored remotely, and their temperature changed as per requirement

Source: <https://www.jigsawacademy.com/5-best-examples-iot-applications-real-world>

The different types of digital marketing strategies are as follows:

- **Social Media Marketing Platforms**

Today's consumers are highly reliant on social media platforms such as Instagram, Facebook, LinkedIn, and Snapchat. This is why it is essential that brands are active across accounts. Social media platforms allow marketers to reach their prospects in a myriad of ways. First, marketing teams can use these channels to distribute paid ads and sponsored content. Each platform has a way for marketing teams to create paid ad campaigns and segment users so these ads appear on the feeds of target audience members. While each platform is different, most have capabilities that allow marketing teams to place ads based on location, job title, interests, age, etc. Social media is also a great way to promote products or resources organically to your followers, and engage with consumers. Chances are, people that follow your brand on social media have likely purchased from you in the past. Interacting with them on social media or answering customer service-oriented questions is a great way to ensure continued engagement with the brand and cultivate positive experiences and customer loyalty.

- **Influencer marketing**

Another effective way to harness digital channels to reach target audiences is with influencer marketing. Brands can partner with celebrities, sites, or others that are considered experts in their field, that share similar values. Brands can then reach these influencers' followers with branded content and offers.

- **Email Marketing**

Email marketing campaigns allow organizations to stay connected with prospects and customers,

sending them customized newsletters or offers based on past shopping history or brand engagements. If an individual has interacted with a few of your branded touch points- like an email offer for 10 percent off the items they have been considering, or free shipping - that may be what ultimately brings about a conversion.

- **Content Marketing**

Content marketing allows marketing teams to be proactive in answering their users' questions. Marketing teams create content, videos, and other assets to answer questions or provide context to consumers throughout the three stages of the buyer's journey:

- i) The awareness stage: Buyer realizes they have a need
- ii) The consideration stage: Buyer determines a course of action to meet this need
- iii) The decision stage: Buyer decides on a product / service to purchase to meet the need

For example, a consumer might realize they need new shoes to wear to the gym. The marketing team for an active wear company may produce a piece about what features you need from a running shoe, as opposed to what you need if you focus on strength training. Looking at this content, the buyer determines they need a pair of running shoes that meets that criterion. Another piece of content might show the most popular running shoes and their price points. Once they are educated on these factors, they decide. The guidance offered by your brand throughout will likely result in them purchasing from you. Content marketing is often less expensive than other forms of marketing, while producing many leads.

- **Search Engine Optimization (SEO) Marketing**

Search engine optimization often goes hand in hand with content marketing. When the customer from the above example is conducting research for which gym shoes to buy, they will probably click on one of the first three results that appear on Google. With this in mind, the athletic shoes' marketing team wants to ensure their article appears in those top results. This is done by optimizing content for user experience and ensuring the technical elements are in place to enable search engine crawlers to easily find and index this content.

- **Pay-per-click (PPC)**

Pay-per-click is a form of paid advertising that allows marketing teams to essentially purchase traffic to their website. Marketers place ads on websites or search engines such as Google and Microsoft Bing, and pay a fee each time the ad is clicked on. These ads often appear at the top of the search results page, and are typically determined by bids on specific keywords, while banner ads on websites usually have set prices.

- **Affiliate Marketing**

Affiliate marketing is similar to referral programs; it involves working with outside individuals or companies under the agreement that they promote your product in exchange for a commission from each sale that can be attributed to their efforts. This is a way to cut down on costs and outsource some of the heavy lifting of promotion; however, you're putting your brand's reputation in someone else's hands, so this type of marketing often requires more extensive monitoring and tracking.

- **Mobile Marketing**

Mobile marketing initiatives can include many of the digital marketing strategies mentioned above, and typically will leverage a combination of text messages, social media, email, push notifications,

and mobile applications. The importance of mobile marketing is rising, as it is expected that by 2024, the number of mobile shoppers will rise to approximately 187.5 million users. With the clear move to mobile, marketers need to think about how they can optimize their current marketing efforts for mobile to be able to deliver a seamless and user-friendly experience.

(<https://www.marketingevolution.com/marketing-essentials/what-is-a-digital-marketing-platform-marketingevolution>)



THE END

COMPANY ACCOUNTS

PART - 1

UNDERWRITING

FAILURE TO OBTAIN MINIMUM SUBSCRIPTION:

If the company fails to obtain minimum subscription

Company should compulsorily return the money to applicants.

MEANING OF UNDERWRITING:

To avoid the risk of minimum subscription

Companies may seek help of underwriters

Underwriters are risk takers.

IMPORTANT TERMS IN THIS CHAPTERS:

- Underwriters
- Underwriting agreement
- Underwriting commission
- Marked applications
- Unmarked applications
- Firm underwriting
- Gross liability
- Net liability
- Total liability

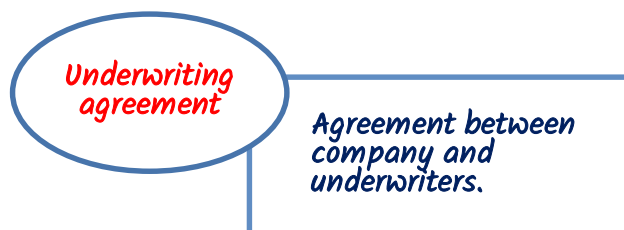
UNDERWRITERS

Underwriters

Risk takers

Who will subscribe the shares of company in case of under subscription.

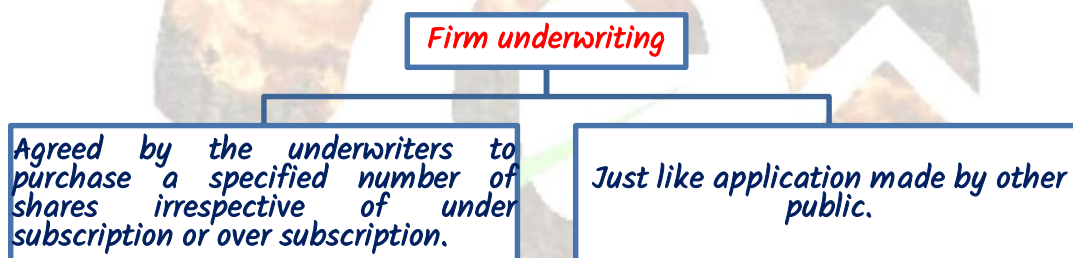
UNDERWRITING AGREEMENT:



CONCEPT CAPSULE:

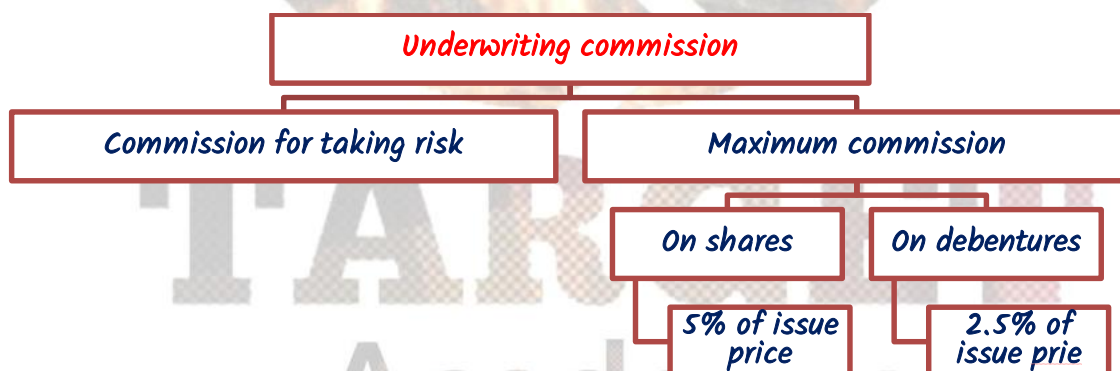
- RRR LTD enters into an underwriting agreement with RAM and Tarak. Ram guaranteed 50,000 shares Tarak guaranteed 30,000 shares.
- Ram suggested varun, Arjun, sai, vaishanav to purchase the shares of RRR Ltd. Tarak suggested Kalyan, Balu, mokshith to purchase shares of RRR Ltd.
- All of them purchased shares.

FIRM UNDERWRITING:

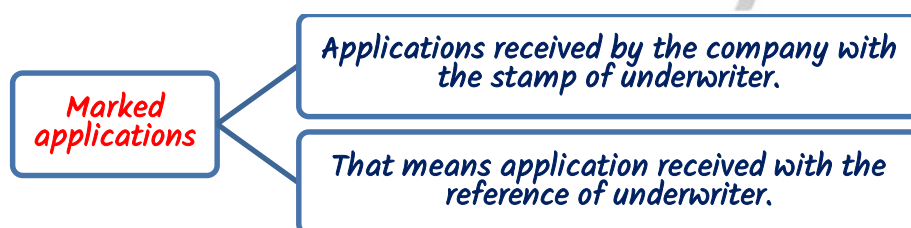


Continuing to the above example Ram is agreed to purchase 5,000 and Tarak is agreed for 3,000 shares irrespective of subscription by the public. (these 5,000 and 3,000 shares are called firm underwriting)

UNDERWRITING COMMISSION:



MARKED APPLICATIONS:



Applications made by varun, Arjun, sai, vaishanav reduces liability of Ram and applications made by varun, Arjun, sai, vaishanav reduces liability of Tarak. (marked applications)

UNMARKED APPLICATIONS:

- *Unmarked applications = Subscribed applications (excluding firm underwriting)– Marked applications*

GROSS LIABILITY:

- *It is the guaranteed number of shares given by underwriters.*
- *In our example gross liability of RAM is 50,000 shares and Tarak is 30,000 shares.*
- *Total liability = Net liability + Firm underwriting*

SPECIMEN OF CALCULATION OF LIABILITY OF UNDERWRITERS:

- *Statement showing liability of underwriters*

Particulars	RAM	TARAK	Total
Gross liability	50,000	30,000	80,000
Less: Firm underwriting	(5,000)	(2,000)	(7,000)
	45,000	28,000	73,000
Less: Marked applications	(15,000)	(10,000)	(25,000)
	30,000	18,000	48,000
Less: un Marked applications (in gross liability ratio)	(25,000)	(15,000)	(40,000)
Net liability	5,000	3,000	8,000
Add: Firm underwriting	5,000	2,000	7,000
Total liability	10,000	5,000	15,000

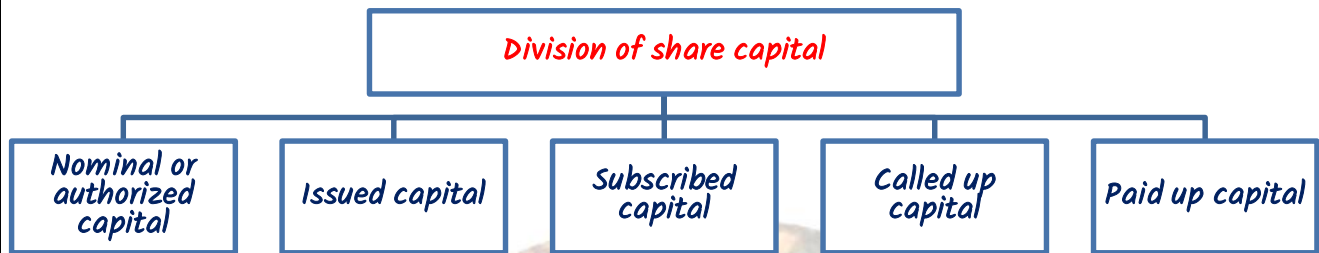
IMP NOTE POINTS WHILE SOLVING THE PROBLEM:

- *Commission is calculated on gross liability not on net liability/ total liability.*
- *While in calculation any underwriter gets surplus that surplus will be shared to other underwriters in gross liability ratio.*
- *Total liability = net liability + firm underwriting*

THE END

ISSUE OF SHARES

DIVISION OF SHARE CAPITAL



NOMINAL OR AUTHORIZED CAPITAL



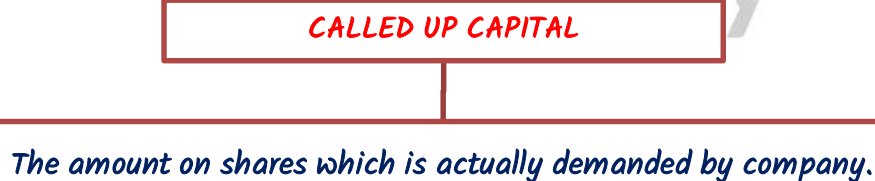
ISSUED CAPITAL



SUBSCRIBED CAPITAL



CALLED UP CAPITAL



PAID UP CAPITAL

PAID UP CAPITAL

Part of called up capital and which is actually paid.

- Note: Amount which is still to be paid is known as calls in arrears.

CONCEPT CAPSULE:

- RIL Ltd. Issued 11,000 shares of Rs.100 each.
- Public subscribed 10,000 shares of a company
- The company calls up Rs.50 per share but receives the payment from 9,000 subscribers. Calculate

Issued capital - $11,000 \times 100 = ₹ 11,00,000$

Subscribed capital - $10,000 \times 50 = ₹ 10,00,000$

Called up capital - $10,000 \times 50 = ₹ 5,00,000$

Paid up capital - $90,000 \times 50 = ₹ 4,50,000$

Calls in arrears - $(10,000 - 9000) \times 50 = ₹ 50,000$

Uncalled capital. - $(10,000 \times 50) = ₹ 5,00,000$

REFUND OF APPLICATION MONEY

If minimum number of shares are not subscribed.

Application money shall be repaid within a period of 15 days.

If not repaid directors & O.I.D shall jointly & severally be liable to repay that money with 15% interest.

Note:

- Application money shall not less than 5%p.a. or such amount specified by SEBI.

ISSUE OF SHARES AT PREMIUM

- A company may issue shares at a premium, i.e., at a value greater than its face value. The power to issue shares at a premium need not be given in the Articles of Association.

Premium so received shall be credited to a separate account called Securities Premium Account

PROHIBITION ON ISSUE OF SHARES AT DISCOUNT [SECTION 53]:

- NO SHARES CAN BE ISSUED AT A DISCOUNT

JOURNAL ENTRIES FOR ISSUE OF SHARES

- *On Receipt of Application Money*
 - *Bank A/c Dr.*
 - *To Share Application A/c*
- *For excess share application money refunded*
 - *Share Application A/c Dr.*
 - *To Bank A/c*
- *For Share application money transferred to share capital*
 - *Share Application A/c Dr.*
 - *To Share Capital A/c*
 - *To Securities Premium A/c (if application money includes premium)*
- *For Share allotment Money due :*
 - *Share Allotment A/c Dr.*
 - *To Share Capital A/c*
 - *To Securities Premium (if issued at a premium)*
- *For Share allotment money received :*
 - *Bank A/c Dr.*
 - *Calls-in-Arrear A/c Dr. (if allotment money not received)*
 - *To Share Allotment A/c*
 - *To Calls-in-Advance A/c (if call money received in advance along with allotment)*
- *For Share Call money due :*
 - *Share Call A/c Dr.*
 - *To Share Capital A/c*
- *For Call money received :*
 - *Bank A/c Dr.*
 - *Call-in-Arrear A/c Dr. (if call money not received)*
 - *Calls-in-Advance A/c Dr. (adjustment of share call money received earlier)*
 - *To Share Call A/c*
- *Payment Of Arrears Along With Interest(If Any)*
 - *Bank A/C Dr*

- To share final call A/C
- To calls in arrears A
- To interest A/C

ISSUE OF SHARES FOR PURCHASE OF ASSETS

- Issue of Shares for Purchase of Assets:
- Asset Account Dr.

To Share Capital Account

APPLICATIONS OF SECURITIES PREMIUM

APPLICATIONS OF S.P

issue of fully
paid bonus
shares

writing off
preliminary
expenses

writing off the
commission
paid or discount
allowed on any
issue of shares
or debentures.

premium
payable on the
redemption of
any preference
shares or
debentures.

Buy-Back of
shares

CONCEPT CAPSULE:

P.K Ltd made an issue of 10,00,000 equity shares of ₹10 each payable. ₹2 an application, ₹ 4 on allotment & ₹ 4 on cal. All shares are subscribed & amount duly received. Pass journal entries.

Solution:

Journal entries

Particulars		₹ '000	₹ '000
Bank A/c To Share Application A/c (being share application money received)	Dr.	20,00,000	20,00,000
Share Application A/c To Equity Share Capital A/c (being Share application money transferred to share capital account)	Dr.	20,00,000	20,00,000
Share Allotment A/c To Share Capital A/c (being Share Allotment due)	Dr.	40,00,000	40,00,000
Bank A/c To Share Allotment A/c (being share Allotment money received)	Dr.	40,00,000	40,00,000

Share Call A/c To Share Capital A/c (being Share Calls money was due)	Dr.	40,00,000	40,00,000
Bank A/c To Share Call A/c (being Call money received)	Dr.	40,00,000	40,00,000



THE END

RIGHTS ISSUE

Rights issue

Issue of shares to existing shareholders at lesser cost than market price.

- Company is giving right to existing shareholders

Share holder has 3 choices

They may accept the right

They may reject it

They May transfer such right.

ADVANTAGE TO THE SHARE HOLDER:

Advantage to the share holder

They will get profit (by buying shares at lesser price and selling at market price(higher)

IMPORTANT FORMULAE IN EXAM POINT OF VIEW:

- Value of right = market value – Theoretical market value (T.M.V).
- $T.M.V = \frac{(\text{No. of shares} \times \text{market price}) + \text{Amount to be paid}}{\text{Total number of shares after right issue}}$
- Percentage of increase in share capital = $\frac{\text{New capital} - \text{old capital}}{\text{old capital}} \times 100$

CONCEPT CAPSULE:

A company is planning to raise funds by making rights issue of equity shares to finance its expansion. The existing share capital of the company is ₹ 50,00,000. The M.V of its share is Rs.42/-. The company offers to its shareholders the rights to buy '2' shares @ ₹11 each for every 5 share held. Then calculate

- Theoretical market value
- Value of rights
- %increase in share capital

- Theoretical market value:

$$T.M.V = \frac{[\text{No. of shares} \times \text{M.P}] + [\text{amt to be paid}]}{\text{Total no.of shares}}$$

$$= \frac{[5 \times 42] + [2 \times 11]}{5+2}$$

$$T.M.V = ₹33.14/-$$

ii. Value of rights

$$\begin{aligned} V.O.R &= M.V - T.M.V \\ &= 42 - 33.14 \\ &= 8.86/- \end{aligned}$$

iii. %increase in share capital

$$\begin{aligned} \text{Old} &= 50L ; \text{ new} = \left[50L + \left[\frac{50L}{5} \times 2 \right] \right] \\ &= 50L + 20L \\ &= 70L \\ \% \text{ increase in S.C} &= \frac{\text{New} - \text{old}}{\text{Old}} \times 100 \\ &= \frac{70 - 50}{50} \times 100 \\ &= \frac{20}{50} \times 100 \\ &= 40\% \end{aligned}$$

IMPORTANT CONCEPT FOR BETTER UNDERSTANDING OF THIS CHAPTER (NOT IMPORTANT FOR EXAM)

Share price will definitely reduce after right issue

PROOF:

Before right issue M.P = ₹42

After right issue M.P = ₹33.14

If share holder choose rejection option

The S.H's may suffer with 'loss'

Example: in above example share holders shares

Solution: before right issue = 5 shares x ₹42 = 210.0

After right issue = 5 shares x ₹33.14 = 165.7

Loss of → 44.3

THE END

BONUS ISSUE

✗ Bonus issue is nothing but capitalisation of profits.

Capitalisation of profits

Process of converting profits or reserves into paid up capital.

Bonus shares

It is free share issued without any consideration to an existing shareholder in the ratio of number of shares held by that shareholder.

Issue of Bonus shares

Decreases the Reserve & Surplus

Increases the issued capital

Note: issue of bonus shares does not effect cash flow.

WAY TO ISSUE BONUS ISSUE:

*Way to
issue
bonus
issue*

by issuing fully paid bonus shares to the existing members

by paying up amounts unpaid on existing partly paid shares so as to make them fully paid up shares.

SOURCES OF BONUS ISSUE:

Sources of bonus issue

Free reserves

Securities premium

C.R.R

POINTS TO BE REMEMBERED WHILE SOLVING THE QUESTION:

➤ Securities premium received in cash only be utilised for bonus issue.

- Capital reserves which are realised in cash only be utilised for bonus issue.
- Securities premium and CRR can not be used for issue of bonus share in the form of converting partly paid up shares to fully paid up shares.
- NO issue of bonus shares shall be made by using revaluation reserve.

JOURNAL ENTRIES FOR ISSUE OF FULLY PAID UP BONUS SHARES

- On declaration of such bonus shares

CRR A/c		Dr
Securities premium	A/c	
Capital reserve	A/c	
P& L	A/c	Dr
To Bonus to shareholders A/c		

ON ISSUE OF BONUS SHARES:

Bonus to shareholders	A/c	Dr
To Shareholders	A/c	

JOURNAL ENTRIES FOR FOR CONVERTING PARTLY PAID UP TO FULLY PAID UP

- On declaration of such bonus shares

CRR	A/c	Dr
Securities premium	A/c	
Capital reserve	A/c	
P& L	A/c	Dr
To Bonus to share holders	A/c	
- On making call due

Share call	A/c	Dr
To Share capital	A/c	
- On adjustment of call

Bonus to share holder	A/c	Dr
To share call	A/c	

CONCEPT CAPSULE:

Following is the extract of the Balance Sheet of YY Ltd. as at 31st March, 2015:

	₹
Authorised Capital	
15,000 12% Preference shares of ₹ 10 each	1,50,000
1,50,000 Equity shares of ₹ 10 each	15,00,000
	16,50,000
Issued and Subscribed Capital:	
12,000 12% Preference Shares of ₹10 each fully paid	1,20,000
1,35,000 Equity shares of ₹ 10 each, ₹ 8 paid up	10,80,000
Reserves and Surplus:	
Capital Redemption Reserve	30,000
General Reserve	1,80,000
Capital Reserve	1,12,500

Securities Premium	37,500
Profit and Loss Account	2,70,000
Secured Loans:	
12% Partly Convertible Debentures @ ₹ 100 each	7,50,000

On 1st April, 2015 the Company has made final call @ 2 each on 1,35,000 equity shares. The call money was received by 20th April, 2015. Thereafter the company decided to capitalise its reserves by way of bonus at the rate of one share for every four shares held. Securities premium of ₹ 37,500 includes a premium of ₹ 7,500 for shares issued to vendors pursuant to a scheme of amalgamation. Capital reserves include ₹ 60,000, being profit on sales of plant and machinery. 20% of 12% Debentures are convertible into equity shares of ₹ 10 each fully paid on 1st June 2015.

Required: Show necessary entries in the books of the company.

SOLUTION:

Journal of Y Y Ltd.

Date	Particulars	LF.	Dr. (₹)	Cr. (₹)
April 1	Equity Share Final Call A/c Dr. To Equity Share Capital A/c (Being the Final call of ₹ 2 per share on 1,35,000 equity shares due as per Board's Resolution dated...)		2,70,000	2,70,000
April 20	Bank A/c Dr. To Equity Share Final Call A/c (Being the Final Call money on 1,35,000 equity shares received)		2,70,000	2,70,000
	Capital Redemption Reserve A/c Dr. Capital Reserve A/c [Realized in cash] Dr. Securities Premium A/c [37,500 - 7,500] Dr. General Reserve A/c Dr. Profit and Loss A/c Dr. To Bonus to Shareholders A/c (Being the Bonus issue @ one share for every four shares held by utilising various reserves as per Board's Resolution dated...)		30,000 60,000 30,000 1,80,000 37,500	3,37,500
April 20	Bonus to Shareholders A/c Dr. To Equity Share Capital A/c (Being the Capitalisation of profits to issue 33,750 equity shares of ₹ 10 each, fully paid.)		3,37,500	3,37,500

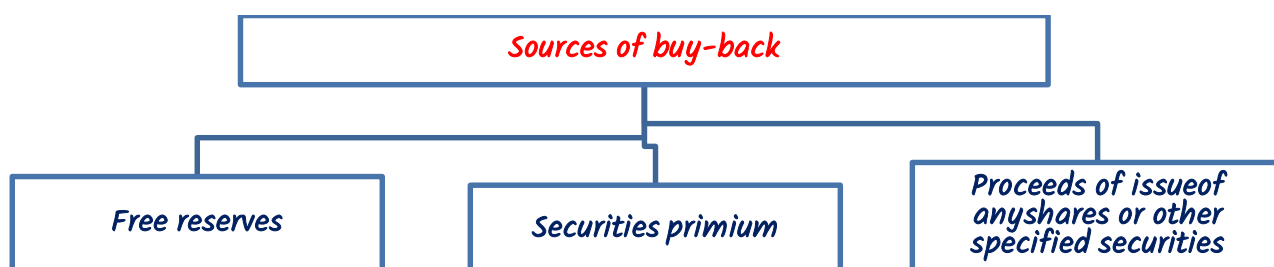
Working Notes:

- Capital Reserve realised in cash can be utilised for issue of fully paid bonus shares.
- As per SEBI guidelines, securities premium collected in cash can only be utilised for bonus issue.
- As per para (ii) of SEBI guidelines, no-company can issue bonus shares to its shareholders without extending similar benefit to convertible debentures holders. Pending such conversion, necessary number of shares should be earmarked for convertible debentures holders. Therefore, convertible debenture holders are also entitled to the bonus shares in the same ratio as the equity shareholders.
- It is assumed that the company will pass necessary resolution at its general body meeting for increasing the authorised capital by ₹ 2,50,000.

Issue of Bonus Shares to equity shareholders $[22,500 \times 10]$	2,25,000
Issue of Bonus Shares to be issued to Debenture holders after conversion	25,000
$[(20\% \text{ of } 5,00,000) / 10] \times 1/4 \times 10$	2,50,000

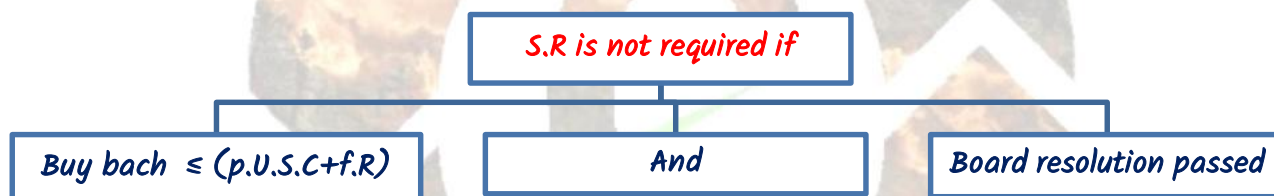
THE END

BUY-BACK OF SHARES



POINTS TO BE REMEMBERED:

1. NO BUY-BACK of shares or other securities shall be made out of the proceeds of earlier issues of same kind of shares or other specified securities.
2. Buy back should be authorised by articles.
3. S.R (special resolution) required.
4. S.R is not required if



5. Buy back shall not exceed 25% of P.U.S.C and F.R
6. All the shares or other securities for buy back are fully paid up
7. Every buy-back shall be completed within a period of one year from the date of special resolution



ACCOUNTING FOR BUY- BACK OF SHARES

1. Shares held for buy -back of shares

i) If buy back at par

a) Share capital A/C	Dr	}	Share capital Dr
To equity share holder A/C			TO Bank A/C
b) Equity shareholders A/C	Dr	}	
TO Bank A/C			
c) Reserves A/ C	Dr		
P&L A/C	Dr		
TO C.R.R A/C			

ii) If buy back at premium

a) Share capital A/C	Dr	}	Share capital A/C	Dr
Premium on buy bank A/C	Dr		Premium A/C	Dr
TO Share holders A/C			TO Bank A/C	
b) Share holders A/C	Dr			
TO Bank A/C				

10. Buy back of shares is just opposite of issue of shares

11.



SEC-E9:

When a company purchases its own shares out of free reserves then sum equals to nominal value of shares purchased shall be transferred to CRR A/C

ADJUSTMENT OF PREMIUM ON BUY -BACK

Premium on buy-back will be adjusted from S.P&G.R

Adjustment of premium

Securities premium A/C	Dr
General reserve A/C	Dr
TO Premium on buy-back A/C	

iii) if buy-back at discount

a) Share capital A/C	Dr
TO Shareholders A/C	
TO Capital reserve A/C	

(Remaining entries same as at par)

CONCEPT CAPSULE:

The share capital of Beta Co. Ltd consists of 1,00,000 equity shares of ₹ 10 each, and 25,000 preference shares of ₹ 100 each, fully called up. Its securities premium account shows a balance of ₹ 40,000 and general reserve of 7,00,000. The company decides to buy-back 20,000 equity shares of ₹ 12 each

SOLUTION:

*In the Books of Beta Co. Ltd.
Journal Entries*

Date	Particulars	Debit ₹	Credit ₹
	<i>Equity Share Capital A/c Dr.</i> <i>premium on buy back A/c Dr.</i> <i>To Equity Shareholders A/c</i> <i>(Amount due to equity shareholders for buying-back of 20,000 equity shares)</i>	2,00,000 40,000	2,40,000
	<i>Equity Shareholders A/c Dr.</i> <i>To Bank A/c</i> <i>(Payment to shareholders on account of buy-back)</i>	2,40,000 2,00,000	2,40,000
	<i>General Reserve A/c Dr.</i> <i>To Capital Redemption Reserve A/c</i> <i>(Transfer of nominal amount of equity shares Bought back.)</i>		2,00,000
	<i>Securities premium account Dr.</i> <i>To premium on buy back</i> <i>(being adjustment of premium)</i>	40,000	40,000

TARGET
Academy

THE END

FORFEITURE OF SHARES

Means : cancellation of shares

When: Shareholders fails to pay call money

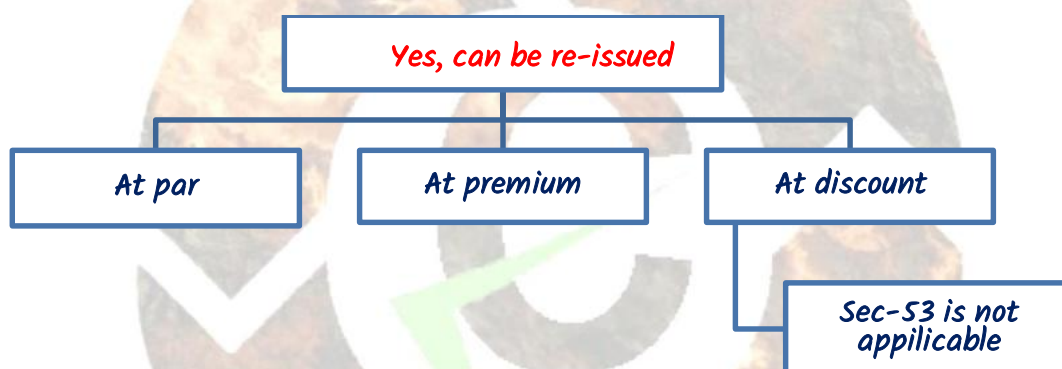
Effect: After forfeiture shareholders ceases to be a member\ shareholder

SURRENDER OF SHARES

Shareholder voluntarily returns shares to company (when he is unable to pay call amount)

NOTE : Accounting treatment of shareholder of shares is same as accounting treatment of forfeiture of shares

CAN COMPANY RE-ISSUE OF FORFEITED SHARES ?



NOTE POINT FOR RE-ISSUE OF FORFEITED SHARES AT DISCOUNT

- *There is no restriction on issue at discount*
- *But such discount shall not exceed amount received from original shareholders*

CONCEPT CAPSULE:

BAHUBALI Ltd issued shares to public. PRABHAS and RANA are two shareholders. RANA filed to pay final call money of Rs.4 and issue price is Rs.10

NOW , BAHUBALI Ltd forfeited the shares of RANA and BAHUBALI Ltd decided to re-issue those forfeited shares to Mr. RAJAMOULI at discount

SOLUTION:

Yes , BAHUBALI Ltd can re-issued such shares to RAJAMOULI at discount . But such discount is shall not exceed Rs.6 (Which was paid by RANA)

JOURNAL ENTRIES

FOR Forfeiture of shares :

1. Share capital	A/C	Dr	(Number of shares x called up)
Securities premium	A/C	Dr	(If issued at premium and security premium received)

TO Calls in arrears A/C (Amount not received)
TO Shares Forfeited A/C (Amt Received)

2. Re-issue of forfeiture shares

AT Par :

Bank A/C Dr
 TO Share capital A/C

AT Premium :

Bank A/C Dr
 TO Share capital A/C
 TO Securities premium A/C

AT Discount :

Bank A/C Dr
 Shares forfeited A/C Dr
 TO Share capital A/C

(DO You know the reason why you debited shares forfeited A/C)

Amount to be transferred to capital to capital reserve .

Total portion of forfeited shares	XXXX
(-) Further discount on re-issue	XXXX
	XXXX

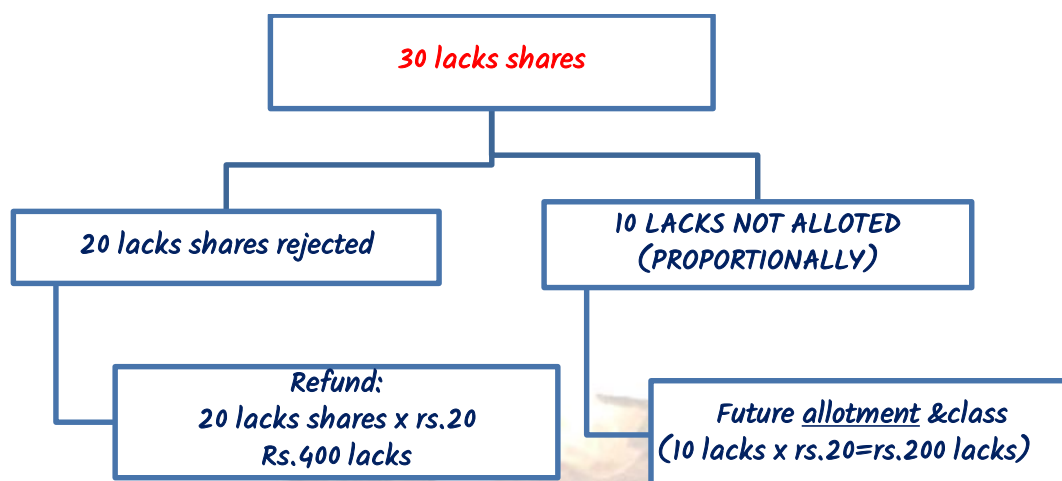
CONCEPT CAPSULE:(illustration number 19 in board material)

Schedule of receipt

On application = Rs.20
On allotment = Rs.40 (30 + 10)
On 1st call = Rs.30
On final call = Rs.20

Rs.110

NO Of shares issued = 100 lacks shares
Applications received from public = 130 lacks shares
Excess applications received 30 lacks



JOURNAL ENTRIES

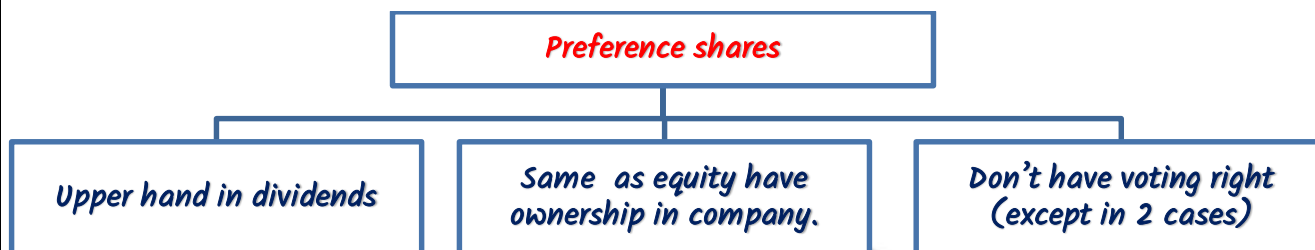
1. Bank A/C Dr 2600 lacks
TO Share application A/C 2600 Lacks
2. Share application A/C Dr 400 lacks
TO Bank (200 lacks x 20) A/C 400 Lacks
3. Equity share application A/C Dr (2600 - 400) 2200 Lacks
TO share capital A/C 2000 Lacks
TO Share allotment A/C 200 Lacks
4. Share allotment A/C Dr 4000 lacks
TO Share capital A/C 3000 Lacks
TO Securities premium A/C 1000 lacks
5. Bank A/C Dr (4000-200) 3800 lacks
TO Share allotment A/C 3800 Lacks
6. Share 1st call A/C Dr (100L X 30) 3000 Lacks
TO Share capital A/C 3000 Lacks

7. Bank	A/C	Dr	3000 lacks	
TO Share 1 st call	A/C		3000 Lacks	
8. Share final call	A/C	Dr	2000 lacks	
TO Share capital	A/C		2000 Lacks (100L X 20)	
9. Bank (100L – 3L)X20	A/C	Dr	1940 lacks	
Calls in arrears (3L X 20)	A/C	Dr	60 lacks	
TO Share final	A/C		2000 Lacks	
10. Equity share capital (3L X 100)	A/C	Dr	300 Lacks	
Securities premium (3L X 10)	A/C	Dr	30 Lacks	
TO Calls in arrears (3L X 20)	A/C		60 Lacks	
TO Forfeited shares (3L X 90)	A/C		270 Lacks	
11. <u>Re-issue at Rs.85</u>				
Bank (2L X 85)	A/C	Dr	170 Lacks	
Forfeited shares (2L X 15)	A/C	Dr	30 Lacks	
TO Share capital	A/C		200 Lacks	
12. <u>Balance in forfeited shares transfer to capital reserve</u>				
Forfeited shares (270L – 30 L) = 240L	A/C	Dr	240 Lacks	
TO Capital reserve	A/C		240 Lacks	

THE END

ISSUE AND REDEMPTION OF PREFERENCE SHARE

PREFERENCE SHARE



TYPES OF PREFERENCE SHARE

TYPES OF PREFERENCE SHARES

Redeemable preference shares

Irredeemable preference shares

REDEEMABLE PREFERENCE SHARE

Redeemable preference shares

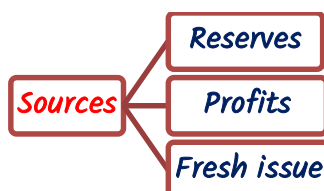
Shares will be redeemed after a specified period.

IRREDEEMABLE PREFERENCE SHARES

Irredeemable preference shares

Shares will not be redeemed (except in winding up).

SOURCES FOR REDEMPTION OF PREFERENCE SHARES



1. Same as buy back of shares.
2. To the extent of nominal value of preference shares redeemed should be transferred to CRR.
3. Point no:2 is not applicable for fresh issue portion.

ALLOWED RESERVES TO TRANSFER TO CRR

1. General reserve
2. Reserve fund
3. Dividend equalisation fund
4. Insurance fund
5. Workmen's accident fund
6. Workmen's compensation fund
7. DRR
8. Debenture sinking fund
9. P & L A/c

NOT ALLOWED RESERVES TO TRANSFER TO CRR

1. Securities premium account
2. Forfeited shares account
3. Profit prior to incorporation
4. Capital reserve
5. Development rebate reserve (***)
6. Investment allowance reserve

IMPORTANT NOTE FOR EXAM POINT OF VIEW: As per companies Act, 2013, company can not use development rebate reserve for redemption of preference shares. But if question specifies particularly that company uses development rebate reserve then we have to consider development revaluation reserve also.

JOURNAL ENTRIES

REDEMPTION AT PAR

1. Redeemable preference share capital A/c	Dr
To Redeemable preference shareholders A/c	
2. Redeemable preference shareholders A/c	Dr
To bank A/c	
3. Reserves A/c	Dr.

P&L A/c

Dr.

To CRR A/c

REDEMPTION AT PREMIUM

1. Redeemable preference share capital A/c

Dr.

Premium on redemption A/c

Dr.

To Redeemable preference shareholders A/c

2. Redeemable preference shareholders A/c

Dr.

To bank A/c

3. Reserves A/c

Dr.

P&L A/c

Dr.

To CRR A/c

4. Securities premium A/c

Dr

P&L A/c

Dr

To premium on redemption A/c

CONCEPT CAPSULE:

T Ltd. furnishes you with the following Balance Sheet as at 31st March, 2015 : (₹ in Lakhs)

Equity shares of ₹ 10 each fully paid	400	
12% redeemable preference shares of ₹ 100 each fully paid	200	
Reserves and surplus:		
Capital reserve	15	
Share Premium	25	
Revenue reserves	260	300
Funds Employed in :		900
Fixed assets less depreciation		560
Current assets	540	
Less : Current liabilities	200	340
		900

The company redeemed preference shares on 1st April 2015 at a premium of 10%. You are required to pass journal entries to record the above.

SOLUTION:

Journal entries in the books of T Ltd

Particulars	DR	CR
1. 12% preference share capital A/C	200	
Premium on redemption of preference share A/C	20	
To preference shareholders A/C		220
2. Preference share A/C Dr	220	
To bank A/C		220
3. Securities premium A/C Dr	20	

To Premium on redemption of preference share A/C			20
4. Revenue reserve	A/C	Dr	200
To CRR A/C			200



THE END

CASHFLOW STATEMENT (AS-3)

Proforma of Cash Flow Statement under Direct Method

Cash Flow Statement _____ of _____ for the period ended _____

Particulars	₹	₹	₹
A. Cash Flows from Operating Activities:			
Cash receipts from Customers		-	
Less: Cash paid to Suppliers and Employees		-	
Cash Generated from Operation		-	
Less: Income Tax Paid		-	
Cash Flows from Operation before Extraordinary Items		-	
Add: Proceeds from any Disaster Settlement		-	
Net Cash Flow from Operating Activities			-
B. Cash Flows from Investing Activities:			
Proceeds from Sale of Fixed assets including Investments		-	
Less: Purchase of Fixed assets including Investments		-	
Add: Interest Received		-	
Dividends Received		-	
Net Cash Flow from Investing Activities			-
C. Cash Flows from Financing Activities:			
Proceeds from issuance of share capital		-	
Proceeds from Long-term Borrowings		-	
Less: Repayment of Long-term Borrowings including Redemption of Preference Shares		-	
Less: Interest Paid	-		
Dividend Paid	-	-	
Net Cash Flow from Financing Activity			-
Net Increase in Cash and cash Equivalents			-
Add: Cash and Cash Equivalents at the beginning of the period			-
Cash and Cash Equivalents at the end of the period			-

INDIRECT METHOD:

Proforma of Cash Flow Statement under Indirect Method

Cash Flow Statement _____ of for the period ended _____

Particulars	₹	₹	₹
A. Cash Flows from Operating Activities:			
Net Profit for the Period before Taxation & Extraordinary Items		-	
Add: Adjustment for Non-current and Non-operating Items charged to Profit & Loss A/c	-		
Depreciation	-		
Interest paid	-		
Foreign Exchange Loss	-		
Loss on Sale of Fixed Assets & Investments	-	-	
Less: Adjustment for Non-current and Non-operating Items Charged to Profit & Loss A/c	-		
Interest Earned	-		
Dividend Earned	-		
Profit on Sale of Fixed Assets & Investments	-		
Operating Profit before	-		
Working Capital Changes	-	-	
Add: Increase in Current Liabilities	-	-	
Decrease in Current Assets	-		
Less: Increase in Operating Current Assets	-		
Decrease in Operating Current Liabilities	-		
Cash Generated from Operation	-	-	
		-	
Less: Income Tax Paid		-	
Add: Proceeds from any Disaster Settlement		-	
Net Cash Flow from Operating Activities			-
B. Cash Flows from Investing Activities:			
Proceeds from Sale Fixed assets including Investments		-	
Less: Purchase from Sale Fixed assets including Investments		-	
		-	

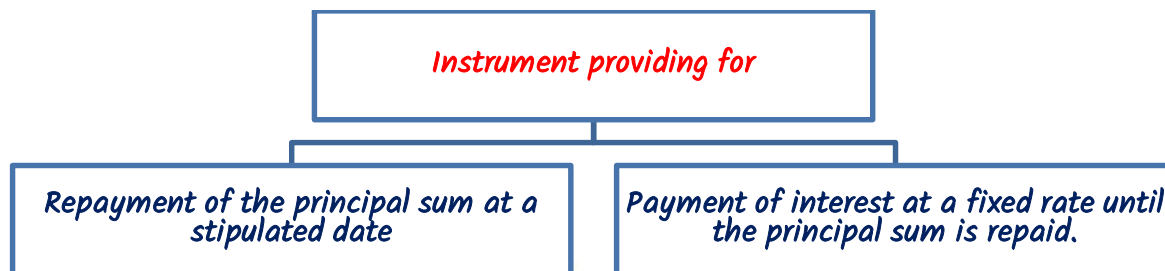
Add:	<i>Interest Received</i>		-	
	<i>Dividends Received</i>		-	
	<i>Net Cash Flow from Investing Activities</i>			-
C.	<i>Cash Flows from Financing Activities:</i>			
	<i>Proceeds from issuance of Share Capital</i>		-	
	<i>Proceeds from Long-term Borrowings</i>		-	
			-	
Less:	<i>Repayment of Long-term Borrowings including Redemption of Preference Shares</i>		-	
			-	
Less :	<i>Interest Paid</i>	-		
	<i>Dividend Paid</i>	-	-	
	<i>Net Cash Flow from Financing Activity</i>			--
	<i>Net Increase in Cash and cash Equivalents</i>			--
Add :	<i>Cash and Cash Equivalents at the beginning of the period</i>			--
	<i>Cash and Cash Equivalents at the end of the period</i>			--

TARGET
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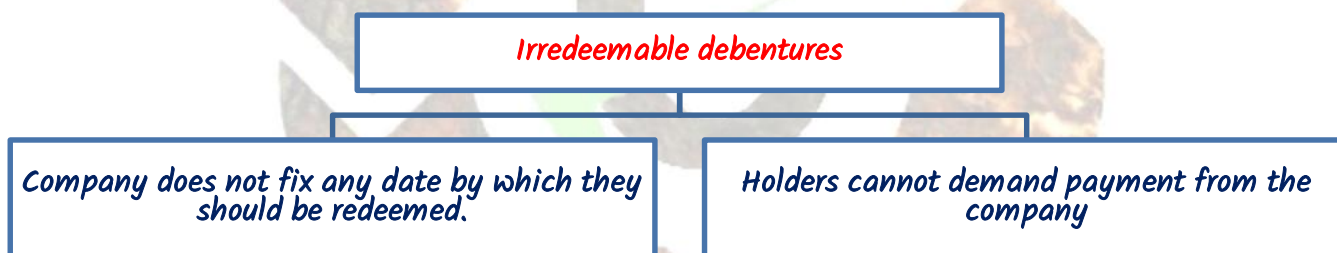
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ISSUE AND REDEMPTION OF DEBENTURES

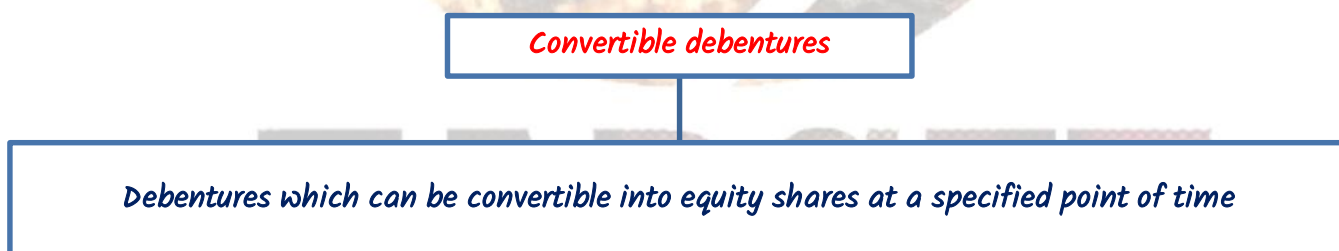
Debentures is an acknowledgement of debt issued under common seal of the company.



TYPES OF DEBENTURES:



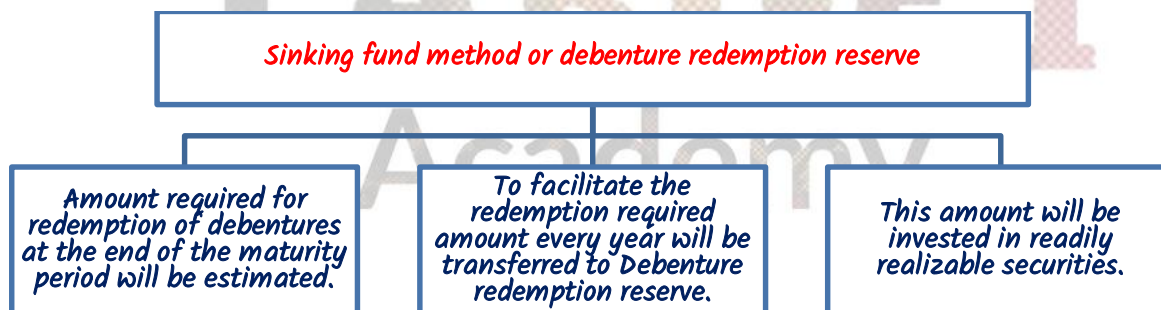
CONVERTIBLE DEBENTURES:



Journal Entries for the Issue Debentures

NO	PARTICULARS	LF	DEBIT	CREDIT
1	Issue at par and redeemable at par: Bank A/c Dr To Debentures A/c		XX	XX
2	Issue at discount and redeemable at par: Bank A/c Dr Discount on issue of debentures A/c Dr To Debentures A/c		XX XX	XX
3	Issue at premium and redeemable at par: Bank A/c Dr To Debentures A/c To Securities Premium A/c		XX	XX XX
4	Issue at par and redeemable at premium: Bank A/c Dr Loss on issue of debentures A/c Dr To Debentures A/c To Premium on redemption of debentures A/c		XX XX	XX XX
5	Issue at discount and redemption at premium: Bank A/c Dr Discount on issue of debentures A/c Dr Loss on issue of debentures A/c Dr To Debentures A/c To Premium on redemption on debentures		XX XX XX	XX XX
6	Issue of debentures at premium and redemption at premium: Bank A/c Dr Loss on Issue of debentures A/c Dr To Debentures A/c To Security Premium A/c To Premium on redemption of debentures A/c		XX XX	XX XX XX

SINKING FUND METHOD:



Journal Entries for the Issue Debenture

NO	PARTICULARS	LF	DEBIT	CREDIT
1st year	Transfer of Profit to Debentures Redemption Reserve: Profit and Loss A/c Dr To Debentures Redemption Reserve A/c		XX	

				XX
	For Acquiring DRR Investments: DRF Investments/c To Bank A/c	Dr	XX	XX
2nd to Last year	For Receipt of Interest on DFR Investments: Bank A/c To Interest A/c	Dr	XX	XX
	For transferring Interest to DRR A/c: Interest A/c To DRR A/c	Dr	XX	XX
	Transfer of Profit to Debentures Redemption Reserve: Profit and Loss A/c To Debentures Redemption Reserve A/c	Dr	XX	XX
	For Acquiring DRR Investments (Transfer + Interest) DRF Investments/c To Bank A/c	Dr	XX	XX
Last year	Sale of DRF Investments at Profit: Bank A/c To DRF Investments A/c To Debentures Redemption Reserve A/c	Dr	XX	XX XX
	Sale of DFR Investments at Loss: Bank A/c DRR A/c To DRF Investments A/c	Dr Dr	XX XX	XX
	Total Amount Due to Debenture holders: Debentures A/c Premium on redemption of debentures A/c To Debenture holder's A/c	Dr Dr	XX XX	XX
	Redemption of debentures: Debenture holders A/c To Bank A/c	Dr	XX	XX
	Transfer of balance in DRR to General Reserve: DRR A/c To General Reserve A/c	Dr	XX	XX

PURCHASE OF OWN DEBENTURES:

1. Profit or loss on cancellation of debentures should be transfer to sinking fund account.
2. A company can re - issue their own debentures which were earlier purchased by the company.
3. Profit or loss on re - issue of own debentures should be transfer to profit and loss account.
4. Interest on own debentures shall be transfer to sinking fund account.

Journal Entries

NO	PARTICULARS	DEBIT	CREDIT
1	For Purchase of own Debenture: Own Debentures Dr To Bank A/c	XX	XX
2	For Cancellation of own debentures: Debentures A/c Dr To Own Debentures A/c	XX	XX
3	Profit on cancellation: Own Debentures A/c Dr To Sinking Fund A/c	XX	XX
4	Loss on cancellation: Sinking Fund A/c Dr To Own Debentures A/c	XX	XX
5	Reissue (or sale) of own debentures: Bank A/c Dr To Own Debentures A/c	XX	XX
6	Profit on re-issue: Own Debentures A/c Dr To Profit and Loss A/c	XX	XX
7	Loss on re-issue: Profit and Loss A/c Dr To Own Debentures A/c	XX	XX
8	Interest on own debentures: Profit and Loss A/c Dr To Sinking Fund A/c	XX	XX

CONCEPT CAPSULE:

Give the necessary Journal Entries both at the time of issue and redemption of Debentures in each of the following alternative cases:

- i. AP Ltd. issued 1,000 nos. 10% Debentures of ₹100 each at par and redeemable at par at the end of 4 years.

- ii. AZ Ltd. issued 10% Debentures of the total face value of ₹1,00,000 at a premium of 5% to be redeemed at par at the end of 4 years.
- iii. AK Ltd. issued 1,000, 14% Debentures of ₹100 each at par, but redeemable at a premium of 5% at the end of 4 years.

SOLUTION:

Case (a): Journal Entries In the book of AP Ltd:

NO	PARTICULARS	LF	DEBIT	CREDIT
1	At time of Issue: Bank A/c (1,000 deb x 100) Dr To 10% debentures A/c (Being the issue of Debentures at par)		1,00,000	1,00,000
2	At the time of Redemption: Profit and loss Appropriation A/c Dr To Debentures Redemption Reserve A/c (Being the transfer of an amount equivalent to the nominal value of Debentures redeemed to Debenture Redemption Reserve A/c out of profit)		1,00,000	1,00,000
3	10% Debentures A/c Dr To Debenture holders A/c (Being the amount due on redemption)		1,00,000	1,00,000
4	Debenture holders A/c Dr To Bank A/c (Being the payment made to deb. holders)		1,00,000	1,00,000

Case (b): journal Entries in the books of AZ Ltd,

DATE	PARTICULARS	LF	DEBIT	CREDIT
	On date of Issue: Bank A/c (1,00,000x105%) Dr To 10% debentures A/c To Securities Premium A/c (Being the issue of Debentures at 5% premium)		1,05,000	1,00,000 5,000
	On date of Redemption: Profit and loss Appropriation A/c Dr To Debentures Redemption Reserve A/c (Being the transfer of an amount equivalent to the nominal value of Debentures redeemed to Debenture Redemption Reserve A/c out of profit)		1,00,000	1,00,000
	10% Debentures A/c Dr To Debenture holders A/c (Being the amount due on redemption)		1,00,000	1,00,000

	Debenture holders A/c To Bank A/c (Being the payment made to debenture holders)	Dr		1,00,000	1,00,000

Case (C): Journal Entries in the books of AKLtd:

DATE	PARTICULARS	LF	DEBIT	CREDIT
	On the date of Issue: Bank A/c Loss on Issue of Deb. A/c To 14% debentures A/c To Premium on Redemption of Debentures A/c (1,00,000 x 5%) (Being the issue of Debentures at par and redeemable at 5% premium)	Dr Dr	1,00,000 5,000	1,00,000 5,000
	On Redemption: Profit and loss Appropriation A/c To Debentures Redemption Reserve A/c (Being the transfer of an amount equivalent to the nominal value of Debentures redeemed to Debentures redeemed to Deb. Redemption res. A/c)	Dr	1,00,000	1,00,000
	14% Debentures A/c Premium on Redemption of Debentures A/c To Debenture holders A/c (Being the amount due on redemption]	Dr Dr	1,00,000 5,000	1,00,000
	Debenture holders A/c To Bank A/c (Being the payment made to debenture holders)	Dr	1,00,000	1,00,000

THE END

SCHEDULE - III

Name of the Company:

Profit and Loss Statement for the year ended:..... (in.....)

	Particulars	Not e No.	Figures for the Current Reporting Period	Figures for the Previous Reporting Period
I	Revenue from Operations		XXX	XXX
II	Other Income		XXX	XXX
III	Total Revenue (I+II)		XXX	XXX
IV	Expenses: Cost of Materials Consumed Purchases of Stock-In-Trade Changes in Inventories of Finished Goods / Work- in-progress and Stock-In-Trade Employee Benefits Expense Finance Costs Depreciation and Amortization Expense Other Expenses		XXX XXX XXX	XXX XXX XXX
	Total Expenses		XXX	XXX
V	Profit before Exceptional & Extraordinary Items and Tax(III – IV)		XXX	XXX
VI	Exceptional Items		XXX	XXX
VII	Profit before Extraordinary Items and TAX (V- VI)		XXX	XXX
VIII	Extraordinary Items		XXX	XXX
IX	Profit before Tax (VII-VIII)		XXX	XXX
X	Tax Expenses: (1) Current Tax (2) Deferred Tax		XXX XXX	XXX XXX
XI	Profit /(Loss) for the period from Continuing Operations(IX – X)		XXX	XXX
XII	Profit /(Loss) from Discontinuing Operations		XXX	XXX
XIII	Tax Expense of Discontinuing Operations		XXX	XXX
XIV	Profit /(Loss) from Discontinuing Operations (After Tax) (XII-XIII)		XXX	XXX
XV	Profit / (Loss) for the period (XI + XIV)		XXX	XXX
XVI	Earnings per Equity Share: (1) Basic (2) Diluted		XXX	XXX

Name of the Company:.....

Balance Sheet as at:

(in.....)

	Particulars	Note	Figures as at the end of Current Reporting Period	Figures as at the end of the Previous Reporting Period
I.	EQUITY AND LIABILITIES			
(1)	Shareholders' Funds			
	(a) Share Capital			
	(b) Reserves & Surplus			
(2)	(c) Money Received against Share			
(3)	Warrants Share Application money pending allotment Non-Current Liabilities			
	(a) Long Term Borrowings			
	(b) DTL (Net)			
	(c) Other Long Term Liabilities			
	(d) Long Term Provisions			
(4)	Current Liabilities			
	(a) Short Term Borrowings			
	(b) Trade Payables			
	(c) Other Current Liabilities			
	(d) Short Term Provisions			
II.	Total			
	ASSETS			
(1)	Non-Current Assets			
	(a) Fixed Assets			
	(i) Tangible Assets			
	(ii) Intangible Assets			
	(iii) Capital WIP			
	(iv) Intangible Assets under Development			
	(b) Non-Current Investment			
	(c) DTA (Net)			
	(d) Long Term Loans & Advances			
	(e) Other Non-Current			
(2)	Assets Current Assets			
	(a) Current Investments			
	(b) Inventories			
	(c) Trade Receivables			
	(d) Cash & Cash Equivalents			
	(e) Short Term Loans & Advances			
	(f) Other Current Assets			
	Total			

THE END

PART - 2

BANKING COMPANY ACCOUNTS

Form 'A'

FORM OF BALANCE SHEET

Balance Sheet of

Balance Sheet as on 31st March..... ('000 omitted)

	Schedule No.	As on 31.3. (Current Year)	As on 31.3. (Previous Year)
Capital and Liabilities			
Capital	1		
Reserves & Surplus	2		
Deposits	3		
Borrowings	4		
Other Liabilities and Provisions	5		
Total			
Assets			
Cash and balances with RBI	6		
Balances with banks and money at call and short notice	7		
Investments	8		
Advances	9		
Fixed Assets	10		
Other Assets	11		
Total			
Contingent liabilities	12		
Bills sent for collection			

I. Form 'B'

FROM OF PROFIT & LOSS ACCOUNT FOR THE YEAR ENDED 31ST MARCH

	Schedule No.	Year ended 31.3 (Current Year)	Year ended 31.3 (Previous Year)
I. Income			
Interest earned	13		
Other Income	14		
Total			

II. Expenditure			
Interest Expended	15		
Operating Expenses	16		
Provision and contingencies			
Total			
III. Profit /Loss			
Net Profit/(Loss) (–) for the year			
Profit/(Loss) (–) brought forward			
Total			
Transfer to statutory reserve			
Transfer to other reserve			
Proposed Dividend			
Balance carried forward to Balance sheet			
Total			

SOME SPECIAL TRANSACTIONS

1. INTEREST SUSPENSE METHOD:

(Interest Suspense A/c Dr.)

In the Balance Sheet, it should be shown on the liability side.

Next year, if a part of interest is realised and the balance becomes bad, the following entry should be passed

Interest Suspense Account Dr. [Total interest]

To Interest Account [Interest realised]

To Loan Account [Interest unrealized]

It should be noted that if a debtor becomes insolvent, the bank should not take interest into account after the date of insolvency.

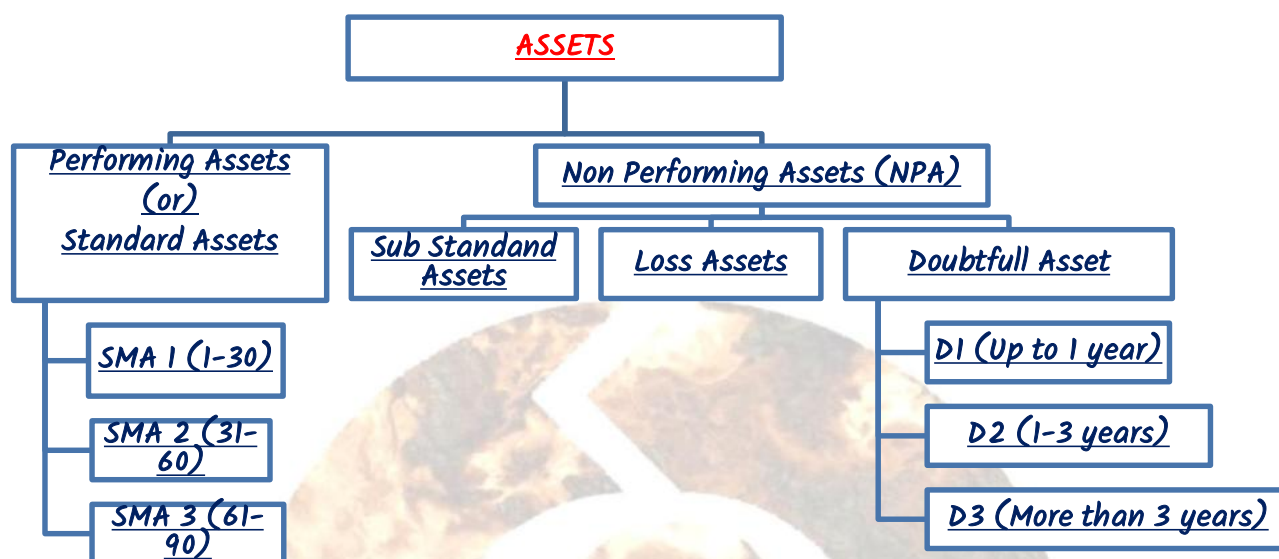
2. REBATE ON BILLS DISCOUNTED:

CONCEPT CAPSULE:

On 31 March, 2011 Victory Bank Ltd. had a balance of Rs.18 crores in “rebate on bill discounted” account. During the year ended 31st March, 2012, Victory Bank Ltd. discounted bills of exchange of Rs.8,000 crores charging interest at 18% p.a., the average period of discount being for 73 days. Of these, bills of exchange of Rs.1,200 crores were due for realization from the acceptor/customers after 31st March, 2012, the average period outstanding after 31st March, 2012 being 36.5 days. Victory Bank Ltd. asks you to pass journal entries and show the ledger accounts pertaining to:

- Discounting of Bills of Exchange; and
- Rebate on bill Discounted

3. NPA PROVISING:



Rates of Provisioning for Non-Performing Assets and Restructured Advances

Category of Advances	Rate (%)
Standard Advances	
(a) Direct advances to agricultural and SME	0.25
(b) Advances to Commercial Real Estate (CRE) Sector	1.00
(c) All other loans	0.40
Sub-standard Advances	
Secured Exposures	15
Unsecured Exposures in respect of Infrastructure loan accounts where certain safeguards such as escrow accounts are available.	20
Unsecured other loans	25
Doubtful Advances – Unsecured Portion	100
Doubtful Advances – Secured Portion	
For Doubtful upto 1 year	25
For Doubtful > 1 year and upto 3 years	40
For Doubtful > 3 years	100

From the following information find out the amount of provisions required to be made in the Profit & Loss Account of a commercial bank for the year ended 31st March, 2013:

- Packing credit outstanding from Food Processors Rs.90 lacs against which the bank holds securities worth` Rs.22.50 lacs. 50% of the above advance is covered by EC & C. The above advance has remained doubtful for more than 3 years.
- Other advances:

Assets classification

Rs. In lacs

<i>Standard</i>	<i>4500</i>
<i>Sub-standard</i>	<i>3300</i>
<i>Doubtful:</i>	
<i>For one year</i>	<i>1350</i>
<i>For two years</i>	<i>900</i>
<i>For three years</i>	<i>600</i>
<i>For more than 3 years</i>	<i>450</i>
<i>Loss assets</i>	<i>900</i>



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THE END

ELECTRICITY COMPANY ACCOUNTS

APPENDIX-III DEPRECIATION SCHEDULE

Assets	SLM Depreciation Rate (Salvage Value = 10%)
1. Land under full ownership	0.00%
2. Land under Lease	3.34%
3. (a) Building & Civil Engineering Works other than Kutcha Roads	3.34%
(b) Temporary Erections such as Wooden Structures	100.00%
4. IT Equipment's	15.00%
5. Self Propelled Vehicles	9.50%
6. Portable Air Conditioning Plants	9.50%
7. (a) Apparatus other than Motors let on hire	9.50%
(b) Motors let on hire	6.33%
8. Communication Equipment's	6.33%
9. Office Furniture, Furnishing, Equipment's, Fittings & Apparatus	6.33%
10. Any other Assets (for example)	5.28%
a) Plants & Machinery in generating stations	
b) Cooling Towers & Circulating Water Systems	
c) Hydraulic Works Forming part of the Hydro-dams, etc.	
d) Transformers & Switchgear	
e) Lighting Arrestor, Batteries, Overhead lines including cable support	
f) Meters	
g) Static Air Conditioning Plants	
h) Street Light Fittings	
i) Vehicles other than Self Propelled Vehicles	

CONCEPT CAPSULE:

From the following calculate Weighted Average Rate of Depreciation considering the rates as per Appendix-III

Assets	Closing Balance at Cost
1. Land under full ownership	14,30,000
2. Land under Lease	4,30,000
3. (a) Building & Civil Engineering Works other than Kutcha Roads	33,00,000
(b) Railways Sidings	40,00,000
(c) Temporary Erections such as Wooden Structures	10,00,000
4. IT Equipment's	20,00,000

5. Self Propelled Vehicles	30,00,000
6. Portable Air Conditioning Plants	25,00,000
7. (a) Apparatus other than Motors let on hire	15,00,000
(b) Motors let on hire	2,00,000
8. Communication Equipment's	5,00,000
9. Office Furniture, Furnishing, Equipment's ,Fittings & Apparatus	5,00,000
10. Plants & Machinery in generating stations	2,52,00,000
11. Cooling Towers & Circulating Water Systems	10,00,000
12. Hydraulic Works Forming part of the Hydro-dams, etc.	20,00,000
13. Transformers & Switchgear	2,05,00,000
14. Lighting Arrestor, Batteries, Overhead lines including cable support	42,00,000
15. Meters	20,00,000
16. Static Air Conditioning Plants	1,00,00,000
17. Street Light Fittings	47,85,000
18. Vehicles other than Self Propelled Vehicles	2,15,000

AAD TABLE

Particulars	1st year	2nd year	3rd year
A. Repayment of Loan (Not exceeding 10% of Loan Amount)			
B. Depreciation during the year			
C. Difference between A & B (A - B)			
D. Cumulative Repayment of Loan			
E. Cumulative Depreciation (Excluding AAD) at the beginning			
F. Difference between D & E (D - E)			
G. Advance Against Depreciation (AAD) (Minimum of C & F)			

Debt-Equity Regulation:

- In case of the generating stations for which investment approval is accorded on or after 1.4.2004, Debt and Equity in the ratio of 70:30 shall be considered for determination of tariff.
- Where Equity actually employed is more than 30%, Equity in excess of 30% shall be treated as Notional Loan.
- Where Equity actually employed is less than 30%, the actual Debt and Equity shall be considered for determination of tariff.

CONCEPT CAPSULE:

From the following information Calculate Return on Equity as per Regulation 21 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004:

- Date of Commercial Operation of COD = 1st April 2010
- Approved Opening Capital Cost as on 1st April 2010 = Rs.15,00,000
- Details of allowed Additional Capital Expenditure. Repayment of Loan and Weighted Average Rate of Interest on Loan is as Follows

	1st year	2nd year	3rd year	4th year
Additional Capital Expenditure (Allowed)	1,00,000	30,000	20,000	10,000

THE END

INSURANCE COMPANY ACCOUNTS

1. Insurers doing life insurance business should comply with the requirements of Schedule A. The Schedule, among other things, gives the following forms:

Revenue Account Form A-RA

Profit and Loss Account Form A-PL

Balance Sheet Form A-BS

The profit and loss account and balance sheet are given in summary form.

There are 15 Schedules, the first four relating to profit and loss account and the remaining eleven relate to balance sheet which give the details of the summary heads. Schedule 5 deals with share capital. It is followed by a connected Schedule 5A, which, gives the pattern of shareholding.

2. Insurers doing general insurance business should comply with the requirements of Schedule B. The schedule among other things gives the following forms:

Revenue Account Form B-RA

Profit and Loss Account Form B-PL

Balance Sheet Form B-BS

As in the case of life business the profit and loss account and the balance sheet are given in summary form. The details are to be shown in the accompanying schedules. Here also the first four relate to profit and loss account and the rest eleven pertaining to balance sheet. Schedule 5A gives the pattern of shareholding. In both the schedules profit and loss appropriation account is dispensed with and the appropriations are accommodated in the profit and loss account.

FORM A-RA

Registration No. and date of Registration with the IRDA

REVENUE ACCOUNT for the year ended 31st March, 20...

Policy holders' Account (Technical Account)

Particulars	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
Premiums Earned-Net			
a) Premium	1		
b) Re-insurance ceded			
c) Re-insurance accepted			
Income from Investments			
a) Interest, Dividends & Rent-Gross			
b) Profit on sale/Redemption of Investments			
c) Loss on sale/Redemption of Investments			
d) Transfer/Gain on revaluation/ change in Fair Value*			
Other Income (to be specified)			
Total (A)			

Commission	2		
Operating Expenses related to Insurance Business	3		
Other Expenses (to be specified)			
Provisions (other than taxation)			
(a)) For diminution in the value of investments (Net)			
(b) Others (to be specified)			
Total (B)			
Benefits Paid (Net)	4		
Interim Bonuses Paid			
Change in valuation of liability against life policies in force			
a) Gross**			
b) Amount ceded in Re-insurance			
c) Amount accepted in Re-insurance			
Total (C)			
Surplus/(Deficit) (D) = (A) - (B) - (C)			
Appropriations			
Transfer to Shareholders' Account			
Transfer to Other Reserves (to be specified)			
Transfer to Funds for Future Appropriations			
Total (D)			

FORM A-PL

Registration No. and Date of Registration with the IRDA

PROFIT & LOSS ACCOUNT for the year ended 31st March, 20.....

Shareholders' Account (Non-technical Account)

Particulars	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
Balance brought forward from/transferred to the Policy- holders Account (Technical Account)			
Income from Investments			
a) Interest, Dividends & Rent-Gross			
b) Profit on sale/Redemption of Investment			
c) Loss on sale/Redemption of Investments			
Other Income (To be specified)			
Total (A)			
Expenses other than those directly related to the			

insurance business			
Provisions (Other than taxation)			
(a) For diminution in the value of investments (Net)			
(b) Others (to be specified)			
Total (B)			
Profit/ (Loss) before tax			
Provision for Taxation			
Profit/ (Loss) after tax			
Appropriations			
a) Brought forward Reserve/Surplus from the Balance Sheet			
b) Interim dividends paid during the year			
c) Proposed Final Dividend			
d) Dividend Distribution on Tax			
e) Transfer to reserves/other accounts (to be specified)			
Profit carried forward to the Balance Sheet			

FORM A-BS

Registration No. and date of Registration with the IRDA

BALANCE SHEET As At 31st March, 20.....

Particular	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
Sources of funds			
Shareholders' funds:	5		
Share Capital	6		
Reserves and Surplus			
Credit/[Debit] Fair value change account	7		
Sub-total			
Borrowings			
Policyholders' Funds:			
Credit/ [Debit] Fair value change account			
Policy Liabilities			
Sub-total			
Insurance Reserves			
Provision for Linked Liabilities			
Funds for Future Appropriations			
Sub-total			
Application of Funds:			
Investments	8		
	8A		
Total			

Shareholders'				
Policyholders'		9		
Assets held to cover linked liabilities		10		
Loans				
Fixed Assets				
Current Assets:				
Cash and Bank Balances		11		
Advances and Other Assets		12		
	Sub-Total (A)			
Current Liabilities		13		
Provisions		14		
	Sub-Total (B)			
Net current assets (C) = (A - B)				
Miscellaneous Expenditure (to the extent not written off or adjusted)		15		
Debit Balance in Profit & Loss Account (Shareholders' Account)				
Total				

FORM B - RA

Registration No. and Date of Registration with the IRDA Revenue Account for the year ended 31st March, 20..

(To be prepared separately fire, marine and miscellaneous insurance)

Particulars	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
Premiums Earned (net)	1		
Others (to be specified)			
Interest, Dividend and Rent -Gross			
Total (A)			
Claims Incurred (Net)	2		
Commission	3		
Operating Expenses related to Insurance Business	4		
Others - To be specified			

Total (B)			
Operating Profit / (loss) from Fire/ Marine/ Miscellaneous Business (A-B)			

FORM B – PL

Registration No. and Date of Registration with the IRDA

Profit & Loss Account for the year ended 31st March 20...

Particulars	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
1. Operating Profit/(Loss)			
a) Fire Insurance			
b) Marine Insurance			
c) Miscellaneous Insurance			
2. Income from investments			
a) Interest, Dividend & Rent-Gross			
b) Profit on sale of investments			
Less: Loss on sale of investments			
3. Other income (To be specified)			
Total (A)			
4. Provisions (other than taxation)			
a) For diminution in the value of investments			
b) Others (to be specified)			
5. Other expenses			
a) Expenses other than those related to Insurance Business			
b) Others (To be specified)			
Total (B)			
Profit Before Tax			
Less: Provision for Taxation			
Profit After Tax			
Less: Catastrophe Reserve*			
Profit available for appropriation			
Appropriations			
a) Interim Dividends paid during the year			
b) Proposed Final Dividend			
c) Dividend Distribution Tax			
d) Transfer to any Reserves or Other Accounts (to be specified)			
Balance of profit/loss brought forward from last year			

Balance carried forward to Balance Sheet

FORM - B - BS

Name of the Insurer:

Registration No. and Date of Registration with the IRDA Balance Sheet as at 31st March, 20.....

Particulars	Schedule	Current Year (Rs. '000)	Previous Year (Rs. '000)
Sources of Funds:			
Shareholders' Funds:			
Share Capital	5		
Reserves and Surplus	6		
Borrowings	7		
Fair Value Change account			
Total			
Application of Funds:			
Investments	8		
Loans	9		
Fixed assets	10		
Current Assets:	11		
Cash and bank balance	12		
Advances and other assets			
Sub-total (A)			
Current Liabilities	13		
Provision	14		
Sub-total (B)			
Net Current Assets (C) = (A) - (B)			
Miscellaneous expenditure (to the extent not written-off or adjusted)	15		
Debit balance in Profit & Loss Account			
Total			

Reserve for unexpired risk:

This is applicable in General Insurance business only. This is in the nature of provision for claims that may arise in respect of policies which are subsisting on the date of balance sheet. Since premium has already been received in respect of such policies, provision must be made for the claims that may arise out of such policies. Insurance business is peculiar in that the premium is received in advance but the risk can arise on any day. In general insurance the policy is issued for a year which means the risk is covered for a year. Chances of the risk covered occurring do not come down proportionately with the passage of time. For example, if on the balance sheet date the unexpired period of a particular policy is one month (eleven months having expired) we cannot say that the risk on the policy is reduced to 1/12th of the

total risk. Even on the last day of the policy company's risk is as high as it was on the day the policy was issued. Therefore, insurance companies must provide for the risks associated with all such policies for which the premia has been received and the policies are still in force. Thus a large portion of the premia collected must be kept in reserve for unexpired risk. Keeping in view the nature of the business, the Executive Committee of the General Insurance Council (which has been set up under the Insurance Act to supervise general insurance companies) has laid down that in the case of marine insurance the provision for unexpired risk should be 100% of the net premium and in the case of other businesses (like accident, fire, theft, etc.) the provision should be 50% of the net premium. The provision made on the balance sheet date will be shown on the debit side of the revenue account instead of subtracting from premia. The balance of provision also appears in the balance sheet on the liabilities side under the heading 'balance of funds and accounts'. This provision will be transferred to the credit side of next year's revenue account. Thus in the revenue account the balance of the previous year appears on the credit side and the balance provided for the current year appears on the debit side.

CONCEPT CAPSULE:

Khush Raho Insurance Co. Ltd. furnishes you the following information:

- i) On 31.3.2013 it had reserve for unexpired risks to the tune of Rs.100 crore. It comprised of Rs.37.5 crore in respect of machine insurance business; Rs.50 crore in respect of fire insurance business and Rs.12.5 crore in respect of miscellaneous insurance business.
- ii) It is the practice of Khush Raho Insurance Co. Ltd. to create reserve at 100% of net premium income in respect of marine insurance policies and at 50% of net premium in respect of fire and miscellaneous insurance business.
- iii) During the year 31st March, 2014 the following business was conducted :

Particulars	Marine (Rs. crores)	Fire (Rs. crores)	Miscellaneous (Rs. crores)
Premia collected from :	45	107.5	30
a) Insured (other than insurance companies) in respect of policies issued			
b) Other insurance companies in respect of risks undertaken	17.5	12.5	10
Premia paid/payable to other insurance companies on business ceded	16.75	10.75	17.5

Khush Raho Insurance Co. Ltd. asks you to:

- i) Pass journal entries relating to "unexpired risks reserve"
- ii) Show in columnar form Unexpired Risks Reserve Account for the year ended 31st March, 2014.

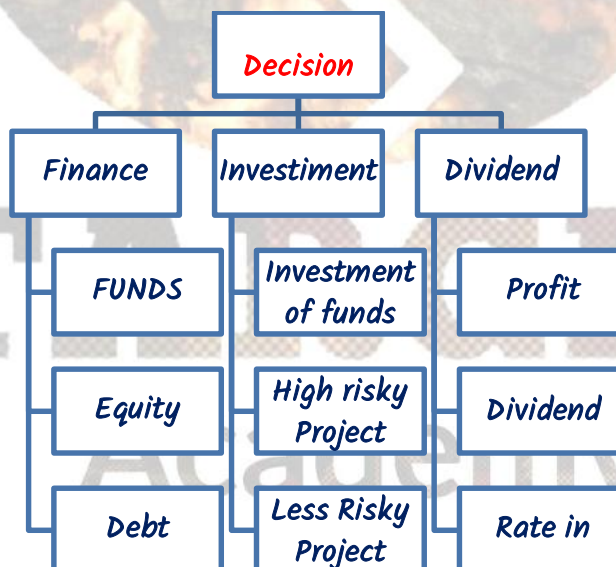
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FINANCIAL MANAGEMENT

PART - 1

FM INTRODUCTION

Basics:-



Better decision

*To balance Risk &
Return*

To Maximize Wealth

*Wealth Value of
assets*

Time Value of Money

*Future Value of
Money*

*Present Value
of Money*

*Future value
of Annuity*

*Present Value
of Annuity*

*Present Value
of Perpetuity*

*Future value of
Perpetuity*



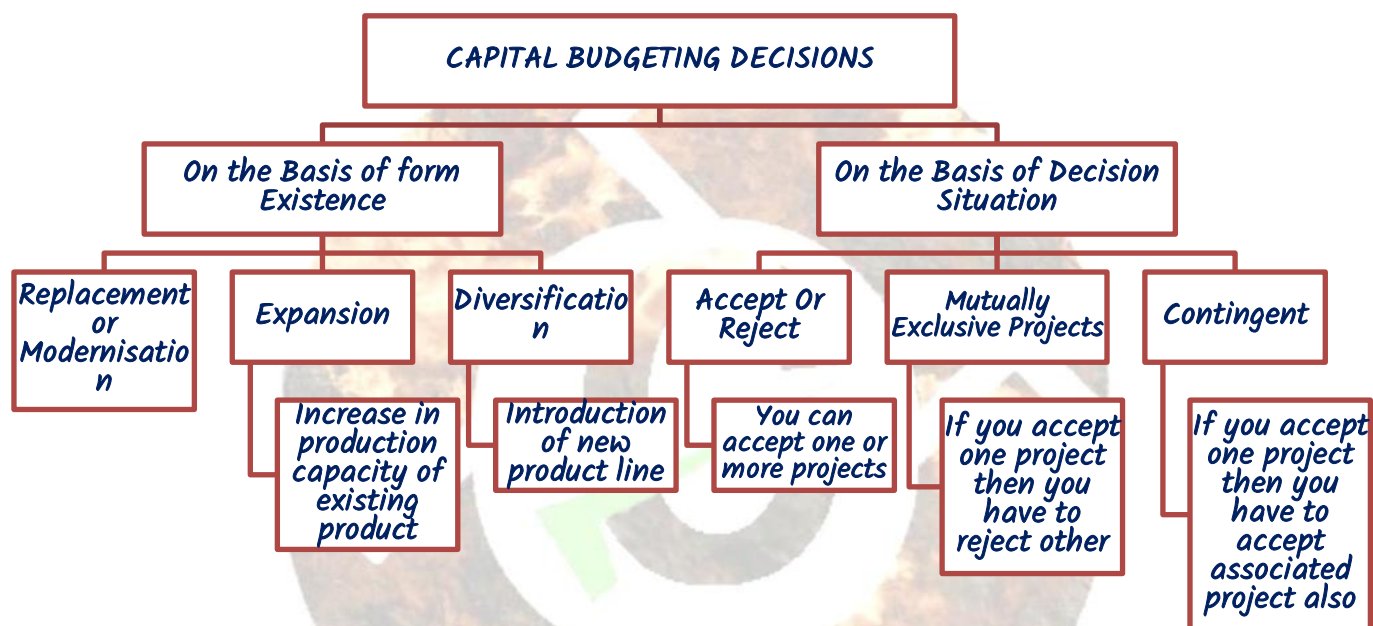
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CAPITAL BUDGETING

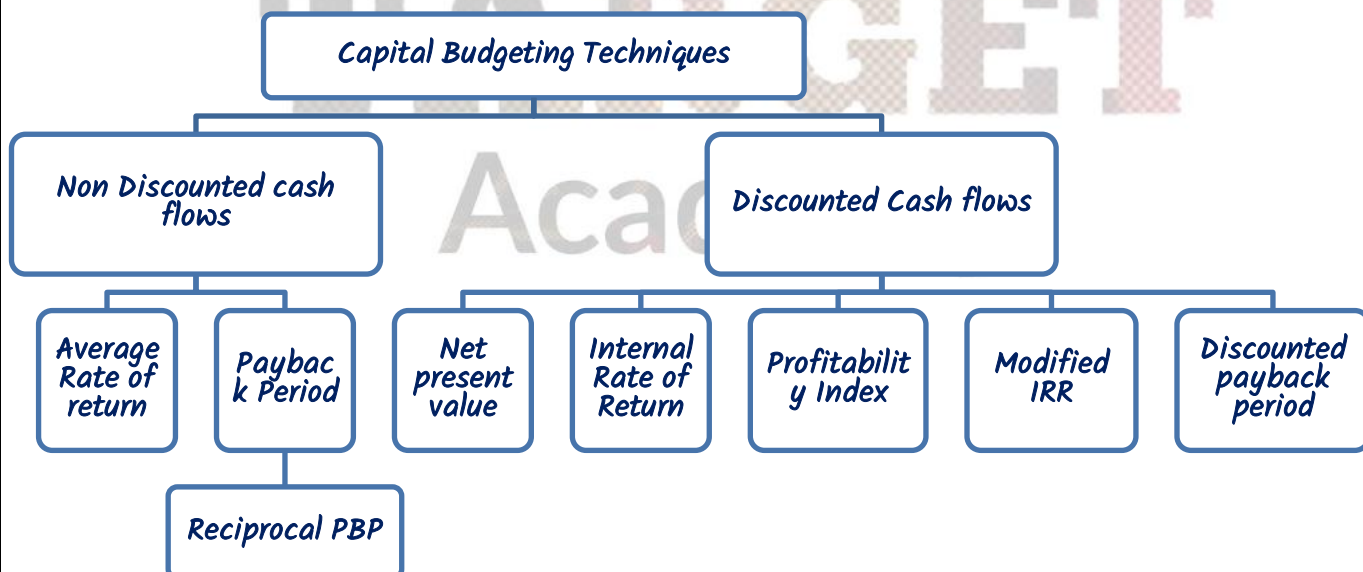
Capital Budgeting Decisions:

Capital budgeting decision refers to the decision in respect of purchase or sale of fixed assets and long term investment

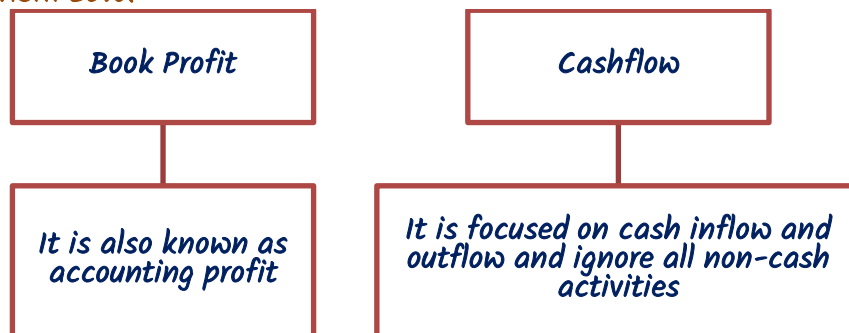


Capital Budgeting:

Capital budgeting refers to application of appropriate capital budgeting technique (one or more) to evaluate any capital budgeting proposal and take capital budgeting decision



BOOK PROFIT VS CASHFLOW:



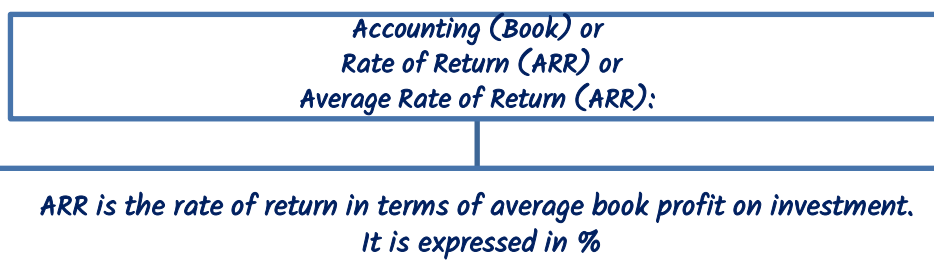
• Sales	XXX
• Less: Variable cost	(XXX)
• Contribution	XXX
• Less: Cash Fixed cost	(XXX)
• Less: Depreciation (Non cash Exp)	(XXX)
• PBT (Accounting or Book Profit)	XXX
• Less: Tax	(XXX)
• PAT	XXX
• Add: Depreciation	XXX
• CFAT	XXX

CFAT:

- $CFAT = PAT + Depreciation$
- $CFAT = \text{Cash Receipt Before Tax} (1 - t) + Depreciation \times t$
- $CFAT = \text{Cash Receipt Before Tax} (1 - t) + \text{Tax Shield on Dep.}$
- $CFAT = \text{Cash Receipt Before Tax} - \text{Tax on PBT}$

Cash Flow:	Discounted Cash Flow:
• "Cash flow without considering time value of money"	• "Cash flow after considering time value of money" • It also called Present Value of Cashflow

AVERAGE RATE OF RETURN:



Formula 1:

- $ARR(\text{Total Investment Basis}) =$
- $\text{Average Profit p.a.} / \text{Initial Investment} \times 100$

Formula 2:

- $ARR(\text{Average Investment Basis}) =$
- $\text{Average Profit p.a.} / \text{Average Investment} \times 100$

Formula 3:

- $ARR(\text{Annual basis}) =$
- Profit for the year/investment at the beginning of the year

Average Investment

- $\frac{1}{2} \times (\text{Initial Investment} + \text{Salvage}) + \text{Additional Working Capital (If Any)}$

Average Investment

- $(\frac{1}{2} \times \text{Depreciable Investment}) + \text{Salvage} + \text{Additional Working Capital (If Any)}$

Example:

Times Ltd. is going to invest in a project a sum of ₹3,00,000 having a life span of 3 years. Salvage value of machine is ₹90,000. The profit before depreciation for each year is ₹1,50,000.

PAYBACK PERIOD:

Payback Period:

- It refers to the period within which entire amount of investment is expected to be recovered in form of Cash.

DECISION MAKING BY USING PAYBACK PERIOD

Step-1

· Identify Cash Inflows

Step-2

· Decide the Target Payback Period (i.e. Maximum acceptable length of the Project)

Step-3

· Calculate Payback Period by using formula

Step-4

· If Payback Period is shorter than Target Payback Period → Accept
· If Payback Period is longer than target Payback Period → Reject

Note

- Generally, Higher the Risk, the shorter the Target Payback Period should be because it is desirable to recover riskier investment more quickly.
- When comparing two or more projects, those with shorter payback periods are generally preferable.

Advantages and Disadvantages of the Payback Period

Advantages

Uses a simple calculation

Produces results that are easy to understand

Provides a rough measure of liquidity and Risk

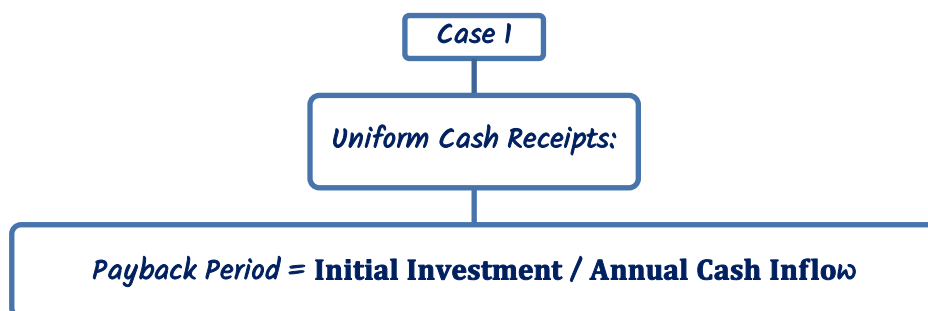
Disadvantages

Ignores Time value of money

Ignores cash flows occurring after the payback Period

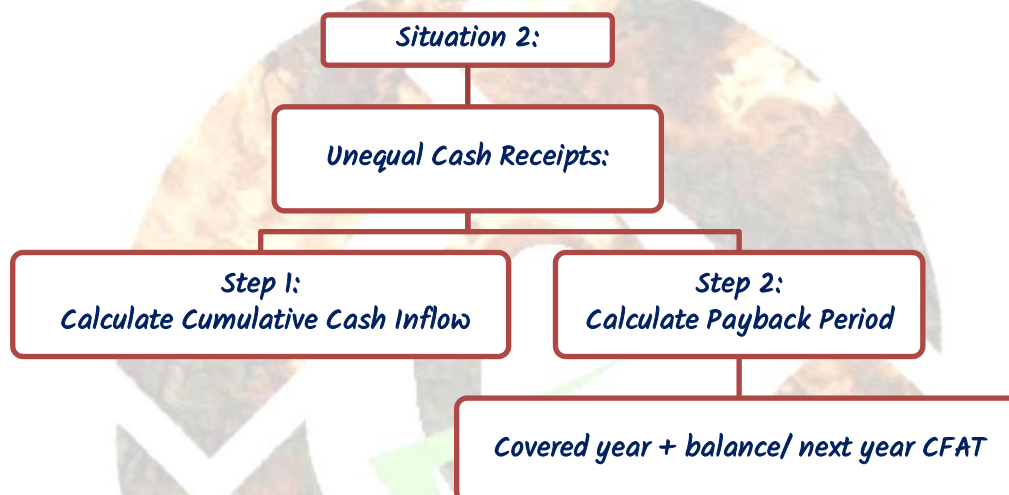
Provides no measure of profitability

Promotes the acceptance of short-term projects if the target payback period is short



Example:

Project A costs `2,00,000 has a ten year life. Uniform cash receipts expected is `40,000 p.a

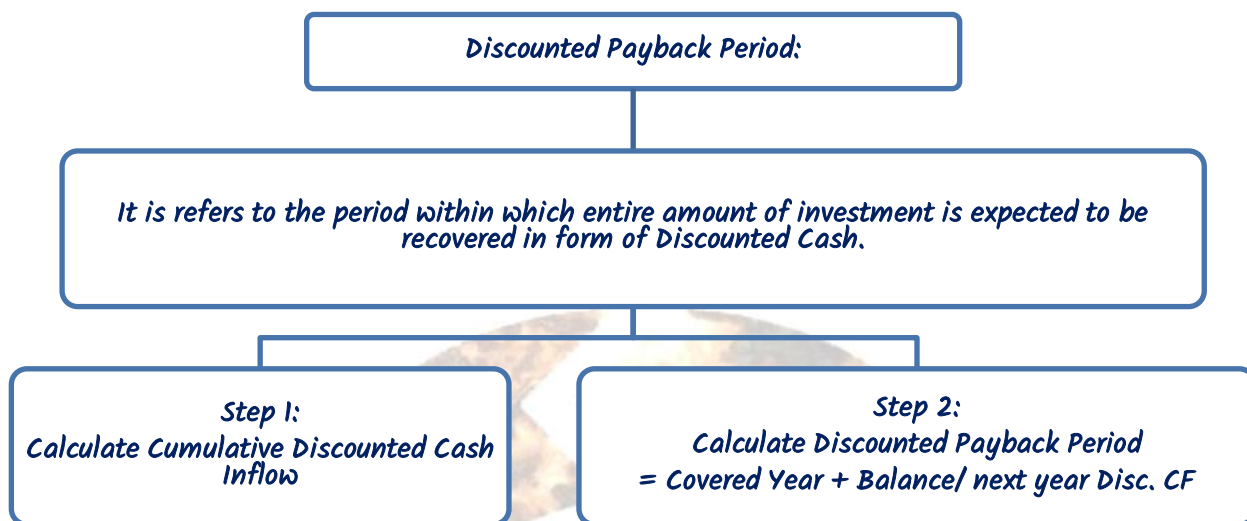


Example

- The project involves a total initial expenditure of `2,00,000 and it is estimated to generate future cash inflow of `30,000, `38,000, `25,000, `22,000, `36,000, `40,000, `40,000, `28,000, `24,000 and `24,000 in its last year.

[illegible]

DISCOUNTED PAYBACK PERIOD



Example

Geeta Ltd. is implementing a project with capital outlay of ₹7,600.

Its cash inflows are as follows:

Year	
1	6,000
2	2,000
3	1,000
4	5,000

The expected rate of return on the capital invested is 12% p.a.

Year	Cashflows	DF @ 12%	Disc CF	Cumulative Disc CF
1				
2				
3				
4				

NET PRESENT VALUE:

Net Present Value:

The net present value of a project is the amount, which helps in determine whether an investment will generate more value than its cost, by discounting future cashflows back to their PV using a specified disc.rate

$$NPV = PV \text{ of Inflow} - PV \text{ of Outflow}$$

$$NPV = +ve = \text{Accept}$$

$$NPV = -ve = \text{Reject}$$

Step-1

· Determine Net Cash Flow for each year

Step -2

· Identify Required Rate of Return

Step-3

· Determine the Discount Factor

Step-4

· Determine the PV of Net Cash Flows = Step-1 x Step-3

Step-5

· Total PV of all Net Cash Flows (Total of Total amounts in Step-4)

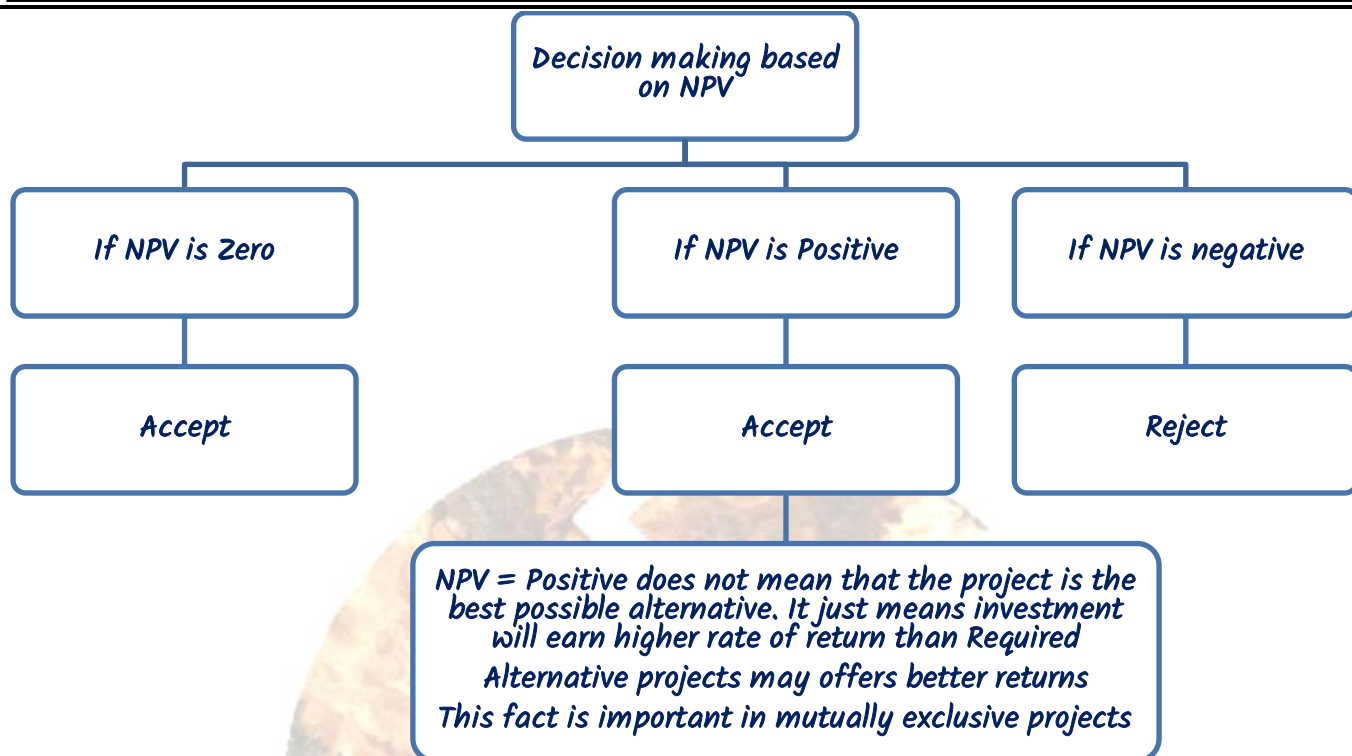
Step-6

· Subtract the initial investment amount

Step-7

· If NPV is Zero or Positive → Accept
· If NPV is negative → Reject

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PV FACTORS:

Period	10%	12%	15%

UNIFORM NET CASH FLOWS"

Particulars	1	2	3
Cash Flows	1,25,000	1,25,000	1,25,000

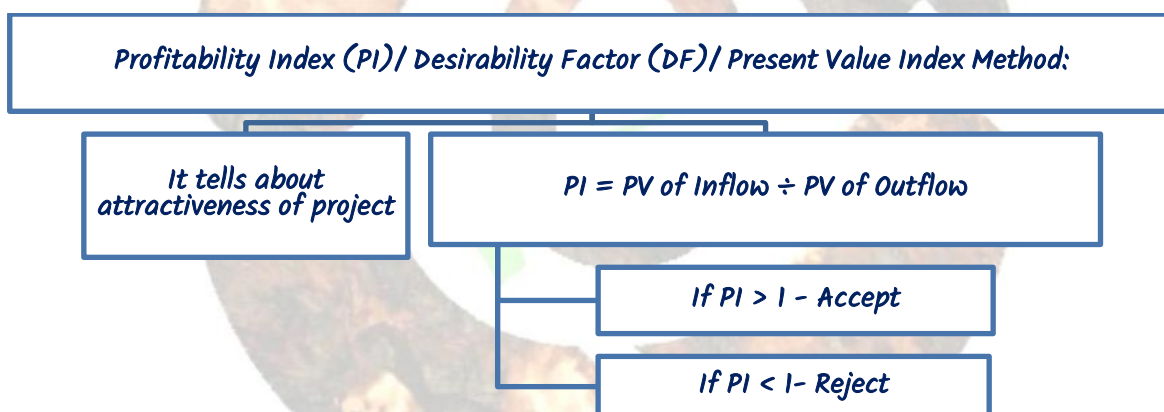
Particulars	Amount
Initial Investment	3,00,000
Discount Rate	10%
Calculate NPV	

Example:

Compute the net present value for a project with a net investment of ₹1,00,000 and net cash flows year one is ₹55,000; for year two is ₹80,000 and for year three is ₹15,000. Further, the company's cost of capital is 10%? [PVIF @ 10% for three years are 0.909, 0.826 and 0.751]

Year	Particulars	Amount	DF @ 10%	PV

PROFITABILITY INDEX (PI)

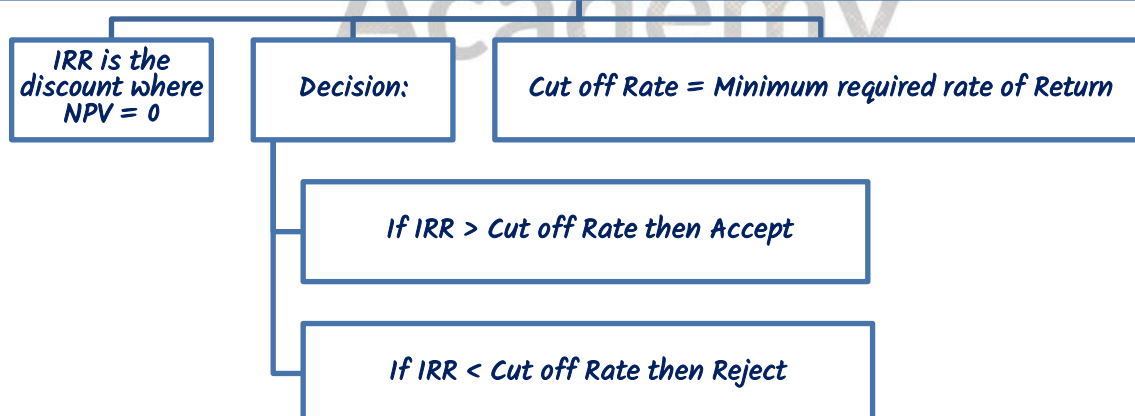


Example:

Compute the profitability factor for a project with a net investment of ₹1,00,000 and net cash flows year one is ₹55,000; for year two is ₹80,000 and for year three is ₹15,000. Further, the company's cost of capital is 10%? [PVIF @ 10% for three years are 0.909, 0.826 and 0.751]

INTERNAL RATE OF RETURN

IRR estimates Discount Rate where PV of Net Cash inflows = PV of Net Cash Outflows (Initial Investment)



UNIFORM CASH FLOWS:

Step-1	Determine Total initial cash investment
Step-2	Identify the Minimum required rate of return.
Step-3	Determine Net Cash Flows of each period
Step-4	Divide Step-1 by Step-3 to obtain IRR factor (Which is PV annuity factor)
Step-5	Locate a discount Rate at the specified number of years that matches the IRR factor
Step-6	Compare IRR with Cut off Rate or Criteria Rate
Step-7	If IRR > Cut off rate → Accept. If IRR < Cut off rate → Reject

UNIFORM NET CASH FLOWS

Example

Particulars	1	2	3
Cash Flows	15,000	15,000	15,000

Particulars	Amount	%	PV annuity factor (3 years)
Initial Investment	35,000	13%	
Criteria Rate	10%	14%	
Calculate IRR			

UNEVEN CASH FLOWS:

Trial or error method
Calculate NPV at different Discount Rates
Find the Discount factor where NPV is zero

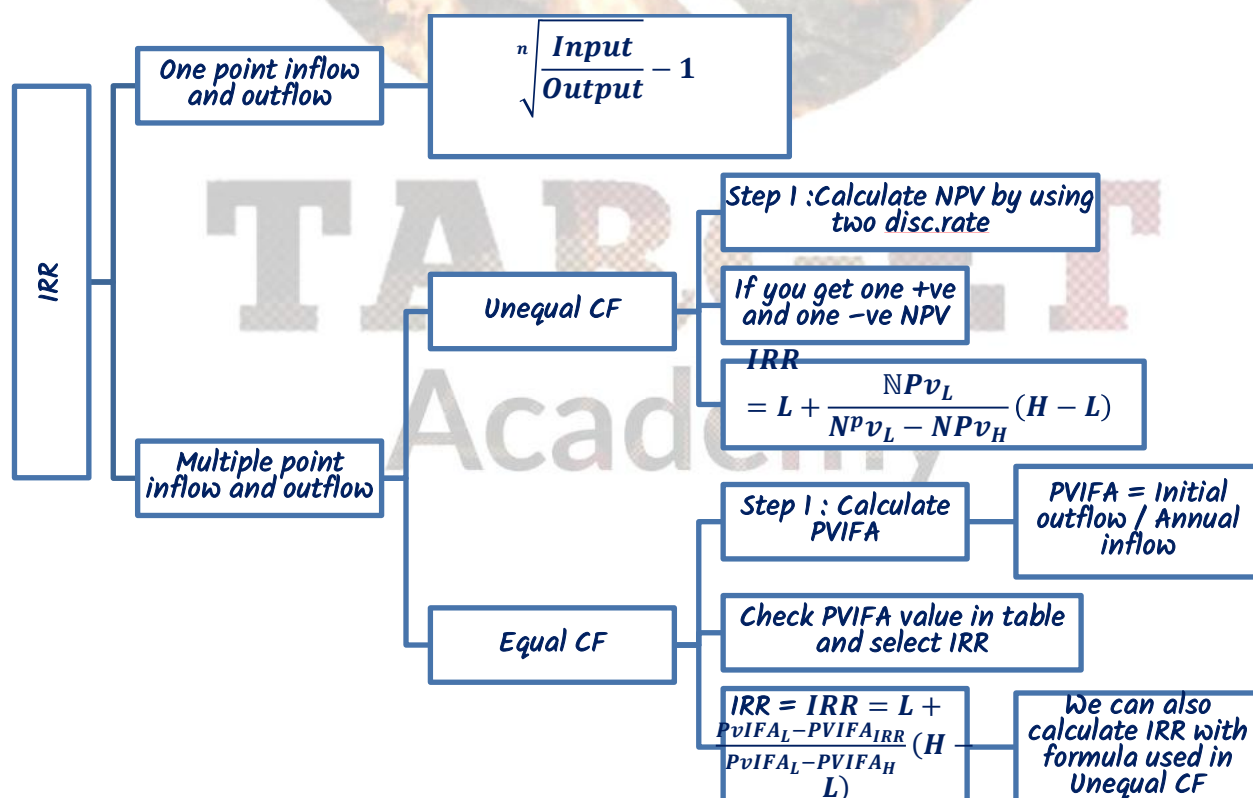
Uneven Net Cash Flows

Example

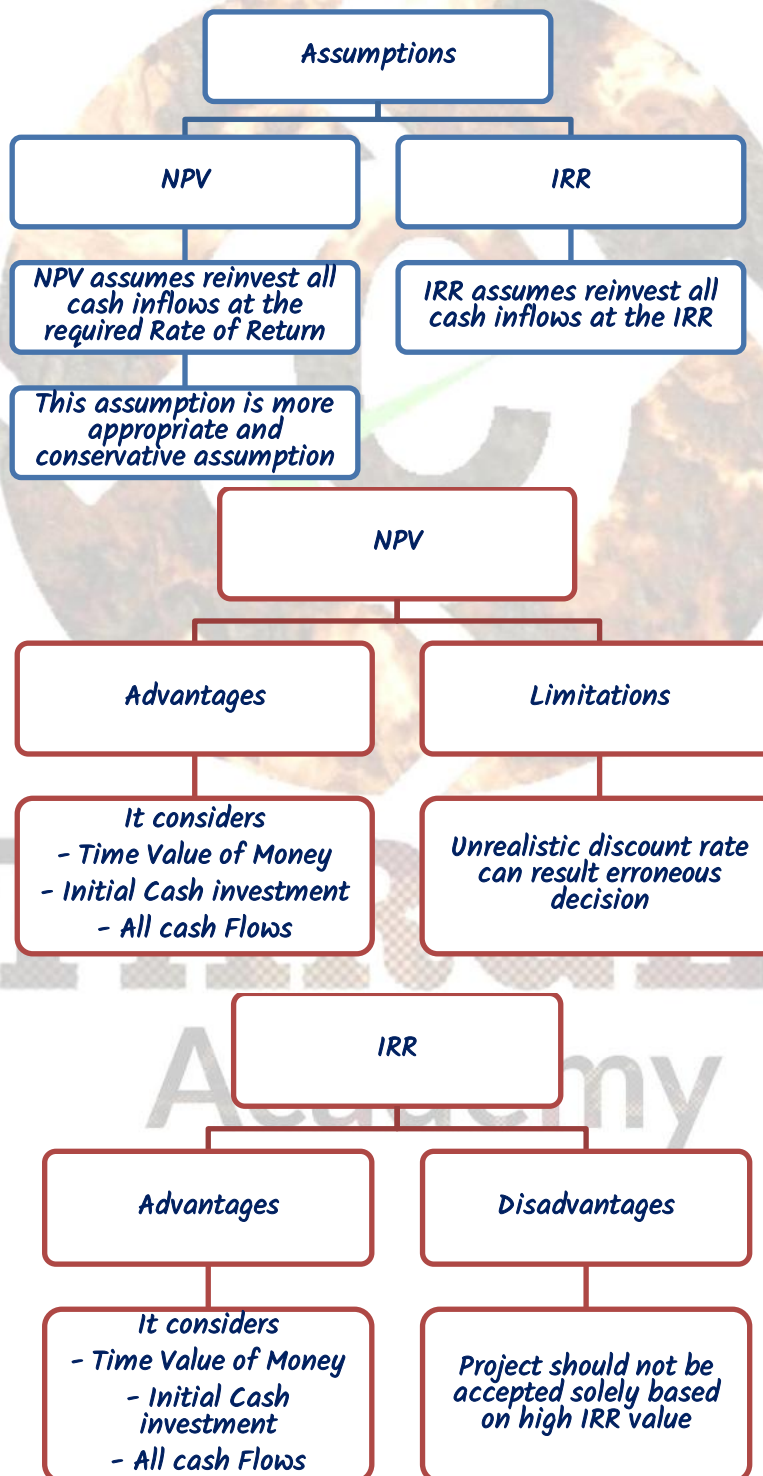
Particulars	1	2	3
Cash Flows	6,000	4,000	3,000

Particulars	Amount
Initial Investment	10,675
Criteria Rate	10%
Calculate IRR	

year	CF	Disc. Rate factor	Disc CF	Disc. Rate factor	Disc CF	Disc. Rate factor	Disc CF



NPV	IRR
<i>NPV is a Dollar Amount</i>	<i>IRR is a Percentage (Rate)</i>
<i>Easy to compare</i>	<i>Difficult to compare</i>
<i>NPV is helpful in evaluating project in which the required rate of return varies over the life of the project</i>	<i>IRR is not useful to evaluate project when required rate of return varies over life of project.</i>
<i>NPV is also more reliable than IRR, when there are several alternative periods of net cash inflows and net cash out flows</i>	<i>IRR is not suitable, when there are several alternative periods of net cash inflows and net cash out flows</i>



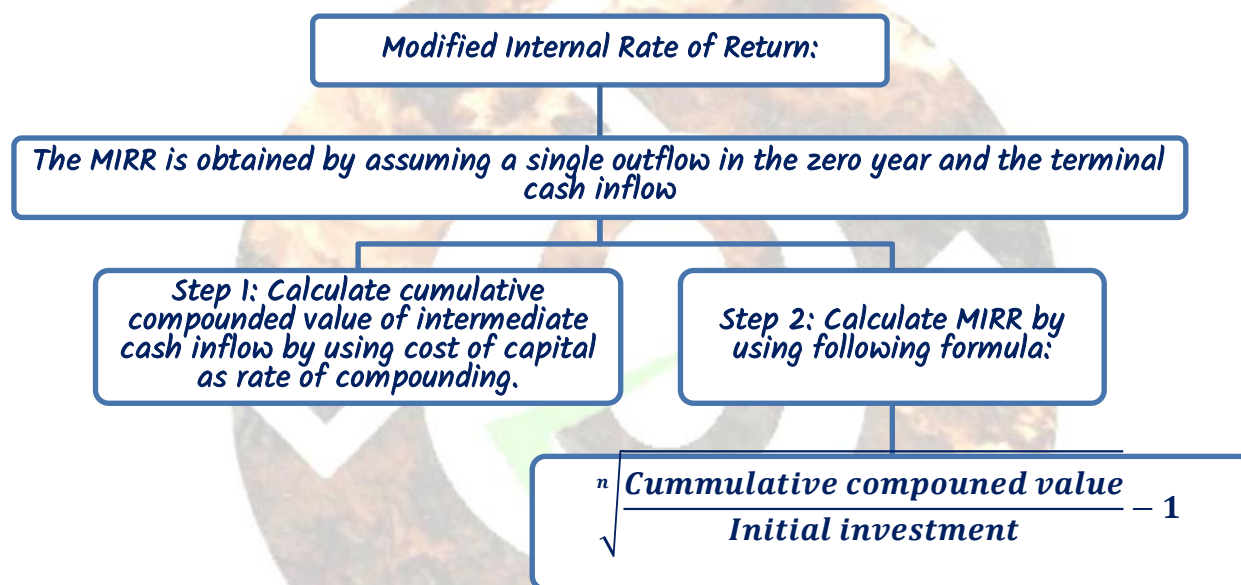
Note

NPV and IRR methods typically yield similar results as long as there are no difference in

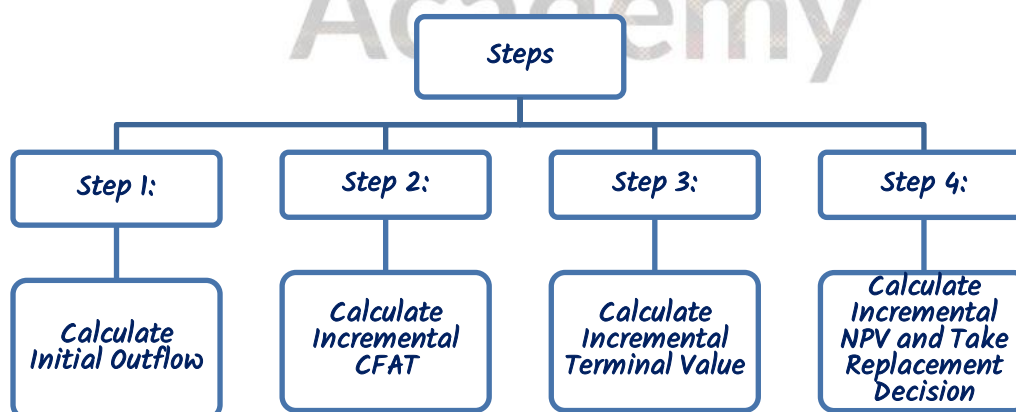
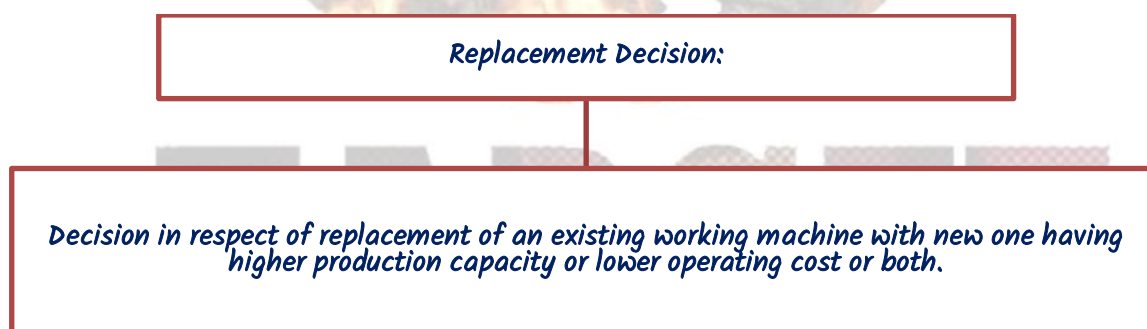
- Project Size
- Net Cash Flows pattern
- Life of the Project
- Cost of Capital Over the of the project

If cash flows are negative, IRR might yield multiple answers. In such situations, NPV should be used

MODIFIED INTERNAL RATE OF RETURN (MIRR):

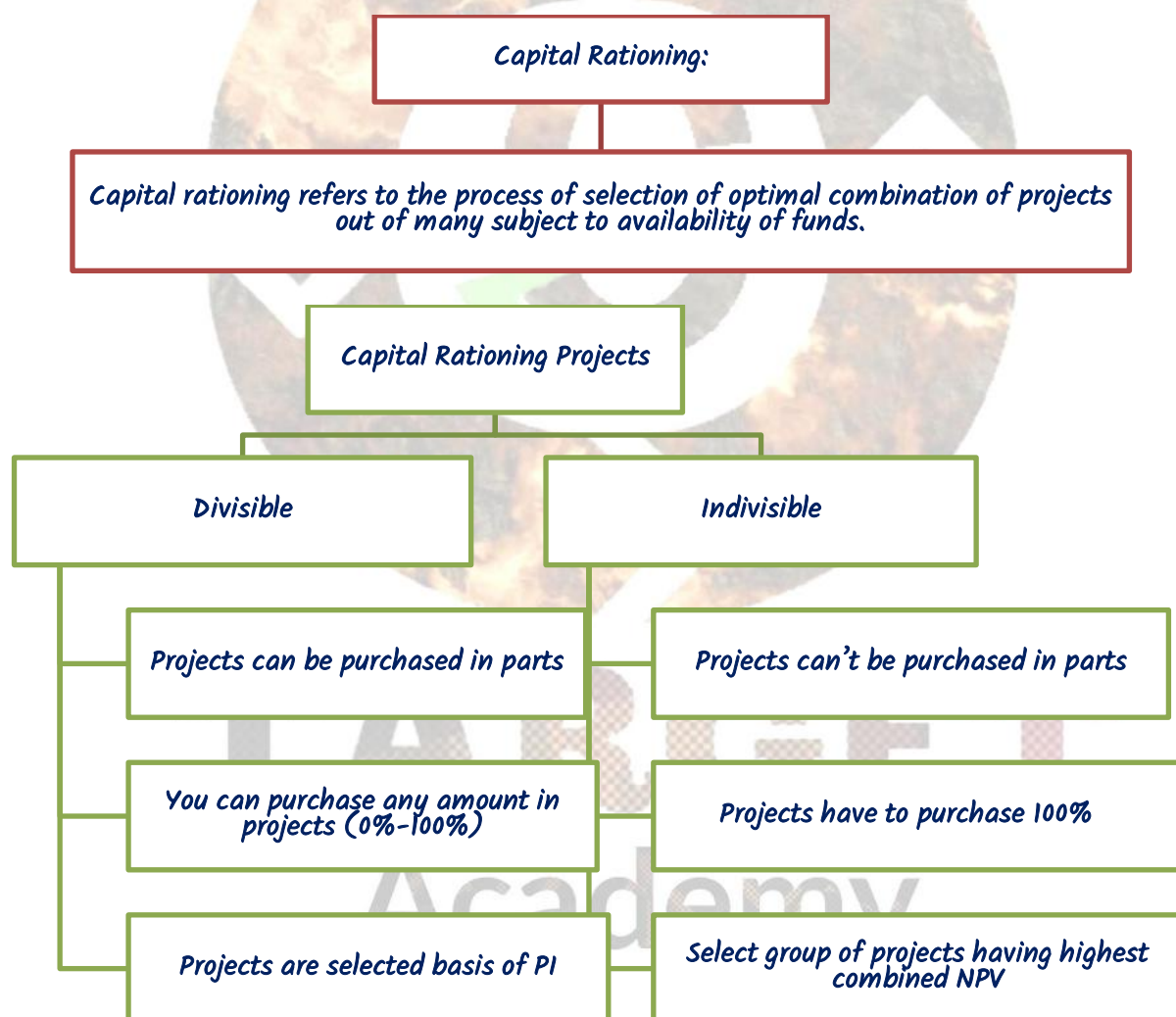


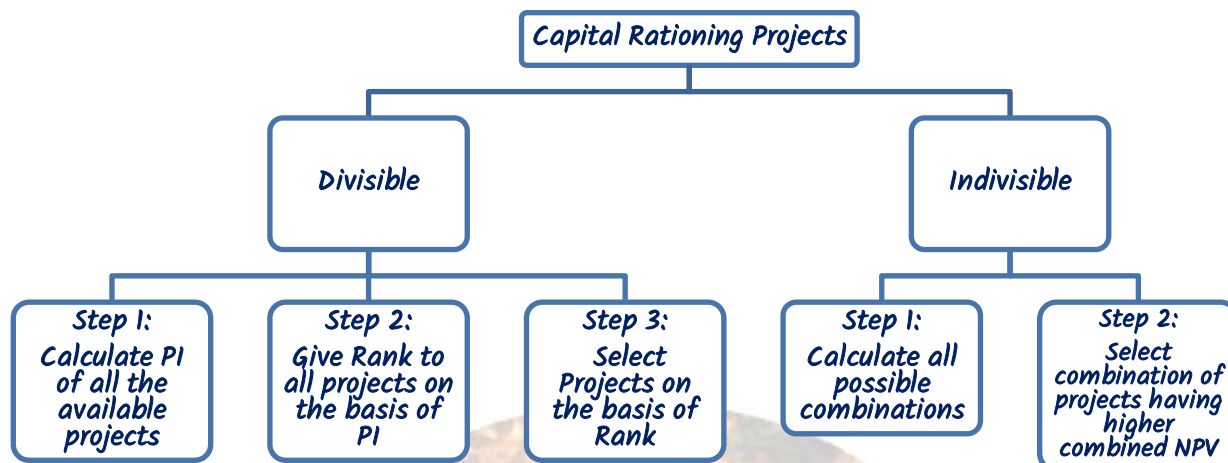
REPLACEMENT DECISION:



- Step 1
- Purchase Cost of New Machine xxx
- Less: Sale Value of Old Machine (xxx)
- Less: Tax Saving on Loss on Sale of Old Machine (xxx)
- Add: Tax Payment on Profit on Sale of Old Machine xxx
- Add: Increase In Working Capital xxx
- Less: Decrease in Working Capital Initial Outflow (xxx)
- INITIAL OUTFLOW

CAPITAL RATIONING:





UNEQUAL LIFE OF PROJECTS

In case of comparison between two projects having different life we can solve the problem by using Equivalent Annualized Criterion:

Step 1: Calculate NPV of the projects or PV of outflow of the projects

Step 2: Calculate Equivalent Annualized NPV or Outflow

Step 3: Select the proposal having higher annualised NPV or Lower annualised outflow

$$\text{Equivalent Annualised NPV or Outflow} = \text{NPV or PV OF OUTFLOW} / \text{PVAF}$$

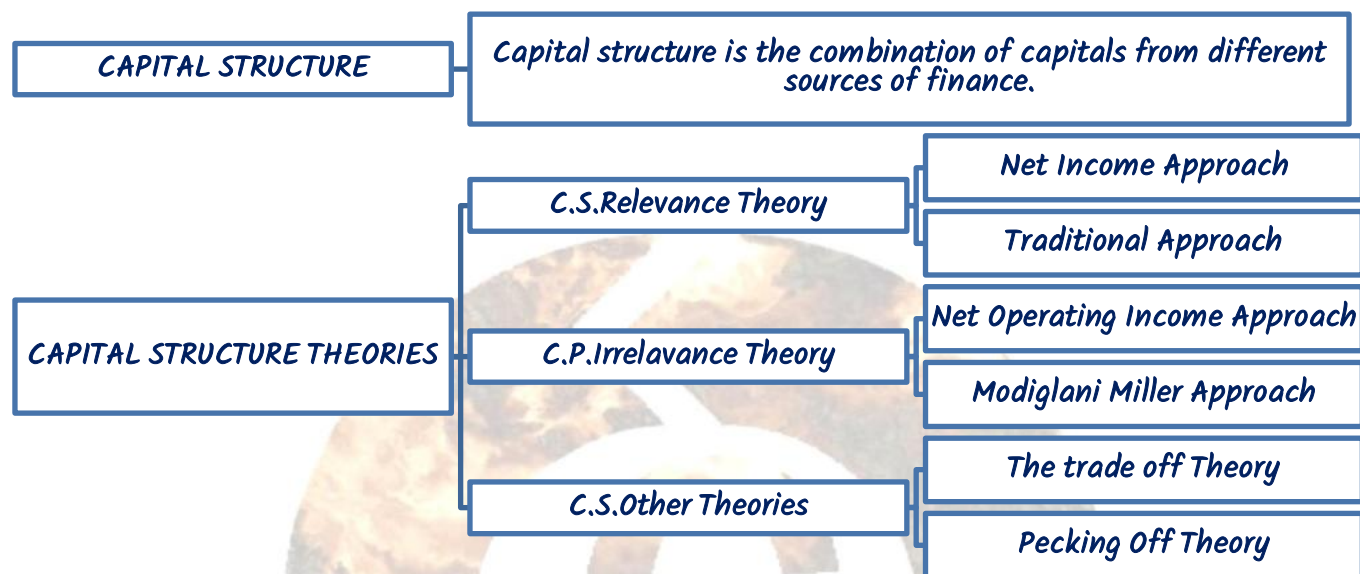
DECISION UNDER VARIOUS TECHNIQUES:

Techniques	Yes	No
ARR	$\text{ARR} \geq \text{Desired Return}$	$\text{ARR} < \text{Desired Return}$
Traditional Payback	$\text{Payback} \leq \text{Desired Payback}$	$\text{Payback} > \text{Desired Payback}$
Discounted Payback	$\text{Payback} \leq \text{Desired Payback}$	$\text{Payback} > \text{Desired Payback}$
NPV	$\text{NPV} \geq 0$	$\text{NPV} < 0$
PI	$\text{PI} \geq 1$	$\text{PI} < 1$
IRR	$\text{IRR} \geq \text{Cost of Capital}$	$\text{IRR} < \text{Cost of Capital}$
MIRR	$\text{MIRR} \geq \text{Cost of Capital}$	$\text{MIRR} < \text{Cost of Capital}$

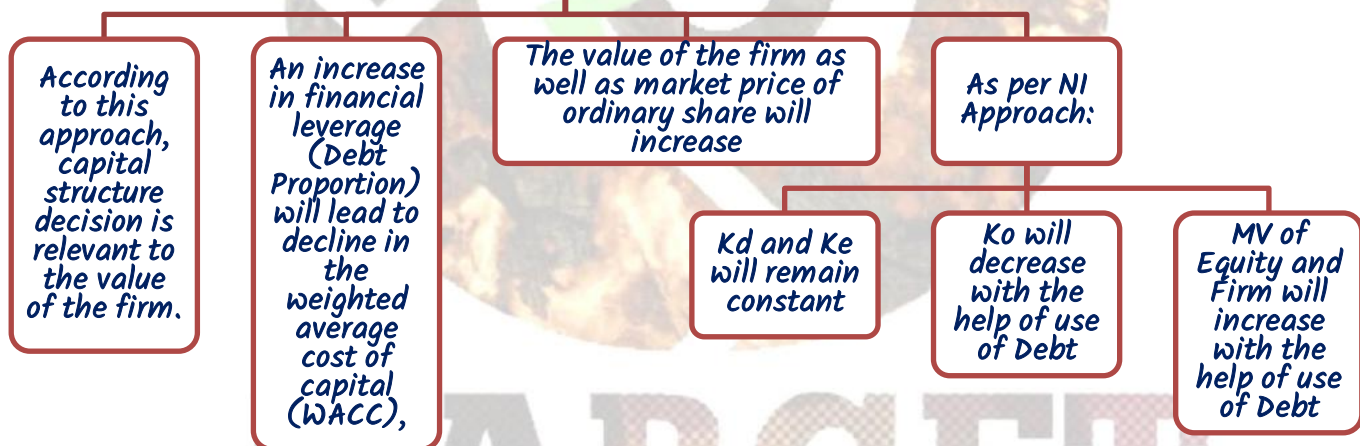
THE END

FINANCING DECISIONS OF A FIRM

CAPITAL STRUCTURE



Net Income Approach:



Formulas

- Value of Firm (V) = Value of Share + Value of Debt OR
- $$EBIT (1 - t) / K_o$$
- Value of Share (S) = $(EBIT - I) (1 - t) / K_e$
- Value of Debt (D) = Face Value of Debt
- Cost of Capital (K_o) = $EBIT (1 - t) / V$ OR
- $$K_e W_e + K_d W_d$$
- Cost of Equity (K_e) = $(EBIT - I) (1 - t) / S$

- **Example**
- X Ltd. and Y Ltd. are identical except that the former uses debt while the latter does not. Thus levered firm has issued 10% Debentures of ₹9,00,000. Both the firms earn EBIT of 20% on total assets of ₹15,00,000. Assuming tax rate is 50% and capitalization rate is 15% for an all equity firm.

Traditional Approach:

This approach favors that as a result of financial leverage up to some point,

cost of capital comes down and value of firm increases.

However, beyond that point, reverse trends emerge.

As per Traditional Approach:

K_d, K_e, K_o and MV of Equity and MV of Firm are variable

Company has to select capital structure with lowest K_o or highest MV of Firm

NOI Approach:

According to this approach, capital structure decisions of the firm are irrelevant.

Any change in the leverage will not lead to any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage

As per NOI Approach:

K_d, K_o and MV of Firm will remain constant in case of without tax structure

K_d will remain constant in case of with tax structure, with the increase in Debt, MV of firm will increase and K_o will decrease

- Value of Firms as per NOI Approach:
 - Step 1 Calculate Value of Unlevered Firm:
 - Value of Unlevered Firm (VU)
 - $$= \text{EBIT} (1 - t) / K_o$$
 - Step 2 Calculate Value of Levered Firm:
 - Value of Levered Firm (VL) = VU + DT
 - Example X Ltd. and Y Ltd. are identical except that the former uses debt while the latter does not. Thus levered firm has issued 10% Debentures of ₹9,00,000. Both the firms earn EBIT of 20% on total assets of ₹15,00,000. Assuming tax rate is 50% and capitalization rate is 15% for an all equity firm.
 - Compute the value of the two firms using NOI approach
 - **Answer**
 - Value of unlevered firm (Y Ltd) = $\text{EBIT} (1 - t) / K_o$
 - $$= 3,00,000 (1 - 0.30) / 0.15 = ₹10,00,000$$
 - Value of levered firm (X Ltd)
 - $$= \text{Value of unlevered firm} + \text{Debt} \times \text{tax} =$$
 - $$₹10,00,000 + 9,00,000 \times 50\% = ₹14,50,000$$
- This value of ₹14,50,000 can be bifurcated into Debt of ₹9,00,000 and Equity of ₹5,50,000

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Assumptions of MM Approach

Capital markets are perfect

All information is freely available

There are no transaction costs

All investors are rational

Firms can be grouped into 'Equivalent risk classes'

• Non-existence of corporate taxes
Note: Solution of practical problems are same under NOI and MM Approaches

Modigliani-Miller Approach (MM)

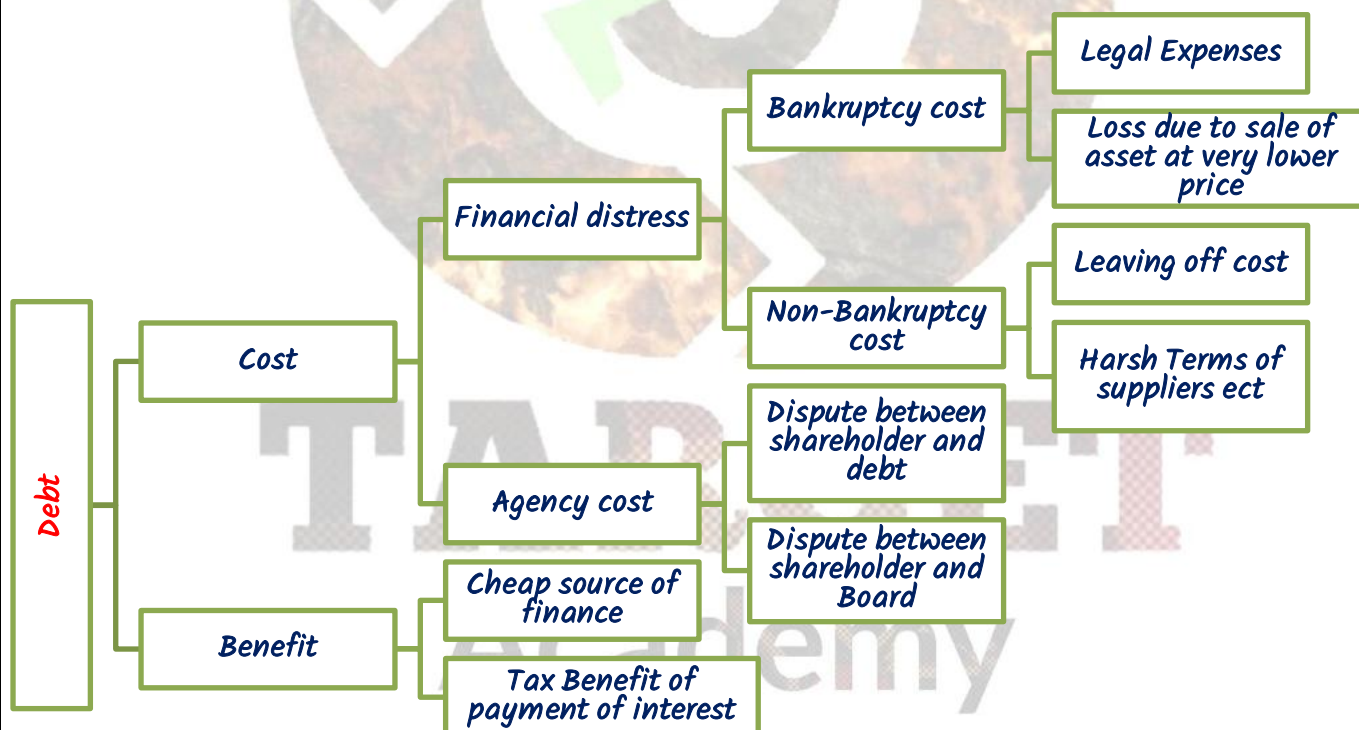
1.MM Approach:

1. According to Modigliani and Miller, in a perfect world without taxes or other issues, a company's total value doesn't depend on how it's financed.

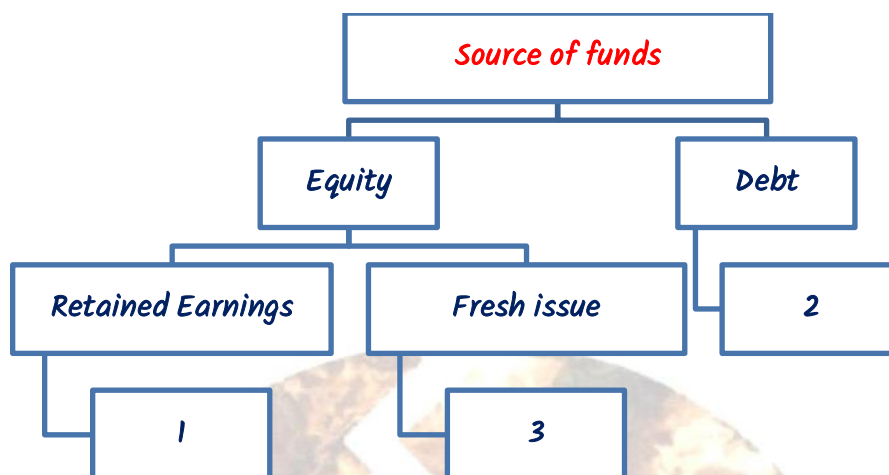
1. They suggest that while adding debt increases the cost of equity, it also lowers the cost of debt, keeping the overall cost of capital the same.

1. This insight helps explain why companies might adjust their debt levels to keep their overall cost of capital steady.

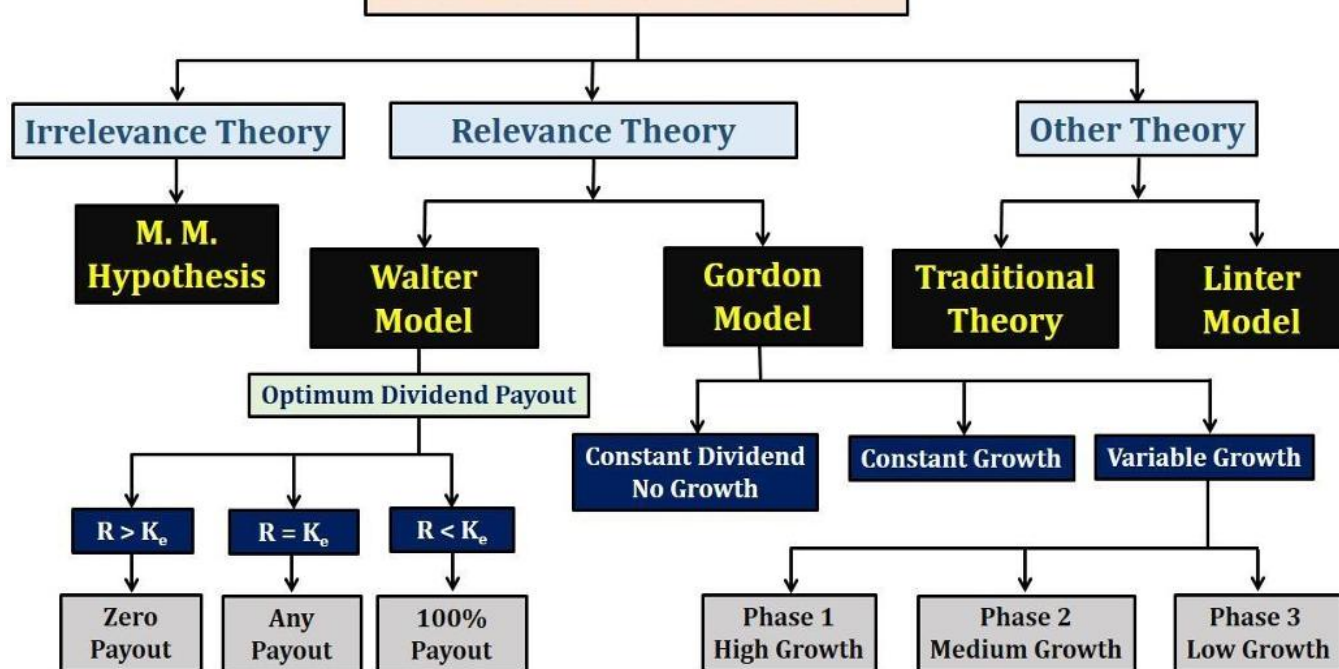
TRADE OFF THEORY



PECKING ORDER THEORY



THEORIES OF DIVIDEND



**MODIGLIANI and MILLER (M.M)
HYPOTHESIS:**

MM approach is in support of the irrelevance of dividends i.e. firm's dividend policy has no effect on either the price of a firm's stock or its cost of capital.

• **Practical Problems:**

- **STEP 1** Calculate P_1
- $P_0 = P_1 + D_1 / (1 + K_e)$ OR
- $P_1 = P_0 (1 + K_e) - D_1$
- **STEP 2** Calculate New Shares (Δn) required to be issued
- $\Delta n = \text{Funds Required} / P_1$ OR $I - (E - D) / P_1$
- **STEP 3** Calculate Value of Firm (nP_0):
- $Np_0 = (n + \Delta n) P_1 - I + E / (1 - k_e)$

Example

- AB Engineering Ltd. belongs to a risk class for which the capitalization rate is 10%. It currently has outstanding 10,000 shares selling at ₹100 each. The firm is contemplating the declaration of a dividend of ₹5 per share at the end of the current financial year. It expects to have a net income of ₹1,00,000 and has a proposal for making new investments of ₹2,00,000.
- Required:
 1. Calculate value of firm when dividends are not paid.
 2. Calculate value of firm when dividends are paid

WALTER'S MODEL:

Walter approach is in support of the relevance of dividends

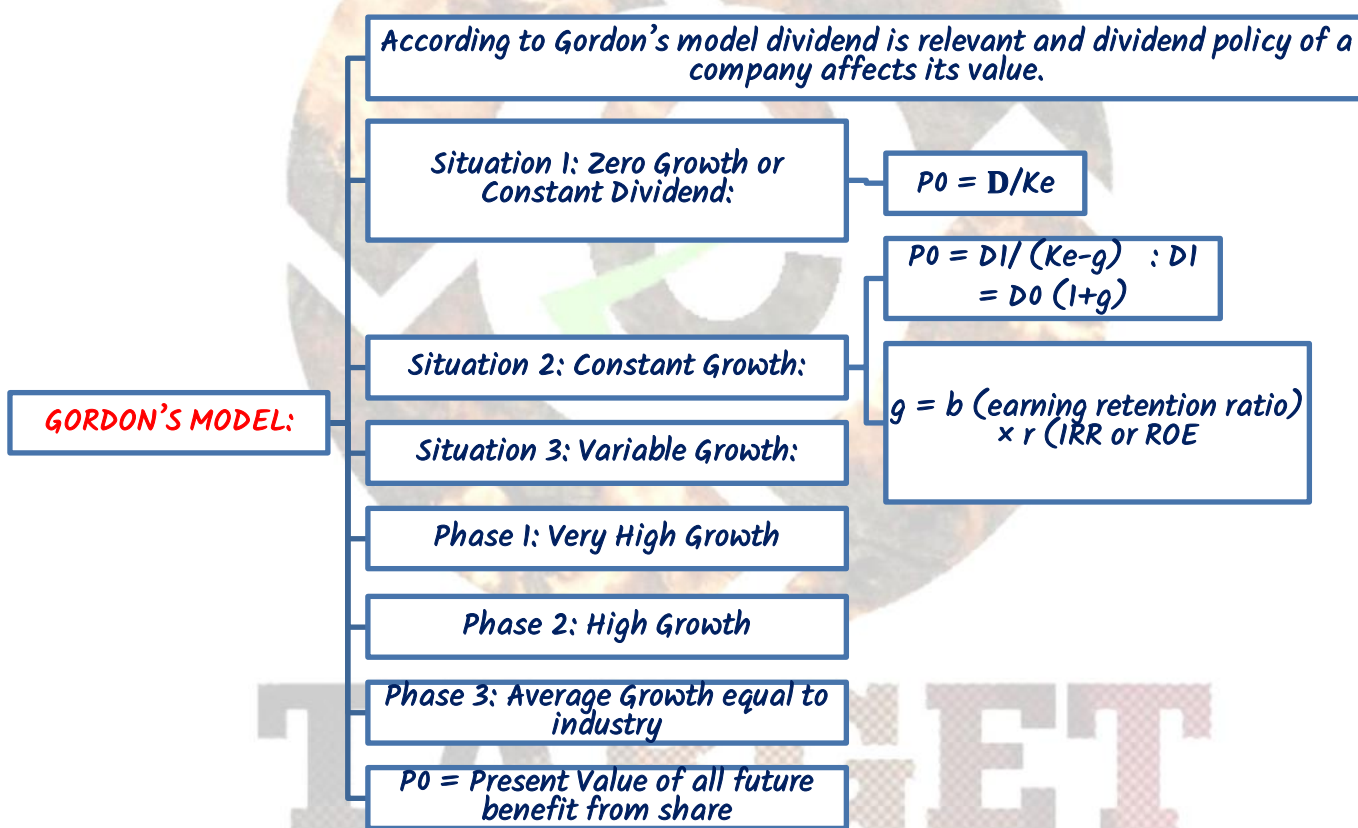
i.e. firm's dividend policy has effect on either the price of a firm's stock or its cost of capital.

- Formula: Market Price of Share (P) = $(D + r(E - D) / K_e) / k_e$
- P = Market Price of the share
- E = Earnings per share
- D = Dividend per share
- K_e = Cost of equity/ rate of capitalization/ discount rate
- R = Internal rate of return/ return on investment

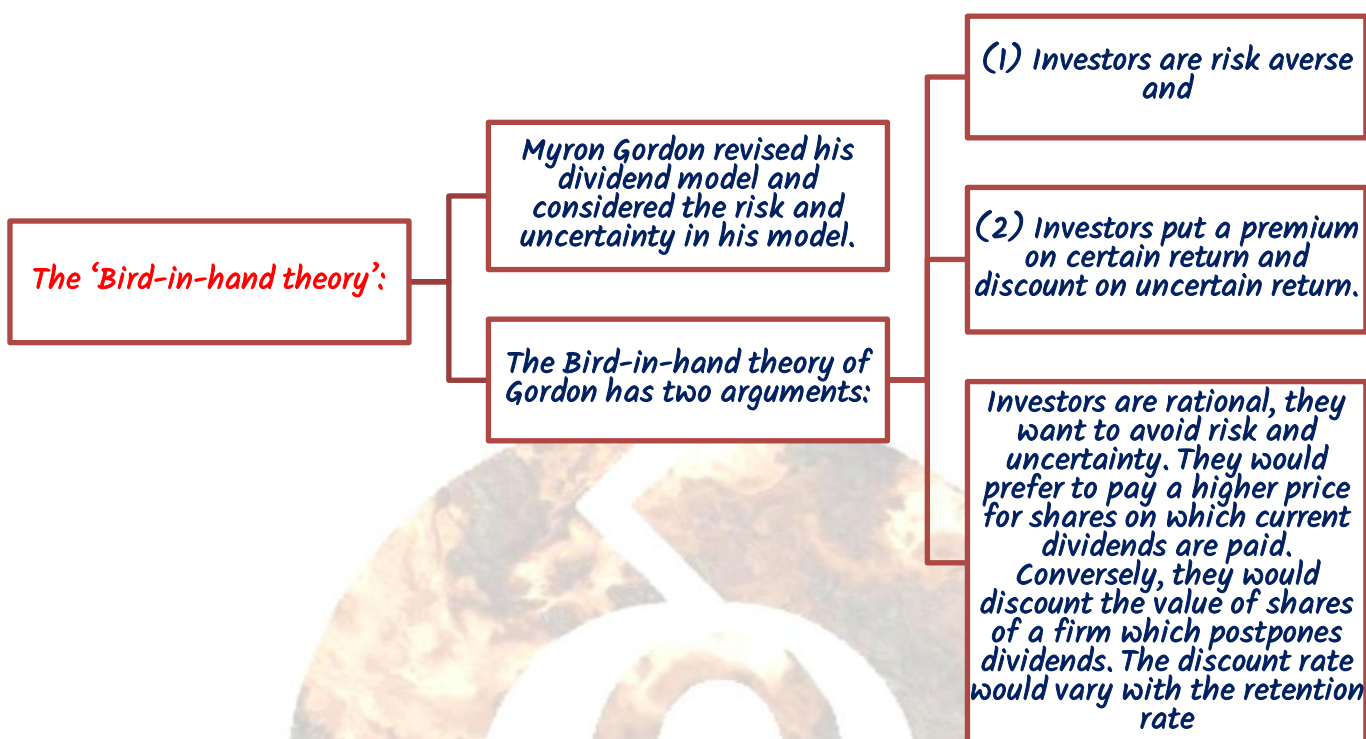
Company	R vs k_e	Optimum dividend payout
Growth	$r > k_e$	Zero
Constant	$r = k_e$	Every payout ratio is optimum
Decline	$r < k_e$	100%

• **Example**

- XYZ Ltd. which earns `10 per share is capitalized at 10% and has a return on investment of 12%. Determine the optimum dividend payout ratio and the price of the share at optimum payout.
- (1) The optimum dividend payout ratio is 'Zero', since $r > k_e$.
- (2) Calculation of Price of share at optimum payout:

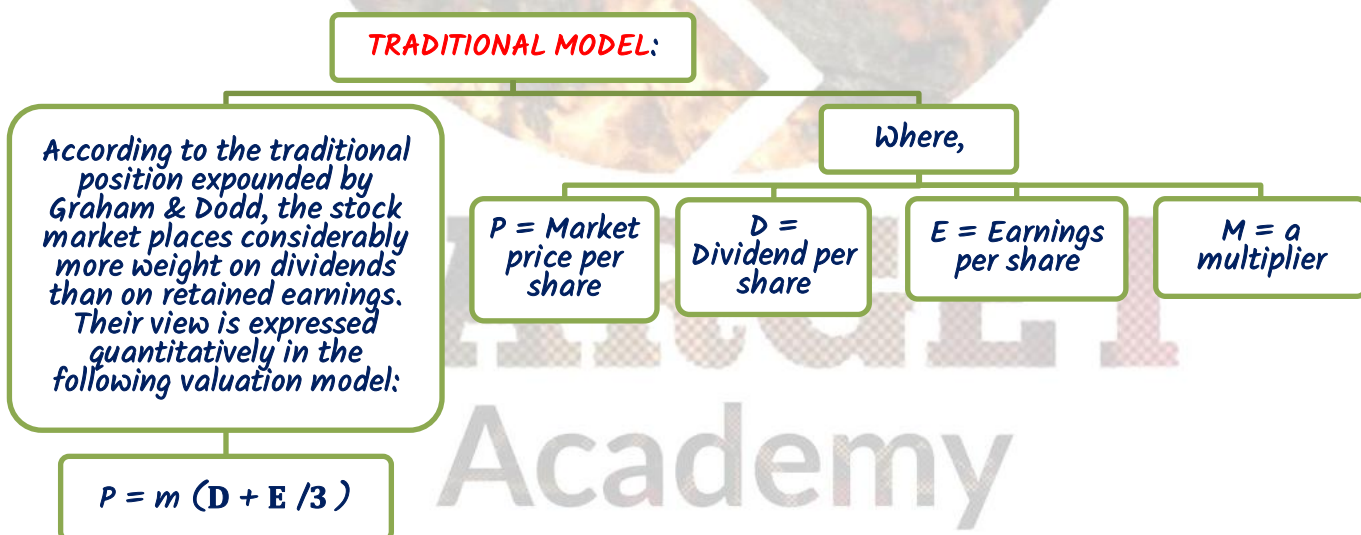


Company	R vs k_e	Optimum dividend payout
Growth	$r > k_e$	Zero
Constant	$r = k_e$	Every payout ratio is optimum
Decline	$r < k_e$	100%



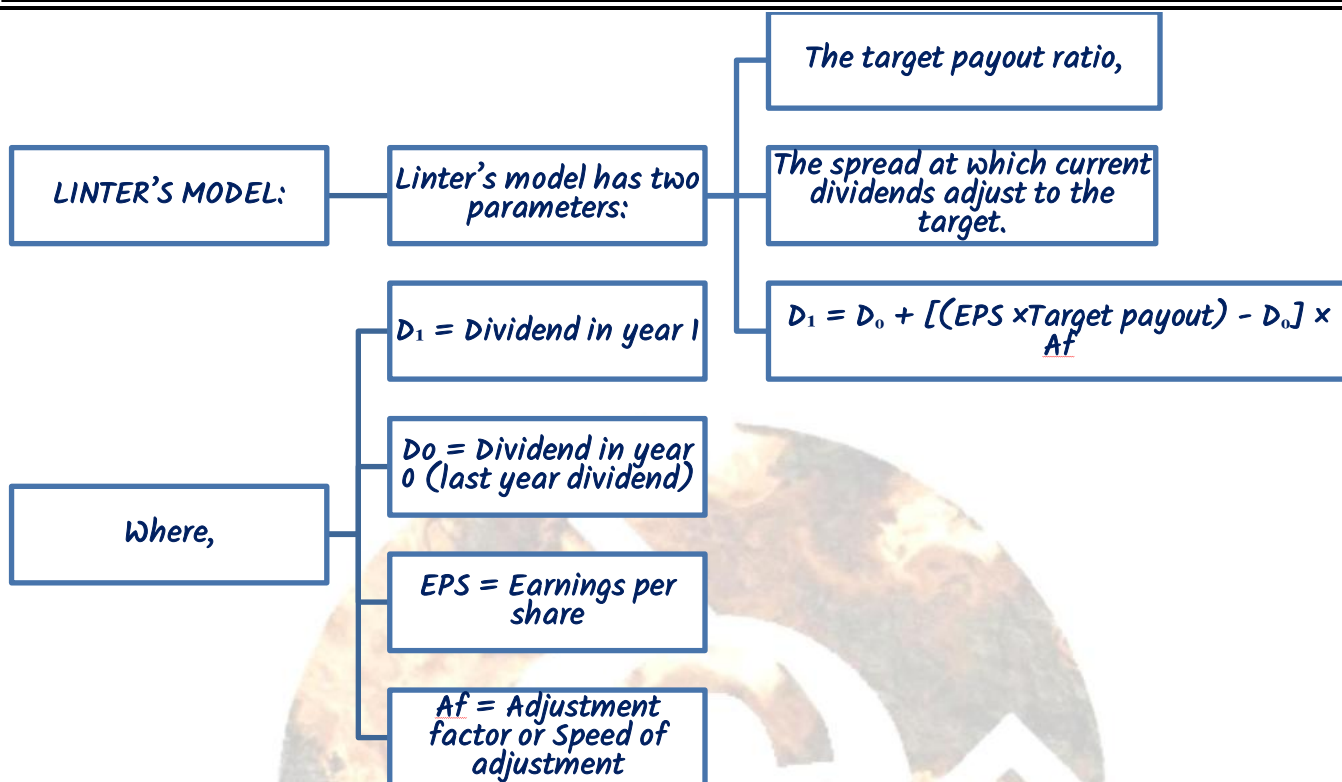
Example

- XYZ is company having share capital of 10 lakhs of ₹10 each. It distributed current dividend of 20% per annum. Annual growth rate in dividend expected is 2%. The expected rate of return on its equity capital is 15%, what should be the current market price of the share?



Example

The following information regarding the equity shares of M Ltd. is given that Market price is ₹58.33, Dividend per share is ₹5 and Multiplier is 7.



Example

Given the last year's dividend is 9.80, speed of adjustment = 45%, target payout ratio 60% and EPS for current year 20

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PART – 2

FINANCIAL RATIOS

Ratio:- It is the relationship between two elements Ratio brings absolute amounts of 2 different entities / years in to uniform %

Ex:- “Gross Profit Ratio” = $\frac{\text{Gross Profit}}{\text{Sales}} \times 100$

Profit & Loss A/c

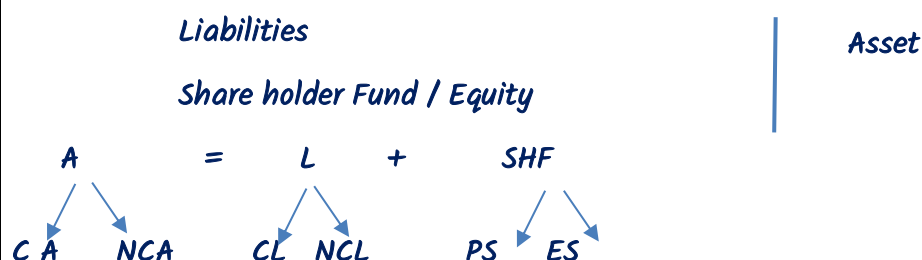
Particulars	Amount
Net sales (sales – sale returns)	XXX
COGS	XXX
Gross Profit	XXX
(-) Operating expenses	
Admin Expenses XXX	
Selling Expenses XXX	XXX
Operating income /EBIT (Earnings before interest and Taxes)	XXX
(-) Other expenses	
Interest	XXX
EBT	XXX
(-) Taxes	XXX
EAT / Net profit	XXX

Capital Employed = Debt + Equity = Long Term Liabilities + Share Holders Funds

SHF = ESC+PSC + R&S

ESH = E.S.C. + R & S

Balance Sheet

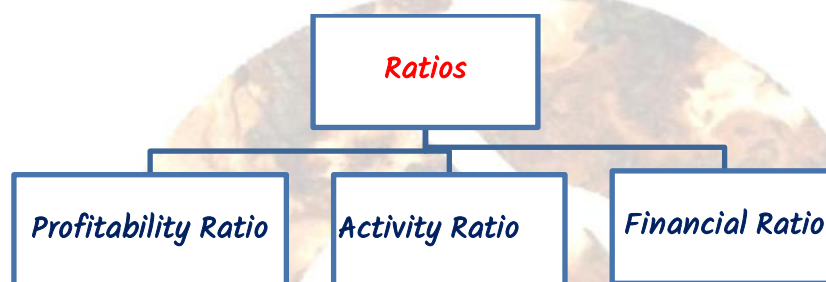


$$A = CL + \underbrace{LTD + Equity}_{\text{Capital Employed}} \rightarrow PS + ES + R \& S \rightarrow SC + R \& S \text{ (Or) } A - L$$

Current Liabilities

$$\text{Capital Employed} = LTD + Equity = A - CL$$

$$\text{Operating cost} = COGS + \text{Operating Expenses (Other than interest of tax)}$$



Profitability Ratio

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

Ex:-

$$\text{Sales} = 1,00,000$$

$$\text{COGS} = 75,000$$

Calculate G.P Ratio?

Sol:-

$$\text{Sales} - \text{COGS} = 1,00,000 - 75,000 = 25,000 \text{ (G.P)}$$

$$\text{GP Ratio} = \frac{25,000}{1,00,000} \times 100 = 25\%$$

$$\text{Operating profit ratio} = \frac{\text{Operating profit EBIT}}{\text{Sale}} \times 100$$

Ex:

$$\text{Sales} = 2,00,000$$

$$\text{COGS} = 80,000$$

$$\text{Operating} = 30,000$$

Calculate operating Profit Ratio

Sol:-

$$\begin{aligned} \text{Operating profit ratio} &= \frac{\text{Operating profit}}{\text{Sale}} \times 100 \\ &= \frac{2,00,000 - 80,000 - 30,000}{2,00,000} \times 100 \\ &= \frac{90,000}{2,00,000} \times 100 \\ &= 45\% \end{aligned}$$

$$\text{Net Profit ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

Eg:-

Sale	=	3,00,000		
COGS	=	30,000		
Interest	=	15,000		
I. Tax	=	10,000		

Calculate Net profit ratio=?

$$\text{Net Profit Ratio} = \frac{3,00,000 - 85,000 - 30,000}{3,00,000} \times 100$$

$$= \frac{150,000 - 10,000}{3,00,000} \times 100$$

$$= \frac{1,60,000}{3,00,000} \times 100$$

$$= 53.33\%$$

Operating Cost Ratio = $\frac{\text{Operating cost}}{\text{Sales}} \times 100$

100

$$= \frac{\text{COGS} + \text{Operating Expenses}}{\text{Sales}} \times 100$$

Eg:-

Sale	=	4,00,000
G.P	=	2,50,000
Operating Income	=	1,00,000

Calculate Operating Cost Ratio

Sol:-

Sale	=	4,00,000
G.P	=	2,50,000
COGS	=	1,50,000 (Sale - G.P)
O.P.E	=	1,50,000

Operating Income

Operating Cost

$$= \frac{1,00,000 \text{ (G.P.O.I)}}{\frac{\text{COGS} + \text{Operating Expenses}}{\text{Sales}}} \times 100$$

$$= \frac{1,00,000 + 50,000}{4,00,000} \times 100$$

$$= 75\%$$

(Fixed Charge Coverage Ratio) = $\frac{\text{EBIT}}{\text{Interest}}$

Eg:-

Sale	=	10 l
COGS	=	2 l
COGS	=	1,50,000 (Sale - G.P)
Operating Exp	=	80,000
Interest	=	40,000

Sol:-

Interest coverage ratio = $\frac{\text{EBIT}}{\text{Interest}}$

Calculate interest coverage ratio

Dividend Payment Ratio:

DPR = $\frac{10l - 2l - 80K}{40,000}$ = 18 times

$$\frac{\text{Dividend Per Share (dps)}}{\text{Earnings Per Share (eps)}}$$

Dividend per share = $\frac{\text{Dividend}}{\text{No of share holders}}$

NP - PD = Earnings available to all SH

Earning per share = $\frac{\text{Earning available to equity S.H}}{\text{No of E.S}}$

Eg:-

$$\text{Dividend paid} = 65,000$$

$$\text{Earnings} = 1,00,000$$

Calculate dividend payout ratio.

Example 2:-

$$\text{DPS} = 45$$

$$\text{Earnings} = 2,00,000$$

$$\text{Face Value} = \text{Equity} = \text{Share Capital} = 41$$

$$\text{Face Value} = 10, \text{ Market Value} = 100\%$$

Calculated dividend payout ratio?

Sol:-

$$\text{DPR} = \frac{\text{DPS}}{\text{EPS}} \times 100$$

$$= \frac{65,000}{1,00,000} = 65\%$$

$$\text{DPR} = \frac{\text{DPS}}{\text{EPS}} = 45 = 90\%$$

$$\begin{aligned} \text{Earning per share} &= \frac{\text{Earning available}}{\text{No. of E.G}} \\ &= \frac{\text{E.S Value}}{\text{F.O}} \\ &= \frac{2,00,000}{40,000} \\ &= \frac{41}{2} \\ &= 20,000/- \end{aligned}$$

Example 3:-

$$\text{EPS} = 200$$

$$\text{Dividend} = 50,000$$

$$\text{Market Value} = 41$$

$$\text{Face Value} = 10$$

$$\text{Market Value} = 40\%$$

Sol:-

$$\text{DPR} = \frac{\text{DPS}}{\text{EPS}} = \frac{\text{No. of S.H (Dividend)}}{200} =$$

$$\frac{\text{No. of S.H (50,000)}}{200} = \frac{41}{40}$$

$$= 50,000$$

$$= \frac{10,000}{200} \times 100$$

$$= 0.25 (0) 2.5\%$$

Dividend yield ratio:-

$$\text{DYR} = \frac{\text{DPS}}{\text{MPS}}$$

DPS = dividend per share

MPS = Market Price per share

Example 1:

EPS = 500

Dividend = 4l

Face value of equity share capital = 10l

Face value = 100

Market value Per share = 200/-

Calculate DPR, DYR ?

Sol:-

DPR = $\frac{DPS}{EPS} = \frac{40}{500} \times 100 = 8\%$

= $\frac{\text{Dividend}}{\text{No of shars}} = \frac{4l}{10l/100} = \frac{4l}{10k} 100$

= 40%

DYR = $\frac{DPS}{MPS} = \frac{40}{200} \times 100 = 20\%$

Example 2:

Profit to earnings ratio:- P/E ratio:-

P/E ratio = $\frac{MPS}{EPS} \times 100$

Example 1:

MPS = 500; EPS = 300

Sol:-

P/E ratio = $\frac{MPS}{EPS} = \frac{500}{300} = 1.67$

Calculate P/E ratio?

9. ROI = Return on Investment:-

ROI = $\frac{EBTT}{\text{Capital employed}}$
= $\frac{NP}{\text{Sales}} \times \frac{\text{Sales}}{\text{Asset}}$

Capital employed

= debt + equity

LTL + SHF

Or A-CL

Net Profit Ratio X Asset turnover ratio

Example 1:

Sales = 20l

COGS = 3l

Operating expenses = 7l

Capital employed = 5l

Sol:-

ROI = $\frac{EBIT}{EMP} = \frac{20L-3L-7L}{5L} \times 100$

= 200%

10. RONW - Return on Net worth:-

RONW = $\frac{NP}{SHF} = \frac{\text{Net Profit}}{SHF}$

Example 1:

Net Profit = 8l

Share capital = 30l

Calculate RONW?

Sol:-

RONW = $\frac{NP}{SHF} = \frac{8L}{50L (20+30L)} = 16\%$

Activity ratios

1. Overall Turnover Ratio:-

$$OTR = \frac{\text{Net Sales}}{\text{Capital employed}}$$

Example 1:

$$\text{Sales} = 10l$$

$$C.E = 10 \text{ cr}$$

Calculate OTR ?

Sol:-

$$OTR = \frac{\text{Sales}}{C.E} = \frac{10L}{10 \text{ cr}} \times 100 = 10\%$$

2. Fixed asset Turnover ratio:-

$$FATR = \frac{\text{Sales}}{F.A} \times 100$$

(Fixed Asset)

Example 1:

$$\text{Sales} = 20l$$

$$\text{Fixed Asset} = 1cr$$

Calculate fixed asset turnover ratio

Sol:-

$$\begin{aligned} FATR &= \frac{\text{Sales}}{\text{Assets}} \times 100 \\ &= \frac{20l}{1cr} \times 100 \\ &= 20\% \end{aligned}$$

Inventory

Debtor

Creditor

Promotion

Follow up

Relationship

1. Inventory Turnover:-

$$\begin{aligned} &= \frac{\text{COGS}}{\text{Avg inventory (Opening Inventory)}} \\ &= \frac{\text{Closing Inventory}}{2} \end{aligned}$$

$$\text{Days in Inventory} = \frac{365}{\text{Inventory Turnover}}$$

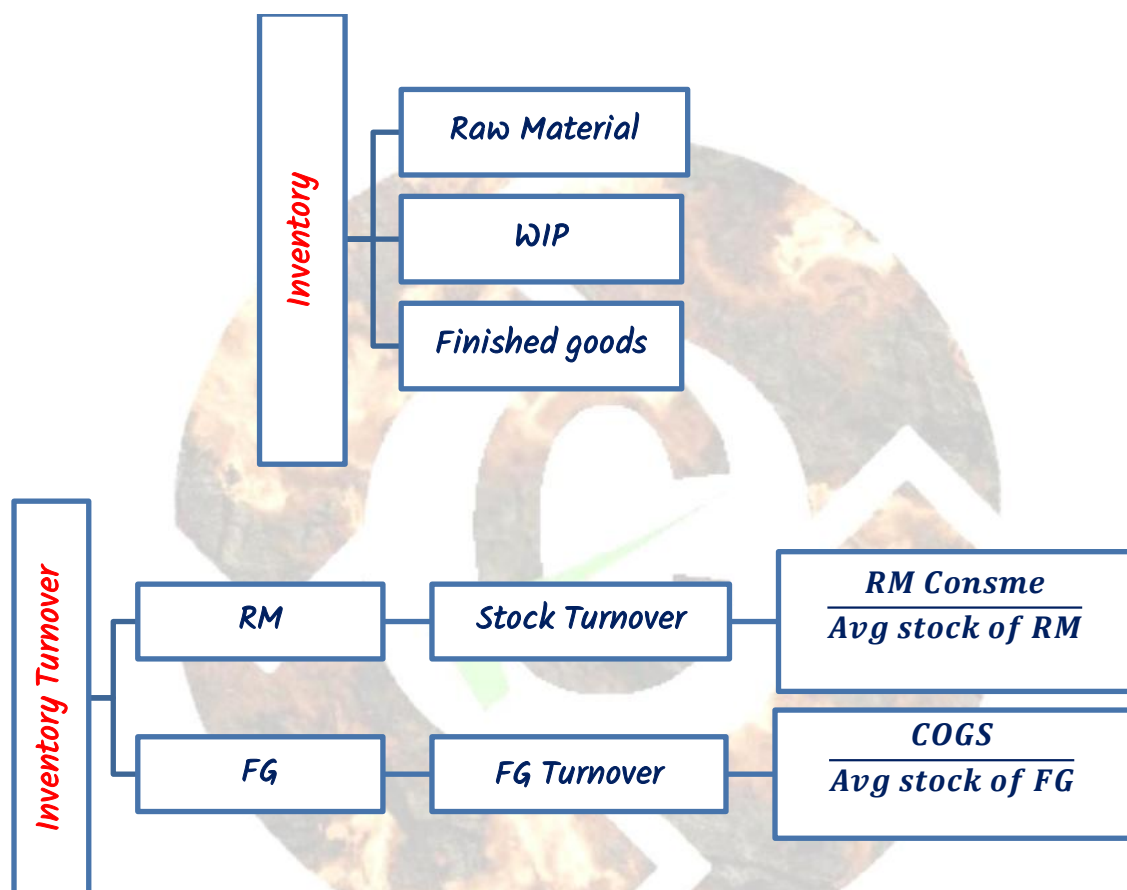
2. Debtor Turnover ratio:-

$$\text{Debtor Turnover ratio} = \frac{\text{Credit Sale}}{\text{Average debtors}}$$

$$\text{Days in debtors} = \frac{12 \text{ m}/365 \text{ days}}{\text{Debtors Turnover ratio}}$$

$$3. \text{ Creditor Turnover ratio} = \frac{\text{Credit Purchases}}{\text{Average Creditors}}$$

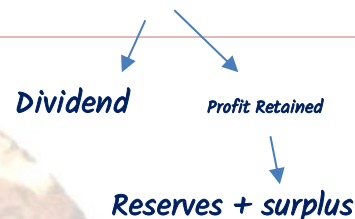
$$\text{Days in creditor (or) Creditor period} = \frac{12 \text{ m or } 365 \text{ days}}{\text{Creditor Turnover ratio}}$$



P & L A/C

Net Sales		XXXX
(-) COGS		XXXX
	Gross Profit	XXXX
(-) Operating expenses		
Admin expenses	XXXX	
Selling expenses	XXXX	XXXX
Operating income /EBIT		XXXX
(-) Other expenses		
Interest expenses	XXXX	
Loss on of Assets	XXXX	XXXX

<u>(-) Other income</u>		
<u>Dividend received</u>	<u>xxxx</u>	<u>xxxx</u>
<u>Interest income</u>	<u>Xxxx</u>	<u>Xxxx</u>
<u>PBT/EBI</u>		<u>Xxxx</u>
<u>(-) Income Tax</u>		<u>(xxxx)</u>
<u>PAT / EAT/ Net profit</u>		<u>xxxx</u>



Balance Sheet:-

Assets	=	Liabilities + SHF
CA + NCA (Or) LCA	=	CL + LTC + SHF
Current assets	=	Cash, Bank, debtors, A/R,
Inventory, prepaid expenses		
Long – current assets	=	
Tangible assets		In tangible assets
1. Land & Buildings		1. Patents
2. Plant + & Machinery		2. Copy rights
3. Furniture & fixture		3. Trade mark
4. Others		4. Goodwill (purchased)

Miscellaneous Assets → Preliminary exp, G.W (Self)

Current liabilities:-

Creditors outstanding expenses, B/p, others.

Long – Term liabilities:-

Debentures long – term loan public deposits

SHF:

Preference Share Capital

Equity Share Capital

Reserve & Surplus

Miscellaneous, liabilities – Bank OD → (If it is continuous current – liabilities)

Long – Term fund = CTL + SHF – Miscellaneous Assets.

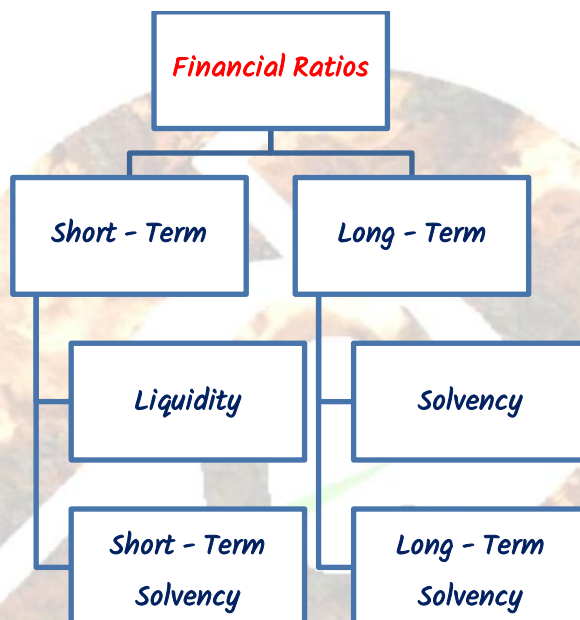
(or)

$A - CL - \text{Miscellaneous Assets.}$

$\text{Share - holder fund} = \text{P.S.E} + \text{ESF} + \text{Reserve \& Surplus} - \text{Miscellaneous Assets}$

(or)

$A - CL - LTL - \text{Miscellaneous Assets.}$



Liquidity (or) Short - Term Solvency Ratios:-

$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$

Eg 1:-

$\text{Current Assets} = 100$

$\text{Current Assets} = 85$

$\text{Current ratio} = \frac{C.A}{C.L} = \frac{80}{80} = 0.625$

Liquid ratio (or) quick ratio (or) Acid - Test ratio:-

$\text{Liquid ratio (or) Quick ratio (or) Acid test ratio}$

$= \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

(or)

$= \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$

$(\text{Liquid Assests} = CCA - \text{Inv} - \text{pre, exp})$

$\text{Liquid Liabilities} = C.L - \text{Bank OD} - \text{Cash Credit}$

Super – Quick Ratio :-

$$\text{Super Quick Ratio} = \frac{\text{Super Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Super quick ratio} = \text{CA} - \text{Deb} - \text{Inv} - \text{Pre Exp}$$

(or)

Deference – Interval ratio :-

$$\text{Defence – Interval ratio} = \frac{\text{Liquid Assets}}{\text{Daily–Cash Requirement}}$$

$$\text{Daily – Cash Requirement} = \text{Daily Required Operating Costs}$$

Debt Service Coverage Ratio :-

$$= \frac{\text{PAT} + \text{Dep} + \text{Interest}}{\text{Intrest (year)} + \text{principle Repaymant loan (year)}}$$

Long – Term Solvency:-

$$1. \text{ Fixed Assets Ratio} = \frac{\text{Net Fixed Assets}}{\text{Long Term Funds}}$$

$$2. \text{ Debt – Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Lon Term funds}} \quad (\text{or}) \quad \frac{\text{LTD}}{\text{SHF}} \quad (\text{or}) \quad \frac{\text{Debt}}{\text{Equity}}$$

$$3. \text{ Propriety Ratio} = \frac{\text{Share holder Funds}}{\text{Tangible Assets}}$$

TARGET
Academy

THE END

FUNDFLOW STATEMENT

5 Types of 'MS'

- M - Moneys
- M - Machineries; M = Material
- M - Men
- M - Method

Fund - Flow Statement Types:-

- i) Source of funds
- ii) Application of funds

Fund - Flow Statement Types:-

i) Source of funds:-

1. Issue of share capital
2. Funds from business operations (P&L adj A/c)
3. Issue of debentures
4. Taking long - Term loans
5. Sales of fixed assets, investments
6. Decreasing working capital $\rightarrow$ Current Assets - Current liabilities
7. Decrease in other assets
8. Increase in other liabilities

ii) Application of funds:-

1. Buy - back of shares
2. Redemption of debentures
3. Repayment of loan
4. Purchase of fixed assets, investments
5. Payment of dividend
6. Funds lost through business operation (P & L adj A/c)
7. Increase in working capital
8. Increase in other assets
9. Decrease in other liabilities

Working notes:-

1. Working Capital = Current Assets – Current Liabilities

2. **Dr.** **Asset A/c** **Cr.**

To Balance b/d	xxxx	By Sales (↓)	xxxx
To purchases (↑)	xxxx		
		By bal c/d	xxxx
	xxxx		xxxx

3. **Dr.** **Liabilities A/c** **Cr.**

Loan repay (↓)	xxxx	By bal b/d	xxxx
To bal c/d	xxxx	Loan Taken (↑)	xxxx
	xxxx		xxxx

P & L adj A/c

Expenses		Income	
Expenses / losses	xxxx	By Balance profit b/d	xxxx
Fund losts from business (b/f)	xxxx	Income / Receipt	xxxx
To bal c/d	xxxx	Funds gain (B/f)	xxxx
	xxxx		xxxx

QUESTION

From the following Balance Sheet of PKJ Ltd., Prepare Funds Flow Statement for 2016.

Rs.'000

Liabilities	31-3-15	31-3-16	Assets	31-3-15	31-3-16
Equity Share Capital	150	200	Goodwill	50	40
9% Redeemable Preference Share capital	75	50	Land & Buildings	100	85
Capital Reserve	—	10	Plant & Machinery	40	100
General Reserve	20	25	Investments	10	15
Profit & Loss Account	15	24	Sundry Debtors	70	85

Proposed Dividend	21	25	Stock	39	55
Sundry Creditors	13	24	Bills Receivable	10	15
Bills Payable	10	8	Cash in hand	7	5
Liability for Expenses	15	18	Cash at bank	5	4
Provision for tax	20	25	Preliminary Exp.	8	5
	339	409		339	409

Additional information:

1. A part of land was sold out in 2016, and the profit was credited to Capital Reserve.
2. A machine has been sold for Rs.5,000 (written down value of the machinery was Rs.6,000). Depreciation of Rs.5,000 was charged on plant in 2016.
3. An interim dividend of Rs.10,000 has been paid in 2016.
4. An Amount of Rs.1,000 has been received as dividend on investment in 2016.

Solution:

Fund – flow Statement:-

i) Source of funds

1. Dividend received = 1000
 2. Sale of loan = 25,000
 3. Sale of P & M = 5,000
 4. Funds from operation = 10000
- = 1,48,000**

ii) Application of funds:

1. Income in WC = 16000
 2. Payment of dividend = 2,1000
 3. Payment of interim dividend = 10,000
 4. Purchase of Machine = 71,000
 5. Purchase of Investment = 5000
 6. Redemption of P.S.C = 25,000
- = 1,48,000**

THE END

CASH – FLOW STATMENT

Statement showing movement of cash -flow

Ci.e Cash – in – flow & cash – out –flow xxx

Cash – Flow Statement:

Cash – in – flow = 550

(-) Cash – out – flow = 350

Net cash flow During the period = 250

+ Opening balance = 100

Closing balance (cash)



Cash – Flow Statement:

i) Net cash flow from operating activities (A)	xxxx
ii) Net cash flow from Investment activities (B)	xxxx
iii) Net cash flow from Financing activities (C)	xxxx
Net cash flow during period (D)	xxxx
(+) Opening cash balance (E)	xxxx
Closing cash balance (cl +e)	xxxx

Direct Method:-

Net – cash flow from operating activities:-

Cash receipt form customer & other inflow	xxxx
(-) Cash receipt from suppliers & other outflows	xxxx
Cash generated from operating activities	xxxx
(-) Income Tax paid	xxxx
Net cash from operating activities	xxxx

Indirect Method:-

Net – cash flow from operating activities:-

Net profit	xxxx
(+) Non – cash expenses	xxxx
(-) Non – cash income	xxxx
(-) Increase in current assets debtors	xxxx
(+) Decrease in current Assets	xxxx
(+) Increase in Current Liabilities	xxxx
(-) Decrease in Current Liabilities	xxxx
Net cash flow from operating activities	xxxx

Cash – Flow -Statement:-

Cash – flow from operating activities:-

Profit of current year – pf of lost year	xxxx
Non – cash expens	
Add:- Transfer to general reserve	xxxx
Proposed dividend	xxxx
Provision for tax	xxxx
Depreciation	xxxx
Amortization	xxxx
Discount on issue of debentures	xxxx
Loss on sale of asset	xxxx
Good will write off	xxxx
Provision for bad debts	xxxx
Other Cash Provision	xxxx

Non – cash income:-

Gain on sale of fixed asset	xxxx
Other Non – cash Income	xxxx

Increasing current assets:-

Increase in debtors stock	XXXX
Prepaid expenses	XXXX

Less: Item considered related to other activities (reverse) like & investing financing

Add: Decreasing in current assets

Decreasing in debtors stock, prepaid expense XXXX

Add: Increasing in current liabilities

Increases in creditors, B/P O/S expenses XXXX

Less: Decrease in current liabilities

Decreasing in creditors, B/P, O/S expenses XXXX

Cash generation O/S from O/S XXXX

(-) Income tax paid XXXX

Net cash flow from Operating activities (A) XXXX

II Net cash – flow from investing activities

inflow:-

Sale of F.A like P & M , L & B F & F	XXXX
Dividend received	XXXX
Out flow	
Payment received w.r. to loan , taken	XXXX
Purchase of F.A like P& M , L & B, F & F loans given	XXXX
Net cash flow from investing activities (B)	XXXX

III Net cash – flow from financing activities

inflow:-

Issue of shares x debentures, bonds (including premium)	XXXX
Loans taken	XXXX
Cash - outflow	
Buy – back of share	XXXX
Redemption of debenture bord	XXXX
Dividend paid	XXXX

Interest paid	xxxx
Net cash flow from financing activities (C)	xxxx
Cash flow during the period (d) (A+B+C)	
(+) Opening cash balance (e)	xxxx
Closing cash in hand a + bank	xxxx

QUESTION

Balance Sheets of a company as on 31st March, 2015 and 2016 were as follows:

Liabilities	31.03.15	31.03.16	Assets	31.03.15	31.03.16
Equity share capital	10,00,000	10,00,000	Goodwill	1,00,000	80,000
8% Pref. Share capital	2,00,000	3,00,000	Land and Building	7,00,000	6,50,000
General Reserve	1,20,000	1,45,000	Plant and Machinery	6,00,000	6,60,000
Securities Premium	---	25,000	Investments (non trading)	2,40,000	2,20,000
Profit & Loss A/c.	2,10,000	3,00,000	Stock	4,00,000	3,85,000
11% Debentures	5,00,000	3,00,000	Debtors	2,88,000	4,15,000
Creditors	1,85,000	2,15,000	Cash and Bank	88,000	93,000
Provision for tax	80,000	1,05,000	Prepaid Expenses	15,000	11,000
Proposed Dividend	1,36,000	1,44,000	Premium on Redemption of debenture	---	20,000
	24,31,000	25,34,000		24,31,000	25,34,000

Additional Information:

- Investments were sold during the year at a profit of ₹ 15,000.
- During the year an old machine costing ₹ 80,000 was sold for ₹ 36,000. Its written down value was ₹
- 45,000.
- Depreciation charged on Plant and Machinery @ 20% on the opening balance.
- There was no purchase or sale of Land and Building.
- Provision for tax made during the year was ₹ 96,000.
- Preference shares were issued for consideration of cash during the year.

You are required to prepare:

- Cash Flow Statement as per AS-3.
- Schedule of changes in Working Capital.

Solution:

- Cash Flow Statement as per AS-3.

Cash Flow Statement for the year ending 31st March, 2016

	Particulars	Amount (₹)	Amount (₹)
A	Cash flow from Operating Activities		
	Profit and Loss A/c as on 31.3.2016		3,00,000
	Less: Profit and Loss A/c as on 31.3.2015		2,10,000
			90,000
	Add: Transfer to General Reserve	25,000	

	Provision for Tax	96,000	
	Proposed Dividend	1,44,000	2,65,000
	Profit before Tax		3,55,000
	Adjustment for Depreciation		
	Land and Building	50,000	
	Plant and Machinery	1,20,000	1,70,000
	Profit on Sale of Investments		(15,000)
	Loss on Sale of Plant and Machinery		9,000
	Goodwill written off		20,000
	Interest on Debenture		33,000
	Operating Profit before Working Capital changes		5,72,000
	Adjustment for Working Capital changes:		
	Decrease in Prepaid Expenses		4,000
	Decrease in Stock		15,000
	Increase in Debtors		(1,27,000)
	Increase in Creditors		30,000
	Cash generated from Operations		4,94,000
	Income tax paid		(71,000)
	Net Cash Inflow from Operating Activities (a)		4,23,000
B	Cash flow from Investing Activities		
	Sale of Investment		35,000
	Sale of Plant and Machinery		36,000
	Purchase of Plant and Machinery		(2,25,000)
	Net Cash Outflow from Investing Activities (b)		(1,54,000)
C	Cash flow from Financing Activities		
	Issue of Preference Shares		1,00,000
	Premium received on issue of securities		25,000
	Redemption of Debentures at a premium		(2,20,000)
	Dividend paid		(1,36,000)
	Interest paid to Debenture holders		(33,000)
	Net Cash outflow from Financing Activities (c)		(2,64,000)
	Net increase in Cash and Cash Equivalents during the year (a+b+c)		5,000
	Cash and Cash Equivalents at the beginning of the year		88,000
	Cash and Cash Equivalents at the end of the year.		93,000

Working Notes:
Provision for the Tax Account
Dr.

Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank (paid)	71,000	By Balance b/d	80,000
To Balance c/d	1,05,000	By Profit and Loss A/c	96,000
	1,76,000		1,76,000

Investment Account
Dr.

Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	2,40,000	By balance (bal fig)	35,000
To profit and loss (profit on sale)	15,000	By balance c/d	2,20,000
	2,55,000		2,55,000

Plant & Machinery Account
Dr.

Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	6,00,000	By Bank (sale)	36,000
To Bank A/c (Purchase)	2,25,000	By Profit and Loss A/c (loss on sale)	9,000
		By Depreciation	1,20,000
		By Balance c/d	6,60,000
	8,25,000		8,25,000

Note:

In this question, the date of redemption of debentures is not mentioned. So, it is assumed that the debentures are redeemed at the beginning of the year

b. Schedule of change in Working Capital

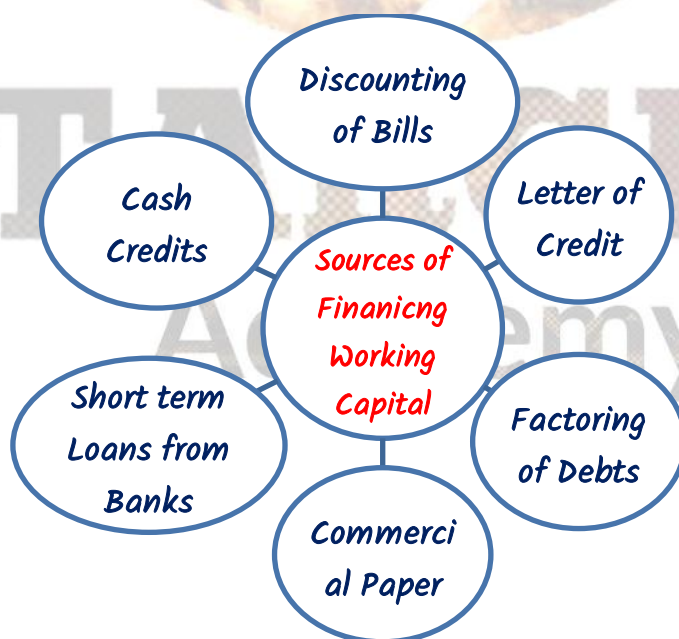
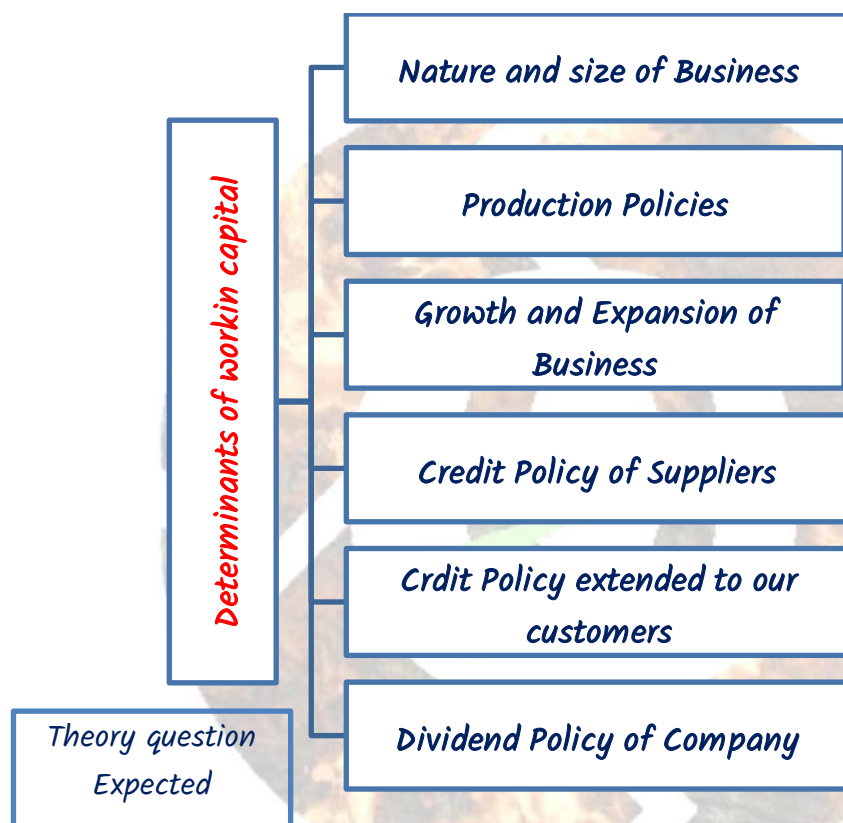
Particulars	31 March 2015 (₹)	31 March 2016 (₹)	Changes in Working Capital	
			Increase (₹)	Decrease (₹)
Current Assets				
Stock	4,00,000	3,85,000	--	15,000
Debtors	2,88,000	4,15,000	1,27,000	--
Prepaid Expenses	15,000	11,000	--	4,000
Cash and Bank	88,000	93,000	5,000	--
Total (A)	7,91,000	9,04,000		
Current Liabilities				
Creditors	1,85,000	2,15,000	--	30,000
Total (B)	1,85,000	2,15,000		
Working Capital (A-B)	6,06,000	6,89,000		83,000
Increase in Working Capital	83,000	--	--	
	6,89,000	6,89,000	1,32,000	1,32,000

THE END

PART – 3

WORKING CAPITAL MANAGEMENT

GWC (Gross Working Capital) $\longrightarrow$ Sum of Current Assets
 NWC (Net Working Capital) $\longrightarrow$ (C.A – C.L)



MPBF Norms (Maximum Permissible Bank Finance) as per Tandon Committee report is under

3 Methods are as following.

M1	$\cdot 75\% (C.A - C.L)$
M2	$\cdot [75\% (C.A)] - C.L$
M3	$\cdot [75\% (C.A - C.C.A)] - C.L$

Where,

C.A = Current Assets

C.L = Current Liabilities

C.C.A = Core Current Assets

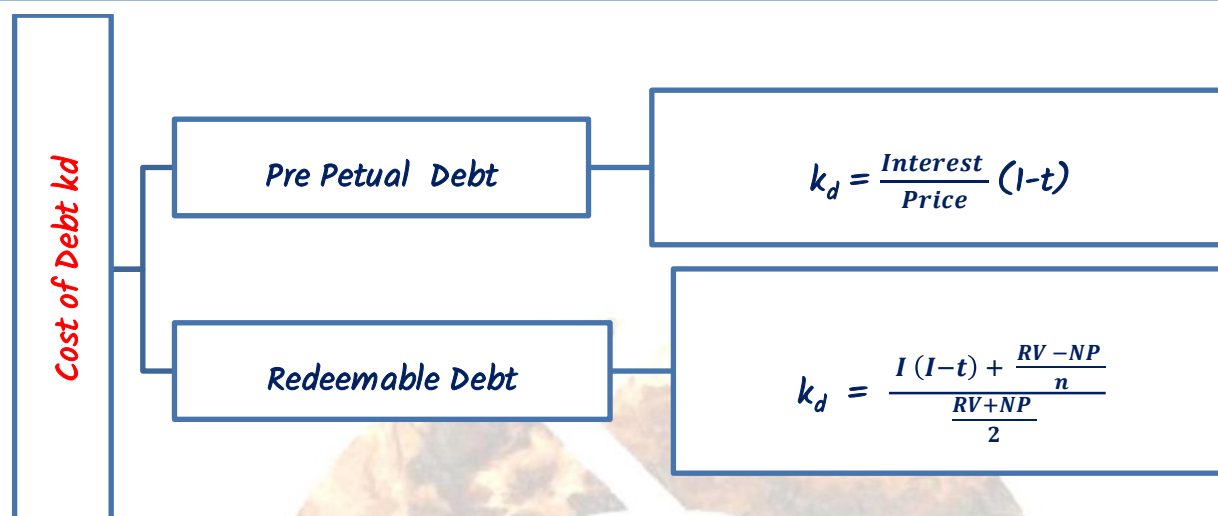
Statement showing the Evaluation of Credit Policies (based on Total Approach)

Particulars	Present Policy	Proposed Policy I	Proposed Policy II	Proposed Policy III
	Rs.	Rs.	Rs.	Rs.
A. Expected Profit				
a) Credit Sales	000	000	000	000
b) Total Cost other than Bad Debts				
i) Variable Costs	000	000	000	000
ii) Fixed Costs	000	000	000	000
	0000	0000	0000	0000
c) Bad Debts	000	000	000	000
d) Cash discount				
e) Expected Net Profit before Tax (a-b-c-d)	000	000	00	000
f) Less: Tax	000	000	000	000
g) Expected Profit after Tax	xxxx	xxxx	xxxx	xxxx
B. Opportunity Cost of Investments in Receivables locked up in Collection Period				
Net Benefits (A - B)	xxxx	xxxx	xxxx	xxxx

Note:- Opportunity Cost = $[Total\ Cost\ of\ Credit\ Sales] \times \frac{Collection\ Period}{365} \times \frac{Rate\ of\ Return}{100}$

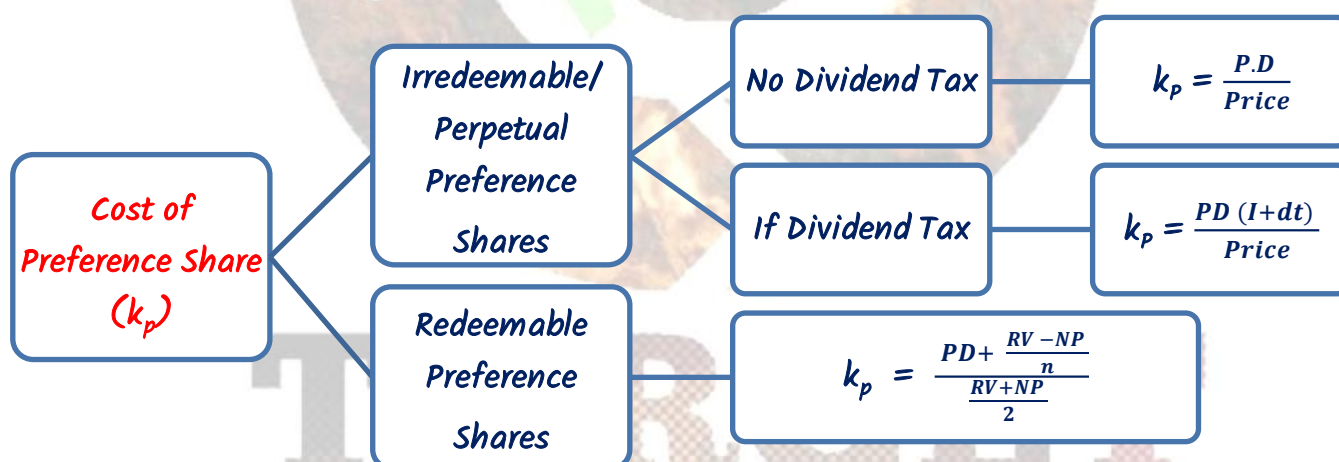
THE END

COST OF CAPITAL



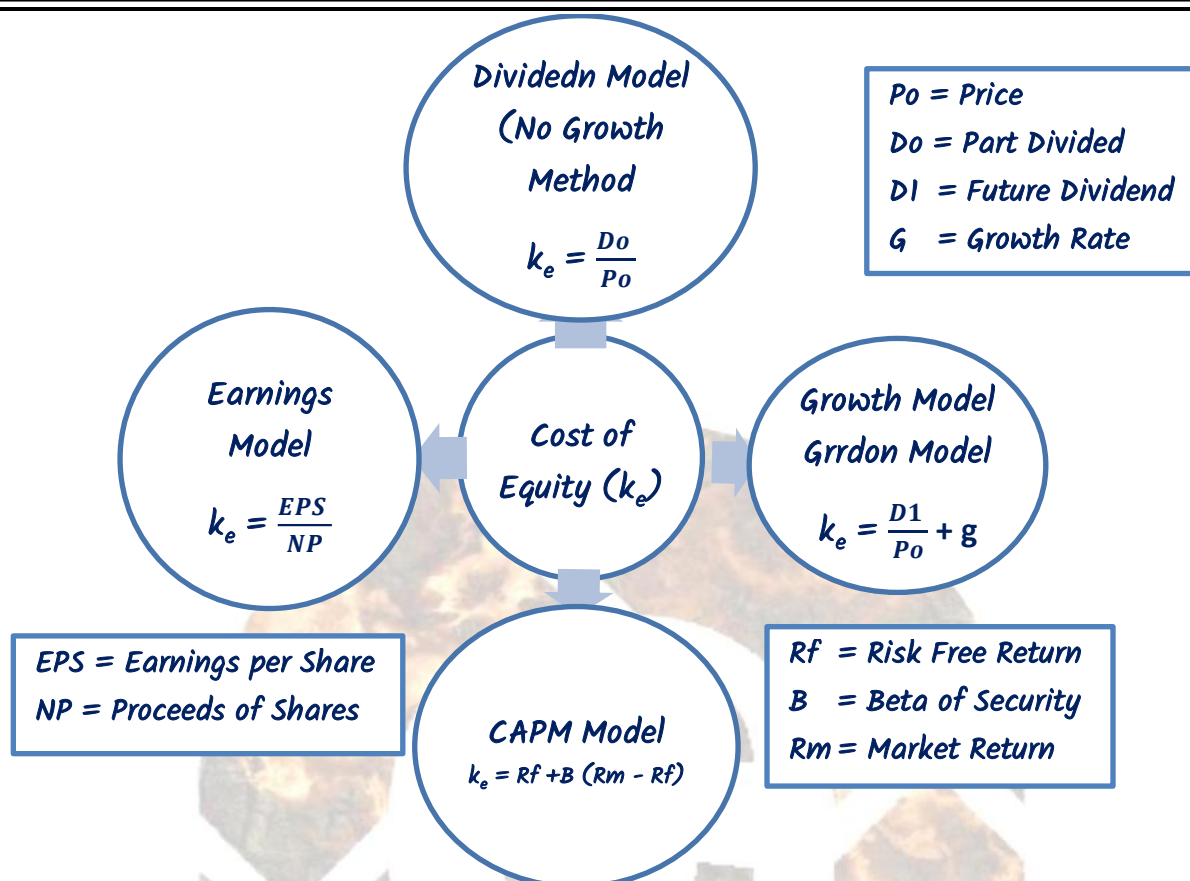
Where,

$R.V$ = Redeemable Value
 $N.P$ = Net Proceeds
 t = Tax Rate
 I = Interest
 N = Number of years



Where,

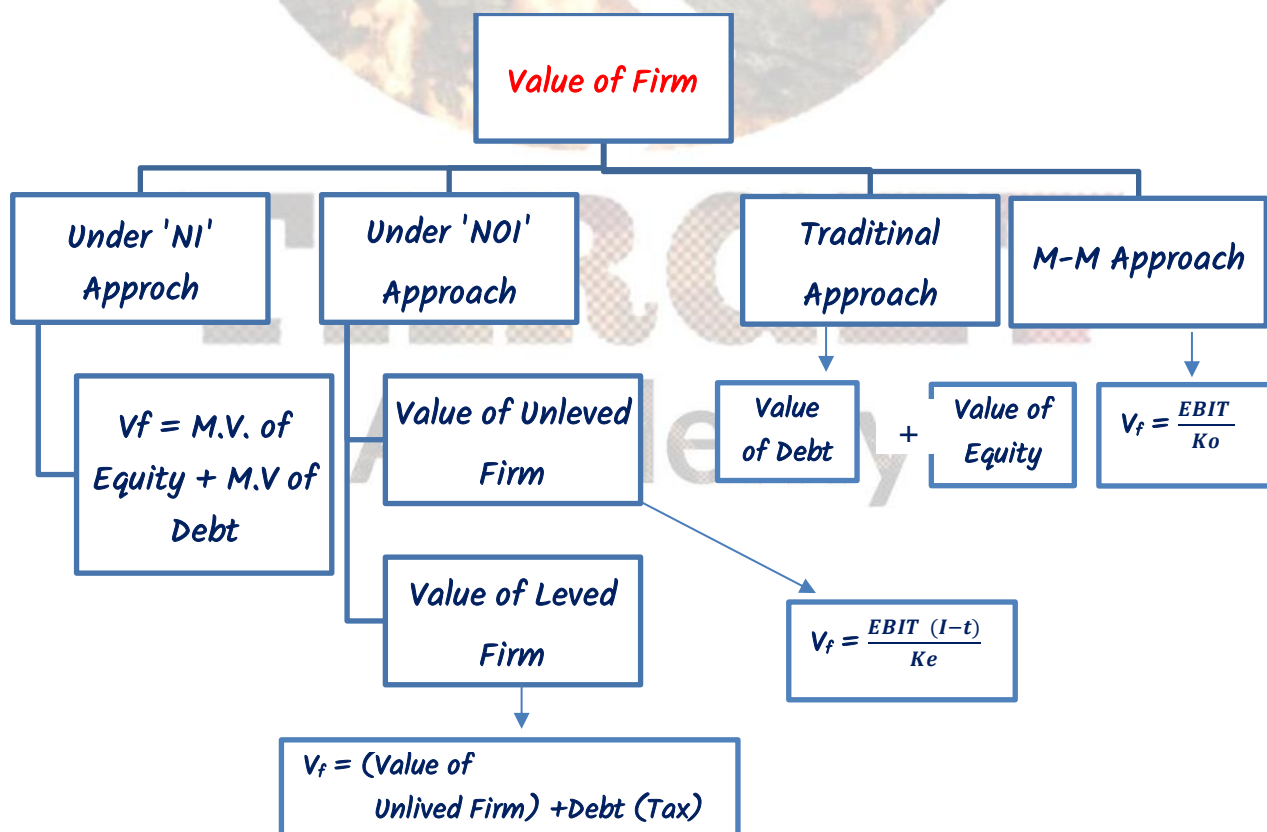
dt = Dividend Tax
 PD = Preference Dividend



WACC = $(w_e K_e) + (w_d K_d) + (w_p K_p) + (w_r K_r)$

w = Proportionate Weights

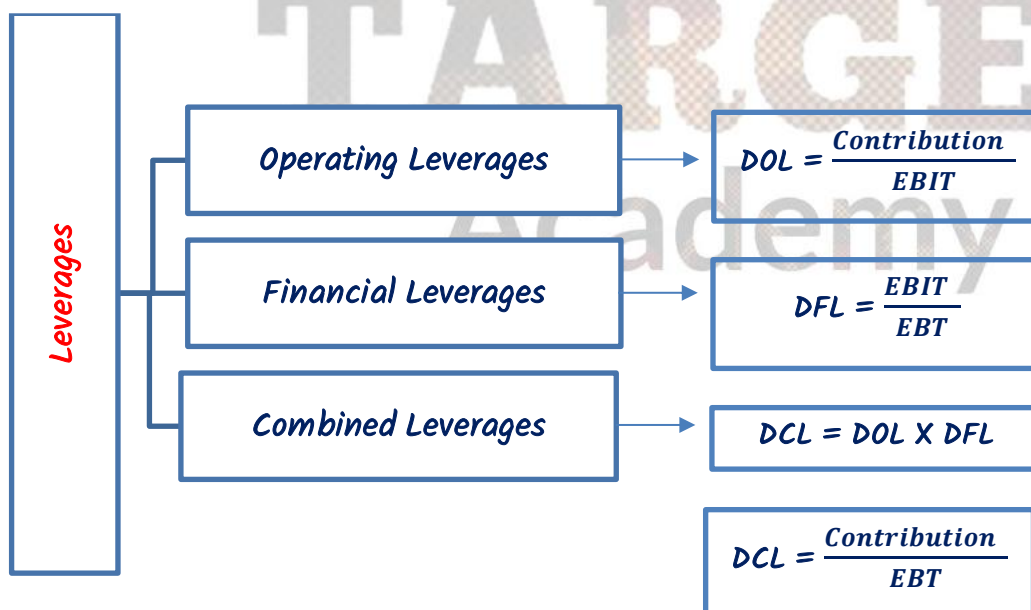
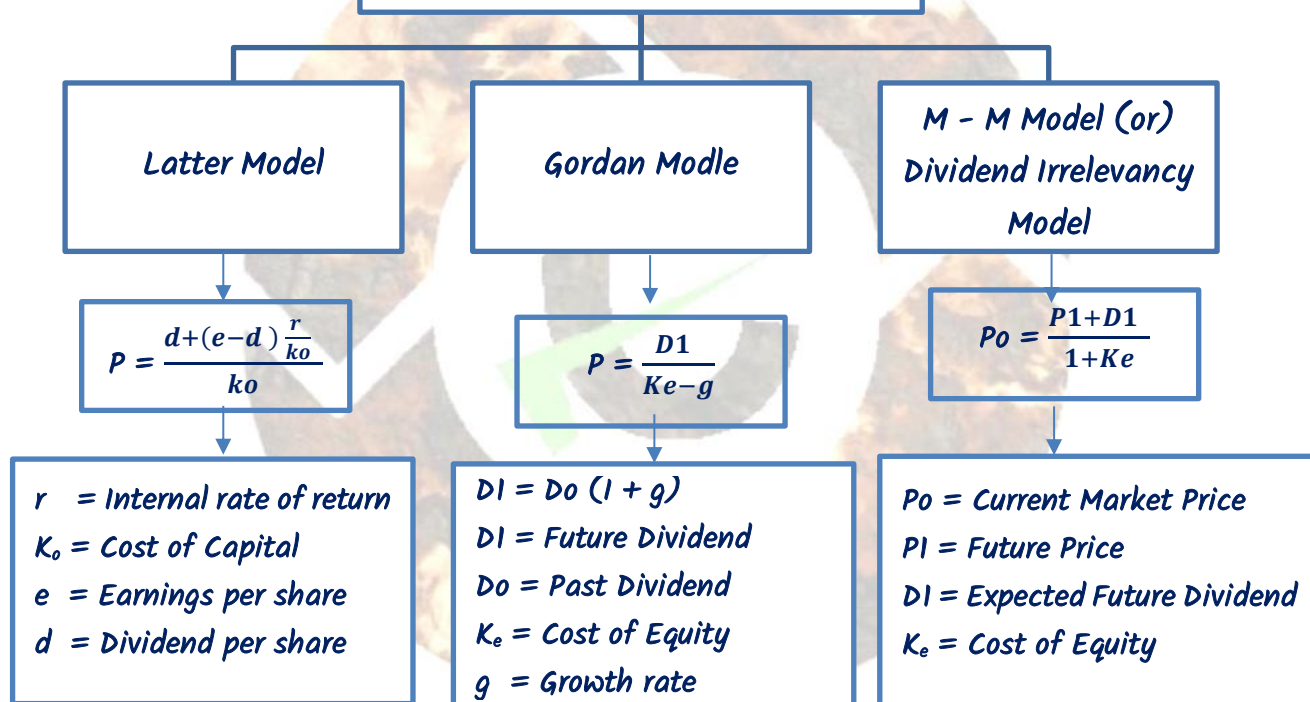
K = Respective Cost



Where,

$EBIT$ = Earnings before Interest of Tax
 K_o = Overall Cost of Capital
 T = Tax Rate
 K_e = Cost of Equity
 $M.V$ = Market Value

Calculation of Price of a Share by Following different Dividend Models as suggested



Interpretation of the Indifference Point

<i>Situation</i>	<i>Option</i>	<i>Reason</i>
<i>EBIT below Indifference Point</i>	<i>Option with lower debt (Interest Burden)</i>	1. When rate of earnings and operating profits (EBIT) are low, more interest and debt burden is not advisable. 2. A high DOL should be properly managed by low Financial Leverage.
<i>EBIT equal to Indifference Point</i>	<i>Any alternative can be chosen.</i>	<i>Same EPS due to Indifference Point.</i>
<i>EBIT above Indifference Point</i>	<i>Option with higher debt (Interest Burden)</i>	1. When EBIT is high, Financial Leverage works till the EPS is maximised. 2. Low DOL should be coupled with high DFL, to maximize gain of Equity Shareholders.

TARGET
Academy

THE END

LEVERAGE ANALYSIS

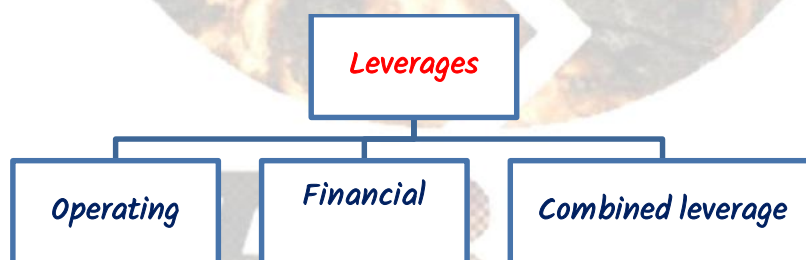
What is leverage

It is the % of change in one variable w.r.to % of change in other variable.

Leverage creates both advantage and disadvantage, leverage happens due to fixed charges.

Eg:-

	C-1	C-2	C-3
Sales	100	200	20
(-) VC	(40)	80	8
Contribution Cooperating cost	80	120	12
(-) FC	(20)	(20)	(20)
PBIT (Financing f.c)	(10)	(10)	
(-) interest			
PBT	30	90	
(-) Tax 30%	(9)	27	
PAT / NT combined effect	21	63	



$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}}$$

$$\text{Combined Leverage} = \text{Operating Leverage} \times \text{Financial Leverage}$$

QUESTION

A firm has sales of ₹ 10,00,000, variable cost of ₹ 7,00,000 and fixed costs of ₹ 2,00,000 and debt of ₹ 5,00,000 at 10% rate of interest. What are the operating, financial and combined leverages? If the firm wants to double its Earnings before interest and tax (EBIT), how much of a rise in sales would be needed on a percentage basis?

Solution:

Statement of Existing Profit

Sales	₹ 10,00,000
Less : Variable Cost	7,00,000
Contribution	3,00,000
Less : Fixed Cost	2,00,000
EBIT	1,00,000
Less : Interest @ 10% on 5,00,000	50,000
Profit before tax (PBT)	50,000

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{3,00,000}{1,00,000} = 3$$

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{PBT}} = \frac{1,00,000}{50,000} = 2$$

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{PBT}} = \frac{3,00,000}{50,000} = 6$$

Statement of Sales needed to double the EBIT

Operating leverage is 3 times i.e., 33-1/3% increase in sales volume cause a 100% increase in operating profit or EBIT. Thus, at the sales of ₹ 13,33,333, operating profit or EBIT will become ₹ 2,00,000 i.e., double the existing one.

Verification

Sales	₹ 13,33,333
Variable Cost (70%)	9,33,333
Contribution	4,00,000
Fixed Costs	2,00,000
EBIT	2,00,000

EPS – In difference Point:-

$$\begin{aligned} \text{EPS} &= \frac{\text{Earnings available to ESH}}{\text{No. E.S}} \\ &= \frac{\text{EAT} - \text{PD}}{\text{No. of E.S}} \end{aligned}$$

EO Equity Shares – Owners:-

No fixed dividend, Voting rights, High risk – High return

Preference shares – owners (%) + debt (%)

Fixed dividend, No voting rights, Medium risk – medium return

Debt:

Debentures, Term loans, Bonds

Public deposits

Low risk – low return, Fixed interest

Equates
↓
Not tax
Deductible

Preference
↓
Not tax
Deductible

Debt
↓
Tax
Deductible

Indifference point – option with higher debt

QUESTION

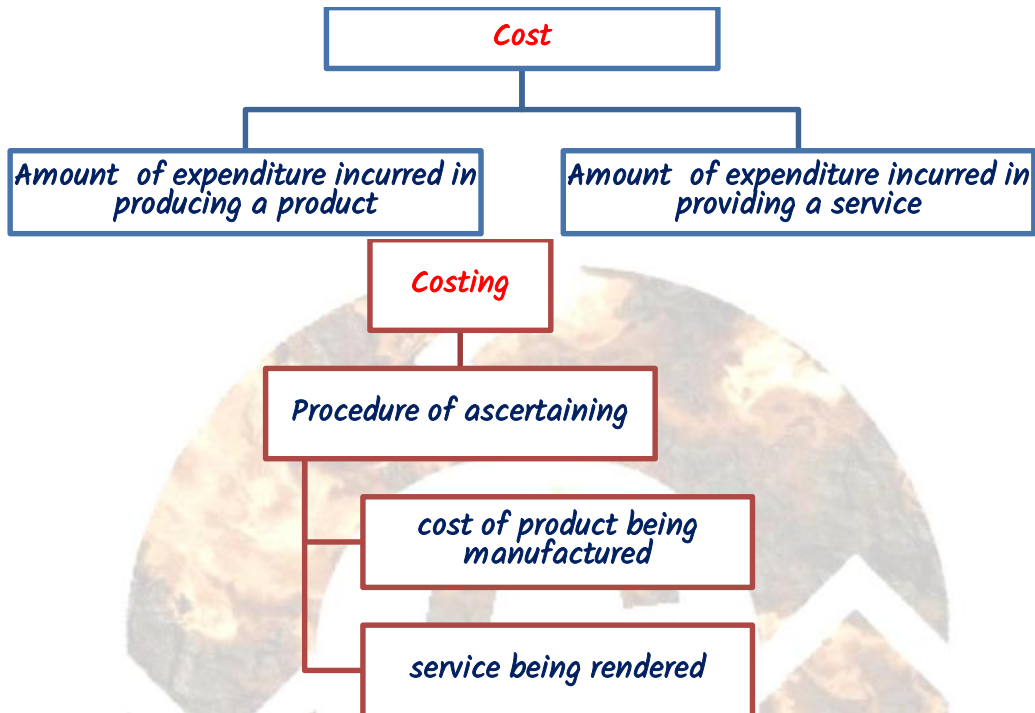
Particulars	I	II	III
EBIT			
Ex is the	60,00,000	60,00,000	60,00,000
New	40,00,000	40,00,000	40,00,000
	1,00,00,000	1,00,00,000	1,00,00,000
(-) Interest	-	(50L X 6%) 8,00,000	(50L X 6%) 8,00,000
	1,00,00,000	92,00,000	96,00,000
(-) Tax	50L	46L	48L
EAT	50L	46L	48L
(-) Preference div	-	-	-
Earnings available to ESH (a)	50L	46L	40L
No. of E.S existing	10L	10L	10L
New ES	2L (50L)	-	50,000
	25		25L 50
(b)	12L	10L	10,50,000
EPS (a/b)	4.16	4.6	4.57

Conclusion:-

As per the above calculation option – II (100% debt) is having highest EPS

THE END

COSTING BASICS

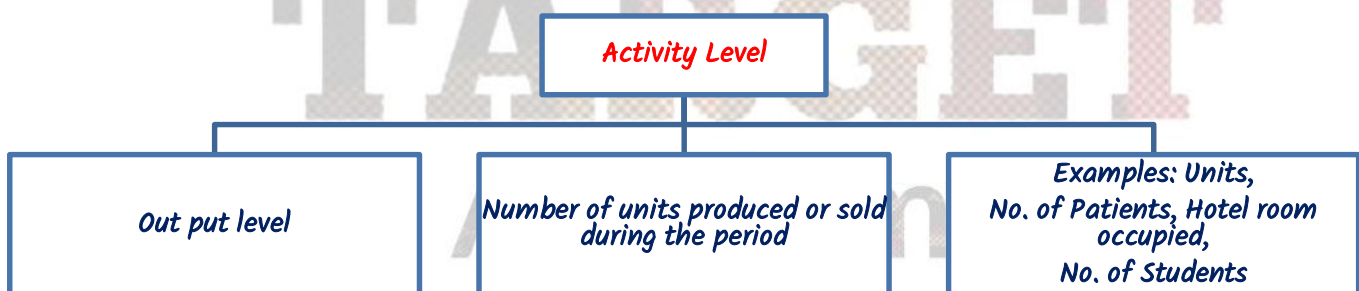


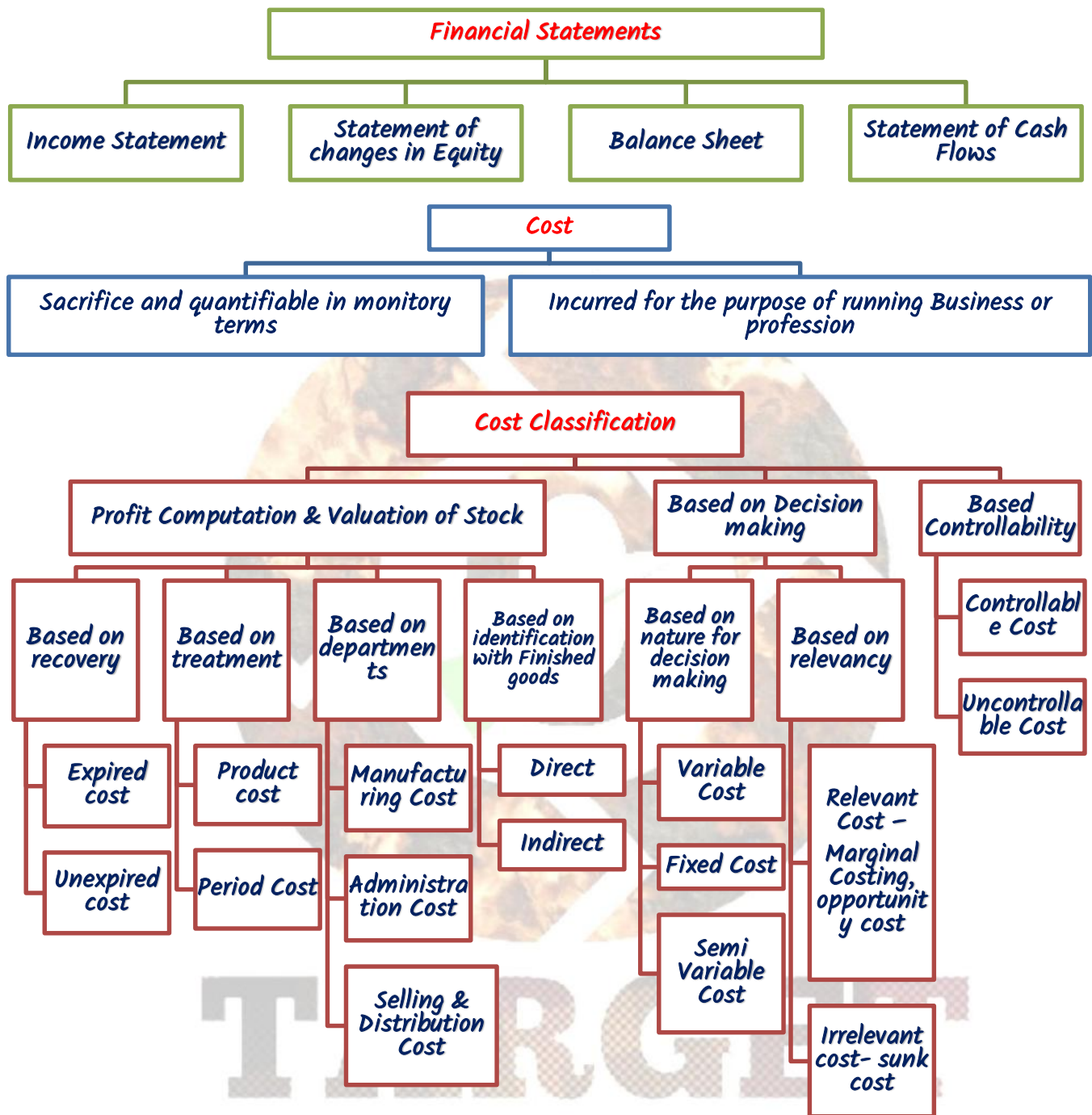
Cost Accounting:-

Process beginning with recording of income & expenditure

ending with preparation of periodical statements and reports

for controlling costs





EXPIRED COST AND UNEXPIRED COST

Expired Cost

- Recovered in current period
- E.G : COGS

Unexpired Cost

- Not recovered in relevant period
- E.G : Cost of Inventory

$$\text{Sales} - \text{COGS} = \text{Profit}$$

$$\text{Sales} - \text{Expired Cost} = \text{Profit}$$



10 Kg

Purchased @ \$. 50
\$. 500



6 kg

Sold @ \$. 80
\$. 480

Profit/Loss = ?



4 kg

PRODUCT COST AND PERIOD COST

Administration Office



Cost (100 units)

- Material = 8,000
- Labour = 6,000
- Administration expenses = 5,000
- Selling & dist Expenses = 7,000

Factory



Sales (60 Units)

- Sales = 20,000

Selling Dept



Unsold Stock (40 Units)

- Value = ?
- (unexpired)

Find Profit/ loss

Non Manufacturing

Manufacturing

Non Manufacturing

Administration

- Office expenses
- Office Rent
- Legal & Accounting
- Depreciation on office equipment
- Office Staff salaries

Period Cost

Factory

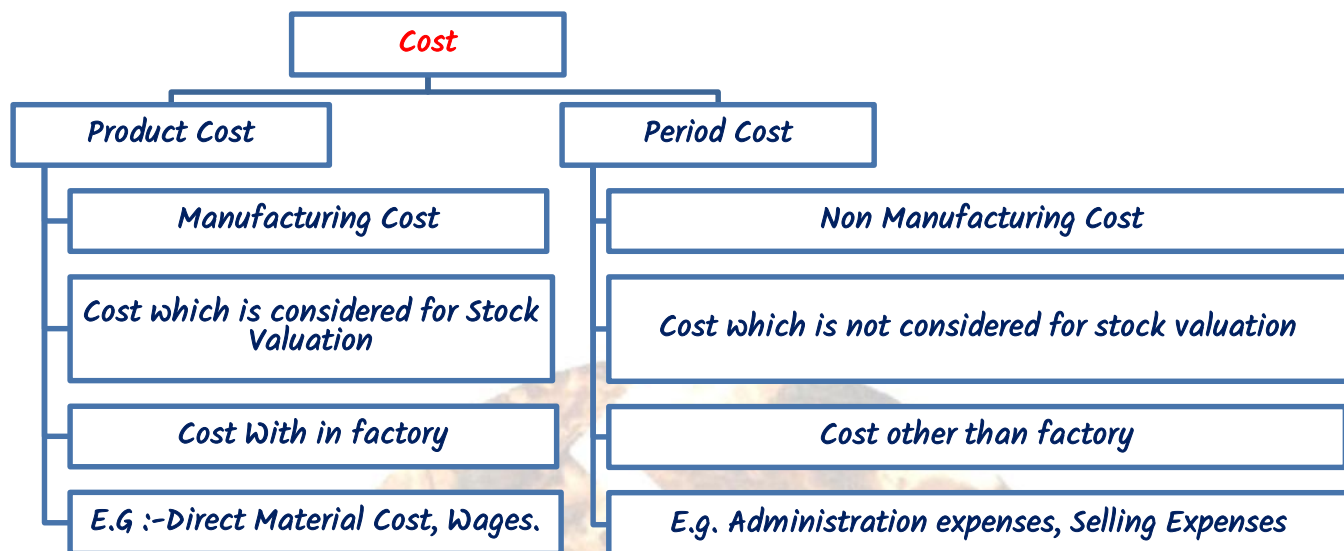
- Raw Material
- Labour
- Manufacturing Overheads – Factory rent, Power
- Freight Inwards
- (COGS)

Product Cost

Selling & Distribution

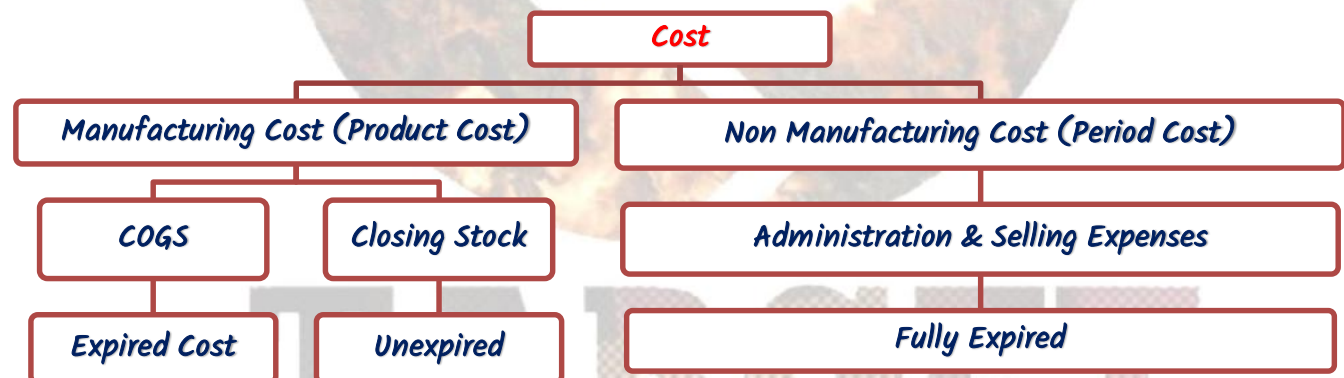
- Advertisement
- Sales Commission
- Depreciation on sales truck
- Bad Debts
- Freight Outwards

Period Cost



Cost (100 units)	Sales (60 Units)	Unsold Stock (40 Units)
- Material = 8,000 - Labour = 6,000 - Administration expenses = 5,000 - Selling & dist Expenses = 7,000	Sales = 20,000	- Value =? (unexpired)

Find Profit/ loss



Cost (100 units)	Sales (60 Units)	Unsold Stock (40 Units)
- Material = 8,000 - Labour = 6,000 - Administration expenses = 5,000 - Selling & dist Expenses = 7,000	Sales = 20,000	- Value =? (unexpired)

Find Profit/ loss

MANUFACTURING COST AND NON MANUFACTURING COST

Non Manufacturing

Manufacturing

Non Manufacturing

Administration

- Office expenses
- Office Rent
- Legal & Accounting
- Depreciation on office equipment
- Office Staff salaries

Factory

- Raw Material
- Labour
- Manufacturing Overheads – Factory rent, Power
- Freight Inwards (COGS)

Selling & Distribution

- Advertisement
- Sales Commission
- Depreciation on sales truck
- Bad Debts
- Freight Outwards

Period Cost

Product Cost

Period Cost

Elements of Cost

Material Cost

Labour Cost

Other Expenses

Direct Material

Indirect Material

Direct Labour

Indirect Labour

Direct Expenses

Indirect Expenses

Overheads

Production Overheads

Administration Overheads

Selling & Dist Overheads

Cost

Material

Labour

Manufacturing Overhead

Administration Overhead

Selling and Dist. Overhead

Product Cost

Period Cost

Allocation of cost

Plant Wide-Unit Costing

Department wide-Job Costing

ABC

DIRECT COST, INDIRECT COST

Direct Material

- Directly identified in Finished goods
- Example : wood

Direct Labour

- Directly related to Finished goods
- Example : Worker cost

Direct Expenses

- Other than Direct Material , Direct Labour which can directly attributable to Finished goods
- Example : Special cost



Direct

- Wood
- Worker

Indirect

- Rent
- Power

INDirect Material

- Not directly identified in Finished goods
- Example : lubricants for repairs

INDirect Labour

- Not directly related to Finished goods
- Example : Supervisor, officer, sales man

INDirect Expenses

- Expenses other than direct expense
- Example : Factory- power, light, Rent
- Administration – office rent, officer salary.
- Selling and Distribution – Sales man salary, commission.

Administration

- Office expenses
- Office Rent
- Legal & Accounting
- Depreciation on office equipment
- Office Staff salaries

Factory

- Raw Material
- Labour
- Manufacturing Overheads – Factory rent, Power
- Freight Inwards
- (COGS)

Selling & Distribution

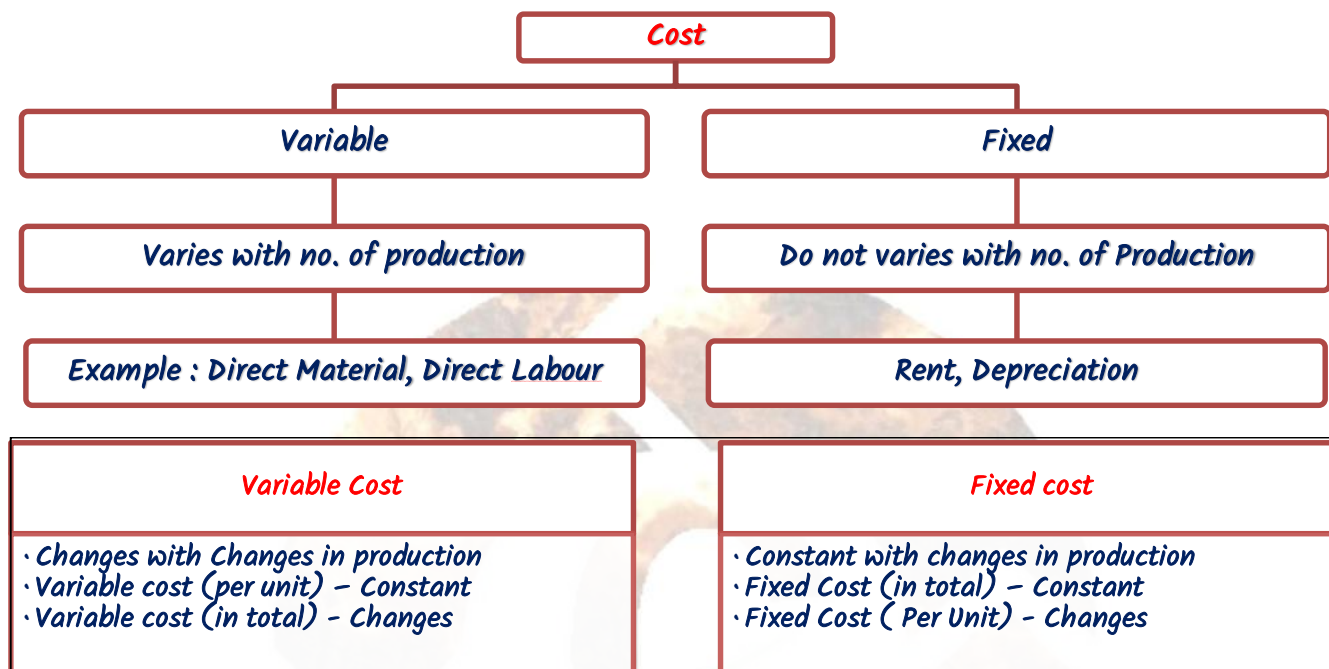
- Advertisement
- Sales Commission
- Depreciation on sales truck
- Bad Debts
- Freight Outwards

Period Cost

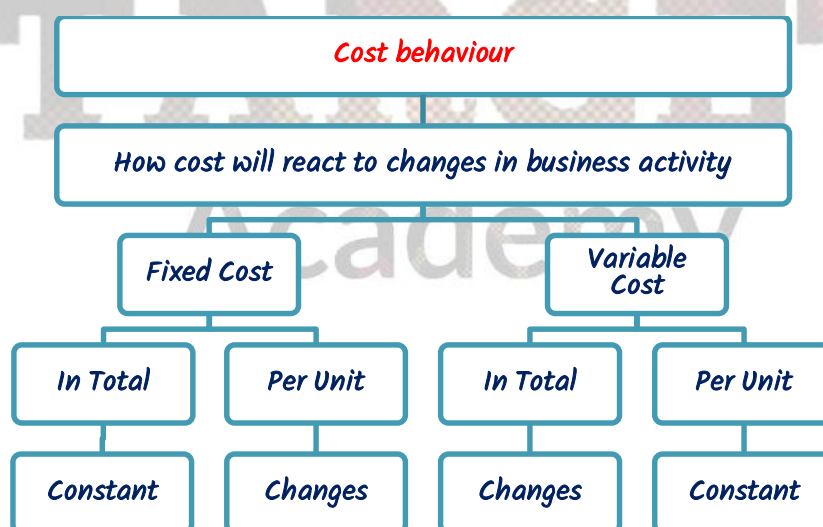
Product Cost

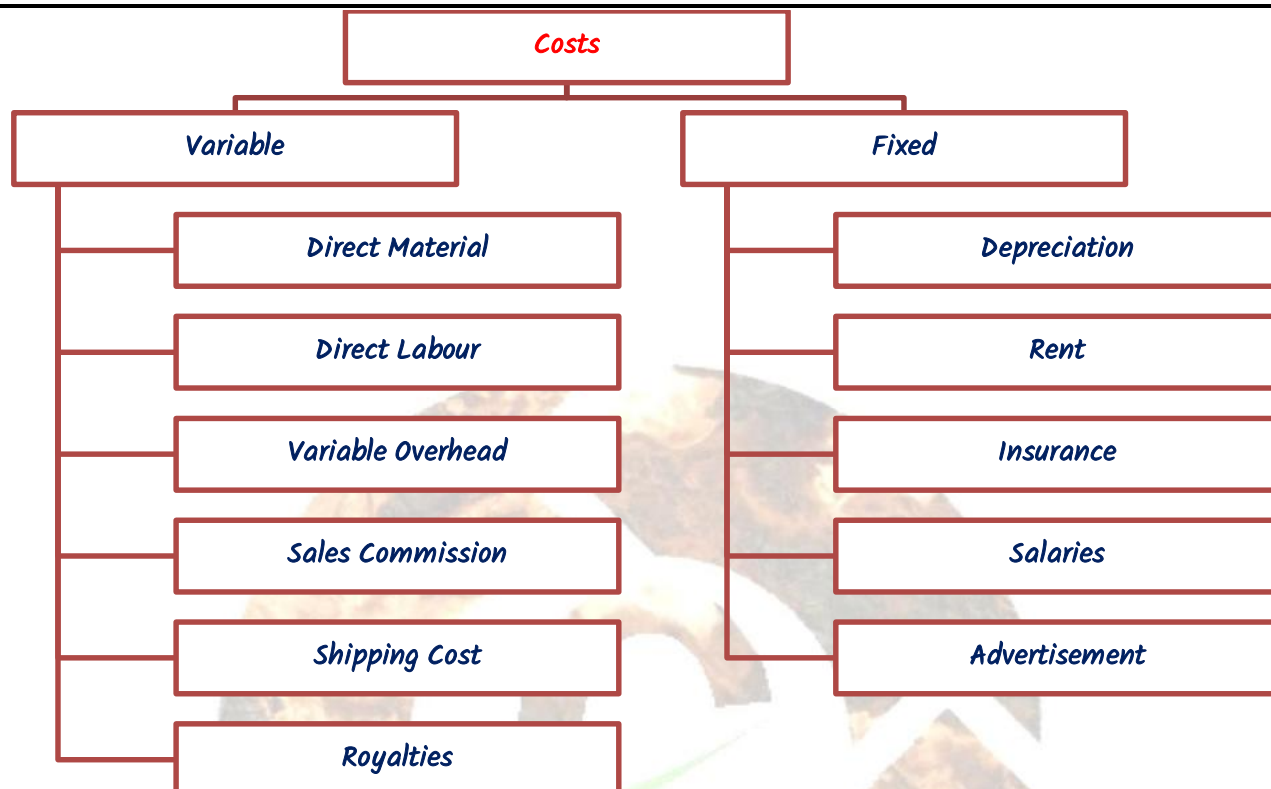
Period Cost

VARIABLE COST, FIXED COST



	10,000 units		25,000 units		50,000 units	
	Total	Per unit	Total	Per Unit	Total	Per Unit
Direct Material	16,000	1.6	40,000	1.6	80,000	1.6
Direct Labour	25,000	2.5	62,500	2.5	1,25,000	2.5
Depreciation	50,000	5	50,000	2	50,000	1
Rent	25,000	2.5	25,000	1	25,000	0.5





Particulars	10,000 units		25,000 units		50,000 units	
	Total	Per unit	Total	Per Unit	Total	Per Unit
Direct Material	16,000	1.6	40,000	1.6	80,000	1.6
Direct Labour	25,000	2.5	62,500	2.5	1,25,000	2.5
Depreciation	50,000	5	50,000	2	50,000	1
Rent	25,000	2.5	25,000	1	25,000	0.5

Semi-variable cost

- Mixture of Variable and semi variable cost

EXAMPLE

Units	Cost
1000	16,000
2000	24,000

Solution:

Segregation of semi-variable cost in to variable and fixed

Step-1

- Calculation of Variable Cost (per Unit)
- $\text{Variable Cost(Per Unit)} = \frac{\text{Change in Cost}}{\text{Change in Units}}$

Step-2

- Calculation of Total Variable Cost
- $\text{Total Variable Cost} = \text{Variable Cost(Per Unit)} \times \text{Number of Units}$

Step-3

- Calculation of Fixed Cost
- $\text{Fixed Cost} = \text{Total cost} - \text{Total Variable Cost}$

Sunk Cost

Cost incurred in past, never influences current decision making

E.G :- Research & Development Cost

Opportunity Cost

The benefit of Opportunity foregone in accepting course of action

E.G :- Own building rent

Controllable and uncontrollable Cost

Discussed in Standard Costing

COST SHEET

Particulars	Amount
Direct Raw Material Consumed	xxx
Direct Labour	xxx
Direct Expenses	xxx
	Prime Cost
Factory/ Manufacturing Over Head(Both Fixed & Variable)	xxx
	Gross Factory Cost
Add: Opening WIP	xxx
Less: Closing WIP	(xxx)

	FACTORY COST	xxx
Add: Administration Expenses (related to production)		xxx
	Cost of Production	xxx
Add: Opening Finished Goods (units x last year Cost of production)		xxx
	Cost of goods available for sale	xxx
Less: Closing Finished Goods (units x CY cost of production PU)		(xxx)
	Cost of goods sold	xxx
Add: Administration Expenses		xxx
Add: Selling & Distribution expenses (Both Fixed & Variable)		xxx
	Cost of Sales/ Total Cost	xxx
Profit (Balancing Figure)		xxx
	Sales	xxx

NOTE-1: RAW MATERIAL CONSUMED

Particulars	Units	Amount(Rs)
Opening Raw Material	xx	xxx
Add: Purchases	xx	xxx
Less: Closing Raw Material	(xx)	(xxx)
Raw Material Consumed	xx	xxx

EXAMPLE-1:

Particulars	Units	Amount
Opening Raw material	20	2,000
Purchases of Raw material	30	3,000
Closing Raw Material	15	?
Calculate Raw Material Consumed		

SOLUTION:

TARGET
Academy

EXAMPLE-2

Particulars	Units	Amount
Opening Raw material	40	2,000
Purchases of Raw material	60	3,300
Closing Raw Material	15	?
Calculate Raw Material Consumed		

SOLUTION:

EXAMPLE-3

Particulars	Units	Amount
Opening Raw material	10	500
Purchases of Raw material	35	2,100
Raw Material Consumed (FIFO)	40	?
Calculate Closing Stock of Raw Material		

SOLUTION:

EXAMPLE-4

Particulars	Amount
Opening Raw material	500
Closing Stock of Raw Material	600
Raw Material Consumed	1500
Calculate Raw Material Purchases	

SOLUTION:

PRIME COST

- PRIME COST = Raw Material Consumed + Direct Labour + Direct Expenses.

Particulars	Amount (Rs.)
Raw Material Consumed	xxx
Direct Labour	xxx
Direct Expenses	xxx
PRIME COST	xxx

EXAMPLE-5

Particulars	Amount (Rs)	Per Unit (Rs.) (No. of Units = 20)
Raw Material Consumed	5,000	
Direct Labour	3,000	
Direct Expenses	4,000	
PRIME COST		

SOLUTION:

EXAMPLE-6

Particulars	Amount (Rs)	Per Unit (Rs.) (No. of Units of FG = 20)
Opening Raw material (No. of units = 10 @ 500)		
Purchases of Raw material (No. of units = 15 @ 600)		
Closing Raw Material (No. of units = 6 @ 600)		
Raw Material Consumed		
Direct Labour	6,000	
Direct Expenses	4,000	
PRIME COST		

SOLUTION:

FACTORY COST/WORKS COST

Particulars	Amount(Rs.)
Raw Material Consumed	xxx
Direct Labour	xxx
Direct expenses	xxx
PRIME COST	
Add : Manufacturing OH/ Production OH	xxx
GROSS FACTORY COST / WORKS COST	

EXAMPLE-7:

Particulars	Amount(Rs.)
Raw Material Consumed	4,000
Direct Labour	3,000
Direct expenses	5,000
PRIME COST	
Add : Manufacturing OH/ Production OH	2500
Gross FACTORY COST / WORKS COST	

SOLUTION:

WORK IN PROGRESS

Particulars	Amount(Rs.)
Raw Material Consumed	xxx
Direct Labour	xxx
Direct expenses	xxx
PRIME COST	
Add : Manufacturing OH/ Production OH	xxx
GROSS FACTORY COST / WORKS COST	
Add: Opening WIP	xxx
Less: Closing WIP	(xxx)
FACTORY COST/WORKS COST	xxx

EXAMPLE -8:

Particulars	Amount(Rs.)
Raw Material Consumed	5,000
Direct Labour	4,000
Direct expenses	6,000
PRIME COST	
Add : Manufacturing OH/ Production OH	2500
GROSS FACTORY COST / WORKS COST	
Add: Opening WIP	600

Less: Closing WIP

700

FACTORY COST/WORKS COST

SOLUTION:

EXAMPLE-9:

Particulars	Amount(Rs.)
PRIME COST	??
Add : Manufacturing OH/ Production OH	2500
GROSS FACTORY COST / WORKS COST	
Add: Opening WIP	1800
Less: Closing WIP	600
FACTORY COST/WORKS COST	7,000

SOLUTION:

COST OF PRODUCTION

Particulars	Amount(Rs.)
Raw Material Consumed	xxx
Direct Labour	xxx
Direct expenses	xxx
PRIME COST	xxx
Add : Manufacturing OH/ Production OH	xxx
GROSS FACTORY COST	xxx
Add: Opening WIP	xxx
Less: Closing WIP	(xxx)
FACTORY COST	
Add: Administration OH (related to Production)	xxx
COST OF PRODUCTION	xxx

EXAMPLE-10:

Particulars	Amount(Rs.)
Raw Material Consumed	4,000
Direct Labour	3,000
Direct expenses	5,000
PRIME COST	
Add : Manufacturing OH/ Production OH	2,500
FACTORY COST / WORKS COST	
Add: Administration OH (related to Production)	3,500
COST OF PRODUCTION	

SOLUTION:
COST SHEET

Particulars	Amount
Direct Raw Material Consumed	xxx
Direct Labour	xxx
Direct Expenses	xxx
Prime Cost	xxx
Factory/ Manufacturing Over Head(Both Fixed & Variable)	xxx
Gross Factory Cost	xxx
Add: Opening WIP	xxx
Less: Closing WIP	(xxx)
FACTORY COST	xxx
Add: Administration Expenses (related to production)	xxx
Cost of Production	xxx
Add: Opening Finished Goods (units x last year Cost of production)	xxx
Cost of goods available for sale	xxx
Less: Closing Finished Goods (units x CY cost of production PU)	(xxx)
Cost of goods sold	xxx

COST OF GOODS SOLD
EXAMPLE-11:

Particulars	Amount(Rs.)	Per Unit (Rs.)
Raw Material Consumed	5,000	
Direct Labour	2,000	
Direct expenses	4,000	
PRIME COST		
Add : Manufacturing OH/ Production OH	2,500	
FACTORY COST / WORKS COST		

Add: Administration OH (related to Production)	4,500	
COST OF PRODUCTION (No. Of Units = 100)		
Add: Opening Stock (No. of units = 20)		
(Last year cost of Production(PU) = 100)		
Less: Closing Stock (No. of units = 40)		
COST OF GOODS SOLD (No. of Units = ?)		

SOLUTION:

EXAMPLE-12:

Particulars	Amount(Rs.)
PRIME COST	?
Add : Manufacturing OH/ Production OH	2,500
GROSS FACTORY COST / WORKS COST	?
Add: Opening WIP	600
Less: Closing WIP	900
FACTORY COST/ WORKS COST	?
Add: Administration OH (related to Production)	4,500
COST OF PRODUCTION	?
Add: Opening Stock	4,000
Less: Closing Stock	2,500
COST OF GOODS SOLD	12,000

SOLUTION:

TARGET
Academy

Non Manufacturing
Administration

- Office expenses
- Office Rent
- Legal & Accounting
- Depreciation on office equipment
- Office Staff salaries

Period Cost
Manufacturing
Factory

- Raw Material
- Labour
- Manufacturing Overheads – Factory rent, Power
- Freight Inwards
- (COGS)

Product Cost
Non Manufacturing
Selling & Distribution

- Advertisement
- Sales Commission
- Depreciation on sales truck
- Bad Debts
- Freight Outwards

Period Cost
COST SHEET

Particulars	Amount
Direct Raw Material Consumed	xxx
Direct Labour	xxx
Direct Expenses	xxx
Prime Cost	xxx
Factory/ Manufacturing Over Head(Both Fixed & Variable)	xxx
Gross Factory Cost	xxx
Add: Opening WIP	xxx
Less: Closing WIP	(xxx)
	xxx
FACTORY COST	
Add: Administration Expenses (related to production)	xxx
Cost of Production	xxx
Add: Opening Finished Goods (units x last year Cost of production)	xxx
Cost of goods available for sale	xxx
Less: Closing Finished Goods (units x CY cost of production PU)	(xxx)
Cost of goods sold	xxx
Add: Administration Expenses	xxx
Add: Selling & Distribution expenses (Both Fixed & Variable)	xxx
Cost of Sales/ Total Cost	xxx
Profit (Balancing Figure)	xxx
Sales	xxx

COST OF SALES

Particulars	Amount(Rs.)	Per Unit (Rs.)
Raw Material Consumed	5,000	
Direct Labour	2,000	
Direct expense	4,000	
PRIME COST		
Add : Manufacturing OH/ Production OH	2,500	
FACTORY COST / WORKS COST		
Add: Administration OH (related to Production)	4,500	
COST OF PRODUCTION (No. Of Units = 100)		
Add: Opening Stock (No. of units = 20) (Last year cost of Production(PU) = 100)		
Less: Closing Stock (No. of units = 40)		

COST OF GOODS SOLD (No. of Units = ?)

Add: Administration OH (General)

4,000

Add: Sales Expenses

2,000

COST OF SALES

You are required to PREPARE a cost sheet in respect of the above showing:

(i) Cost per unit

(ii) Profit for the Period

MARGINAL COSTING / DECISION ANALYSIS

Particulars	Amount
Sales	
Less: Variable cost	
Direct Material	
Direct Labor	
Variable Manufacturing Over Head	
Contribution	
Less Fixed Cost	
Fixed Manufacturing Over head	
Fixed Administration Over Head	
Fixed Selling & Distribution Over Head	
Profit	

Decision

Depends on

Incremental Cost

Particulars	Amount
Direct Material	3,000
Direct Labour	3,500
Variable Manufacturing Over Head	2,500
Fixed Manufacturing Over Head	21,000
Administration Over Head	20,000
Selling and Distribution Over Head	15,000
Sales	5,00,000

Particulars	Amount
Sales	
Less:	
Direct Raw Material Consumed	
Direct Labour	
Factory/ Manufacturing Over Head(Both Fixed & Variable)	
Product Cost	
Administration Expenses	
Selling & Distribution expenses	
Total Cost	
Profit	

Particulars	Amt
Sales	
Less: Variable cost	
Direct Material	

Direct Labor	
Variable Manufacturing Over Head	
Contribution	
Less Fixed Cost	
Fixed Manufacturing Over head	
Fixed Administration Over Head	
Fixed Selling & Distribution Over Head	
Profit	

Particulars	Amount
Direct Material	3,000
Direct Labour	3,500
Variable Manufacturing Over Head	2,500
Fixed Manufacturing Over Head	21,000
Production	150 units
Sales	100 Units
Closing Stock	50 units
Administration Over Head	20,000
Selling and Distribution Over Head	15,000
Sales	5,00,000

Particulars	Amount
Sales	
Less:	
Direct Raw Material Consumed	
Direct Labour	
Factory/ Manufacturing Over Head(Both Fixed & Variable)	
Product Cost	
Less: Closing Stock	
COGS	
Administration Expenses	
Selling & Distribution expenses	
Total Cost	
Profit	

Particulars	Amt
Sales	
Less: Variable cost	
Direct Material	
Direct Labor	
Variable Manufacturing Over Head	
Contribution	
Less Fixed Cost	
Fixed Manufacturing Over head	
Fixed Administration Over Head	
Fixed Selling & Distribution Over Head	

Absorption Costing	Marginal Costing
Fixed Manufacturing cost is considered as Product cost and considered for Inventory valuation	Fixed manufacturing cost is considered as Period/Expired Cost

Cost Driver

Any factor that effects Cost

Examples: Number of units produced, Number of units shipped

Change in cost driver will result in change in total cost

Cost Object

Anything for which cost data is accumulated

Examples: Product, Product Line, Customers, jobs, Organization Business units

Relevant Range

Range of activity

With in which variable cost, Fixed cost functions remains valid

Revenue

Inflows of assets received in exchange of products or services

Sum of price multiplied with number of units sold

Revenue Driver

Factor that effects revenue

Examples: Advertisement, Selling Price, No. of units sold

STANDARD COSTING

Standard Costing

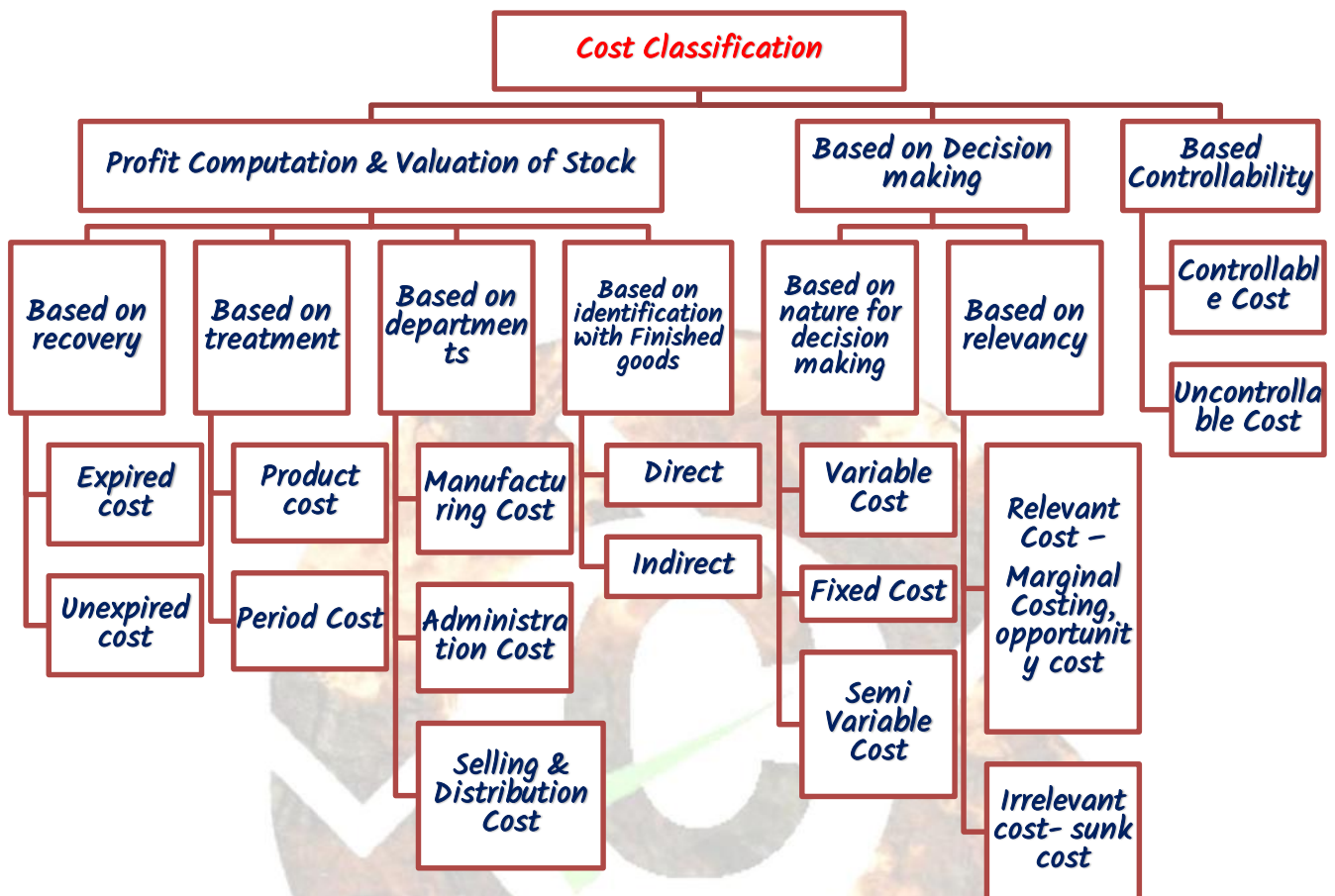
To exercise control

Budgets V/s Actuals

Finding Variances

If Abnormal Variance

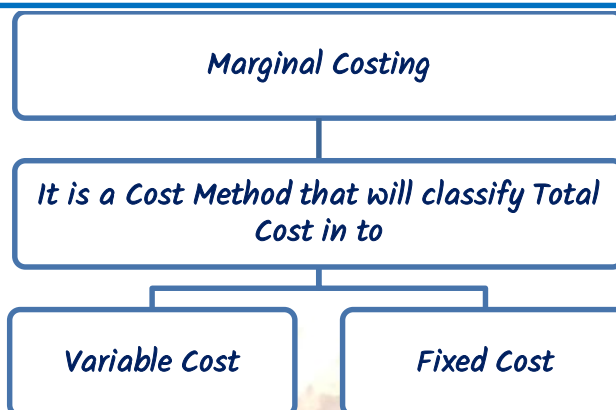
Reasons for abnormal variance



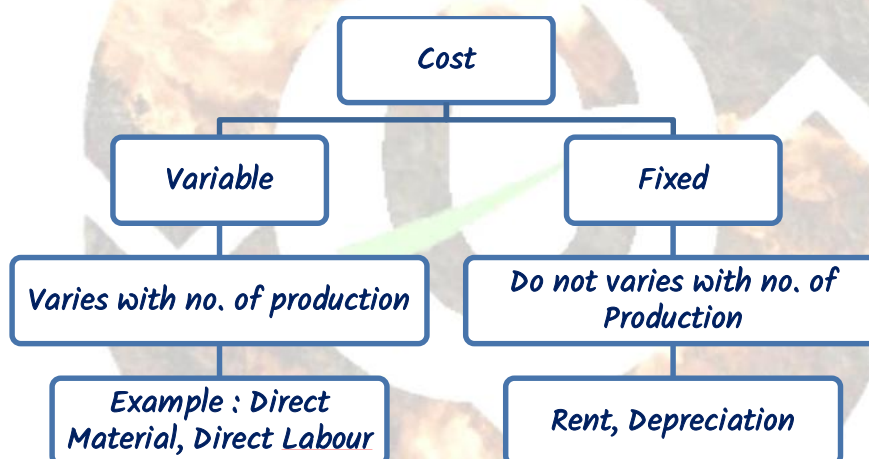
TARGET
Academy

THE END

MARGINAL COSTING



VARIABLE COST, FIXED COST



Variable Cost

- Changes with Changes in production
- 1. Variable cost (per unit) – Constant
- 2. Variable cost (in total) – Changes

Fixed cost

- Constant with changes in production
- 3. Fixed Cost (in total) – Constant
- 4. Fixed Cost (Per Unit) – Changes

EXAMPLE-1:

Units/ Activity	10,000 units		20,000 units		Nature of Cost
	Total	Per Unit	Total	Per Unit	
Material Cost	40,000		80,000		
Labour Cost	30,000		60,000		
Rent	50,000		50,000		

SOLUTION:

Semi-variable cost

- Mixture of Variable and semi variable cost

SEGREGATION OF SEMI-VARIABLE COST INTO VARIABLE AND FIXED

Step-1

- Calculation of Variable Cost (PU)
- Variable Cost (PU) = Change in Cost/Change in Units

Step-2

- Calculation of Total Variable Cost
- Total Variable cost = No. of Units (at any level) x Variable cost (PU)

Step-3

- Calculation of Fixed Cost
- Fixed Cost = Total Cost – Variable Cost

EXAMPLE-2:

Units	Cost
1000	16,000
2000	30,000

Define the nature of cost

Calculate Variable Cost (Per unit)

Calculate Fixed Cost

SOLUTION:

MARGINAL COSTING/ DECISION ANALYSIS

Particulars	Amount
Sales	
Less: Variable cost	
Direct Material	
Direct Labor	
Variable Manufacturing Over Head	
Contribution	
Less: Fixed Cost	
Fixed Manufacturing Over head	
Fixed Administration Over Head	
Fixed Selling & Distribution Over Head	

IN MARGINAL COSTING

Variable Cost is treated as Product Cost

Fixed Cost is treated as Period Cost

In Marginal Costing only Cost related to Sold units is taken in to consideration

No Opening Stock and Closing Stock

FORMULAE

$\text{Profit} = \text{Sales} - \text{Variable Cost} - \text{Fixed Cost}$

$\text{Profit} = \{\text{Sale Price (PU)} - \text{Variable Cost (PU)}\} \text{NOU} - \text{Fixed Cost.}$

EXAMPLE-3:

	Amount(Rs)	Per Unit
Sales (No. of units sold = 5,000 units)	1,00,000	
Less: Variable Cost	(60,000)	
Contribution		
Less: Fixed Cost	15,000	
Profit		

SOLUTION:

EXAMPLE-4:

	Amount(Rs)	Per Unit
Sales (No. of units sold = 10,000 units)	4,00,000	
Less: Variable Cost		24
Contribution		
Less: Fixed Cost	1,00,000	
Profit		

SOLUTION:

FORMULAE

$\text{Profit} = \{\text{Sale Price (PU)} - \text{Variable Cost (PU)}\} \text{NOU} - \text{Fixed Cost.}$

$\text{Profit} = \text{Contribution} - \text{Fixed Cost.}$

$\text{Contribution} = \text{Sales value} - \text{Variable Cost}$

$\text{Variable Cost} = \text{Sales value} - \text{Contribution}$

$\text{Sales value} = \text{Variable cost} + \text{Contribution}$

$\% \text{ of Sales} = \% \text{ of Variable Cost} + \% \text{ of Contribution}$

SOLUTION:

FORMULAE

$\text{Contribution} = \text{Sales value} - \text{Variable Cost}$

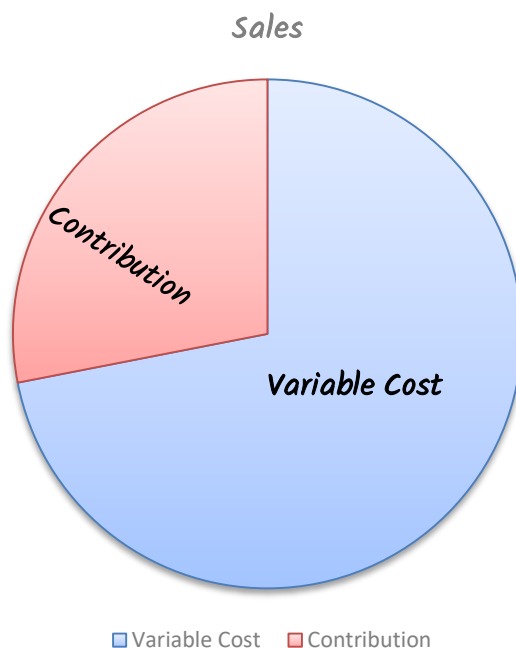
$\text{Contribution (Per Unit)} = \text{Sale Price (Per Unit)} - \text{Variable Cost (Per Unit)}$

$\text{Contribution} = \text{Fixed Cost} + \text{Profit}$

$\text{Sales value} = \text{Variable Cost} + \text{Contribution}$

$\text{Sales (100\%)} = \text{Variable Cost (\%)} + \text{Contribution (\%)}%$

SOLUTION:



EXAMPLE-5:

Particulars	Amount
Quantity Sold	10,000 Units
Selling Price (PU)	Rs. 4,000
Variable Cost (PU)	Rs. 1,000
Fixed Cost	Rs. 1,00,000
Calculate Profit	

SOLUTION:

EXAMPLE-6:

Particulars	Amount
Quantity Sold	20,000 Units
Selling Price (Per Unit)	Rs. 5,000
Variable Cost (Per Unit)	70% of Sales Price
Fixed Cost	Rs. 1,50,000
Calculate Profit	

SOLUTION:

EXAMPLE-7:

Particulars	Amount
Sales Price (Per Unit)	Rs. 70
Variable Cost (Per Unit)	70% of Sales
Calculate Contribution	

SOLUTION:

PROFIT VOLUME RATIO (P/V RATIO)

It is also known as Contribution ratio

Contribution = Sales x P/V Ratio

$$P/V \text{ Ratio} = \frac{\text{Contribution}}{\text{Sales value}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Contribution (Per Unit)}}{\text{Sales price (Per Unit)}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Sales value} - \text{Variable Cost}}{\text{Sales value}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales value}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Sales price (Per Unit)} - \text{Variable Cost (Per Unit)}}{\text{Sales price (Per unit)}} \times 100$$

$$P/V \text{ Ratio} = 1 - \% \text{ Variable Cost}$$

$$\% \text{ Variable Cost} = 1 - \% P/V \text{ Ratio}$$

$$\text{Sales (100\%)} = \% \text{ Variable Cost} + \% P/V \text{ Ratio}$$

EXAMPLE-8:

Particulars	Amount
Quantity Sold	10,000 Units
Selling Price (PU)	Rs. 4,000
Variable Cost (PU)	Rs. 1,000
Fixed Cost	Rs. 1,00,000
Calculate P/V ratio	

SOLUTION:

EXAMPLE-10:

Particulars	Amount
Selling Price	Rs. 4 Per unit
Variable Cost	Rs. 2.4 Per unit
Calculate P/V ratio	

SOLUTION:

EXAMPLE-11:

Particulars	Amount
Selling Price	Rs. 1,00,000
Variable Cost	30 %
Calculate P/V ratio	

SOLUTION:

EXAMPLE-13:

Particulars	Amount
Selling Price	Rs. 1,00,000
Variable Cost	40 %
Fixed Cost	20,000
Calculate P/V ratio	
Calculate Variable Cost	
Calculate Contribution	
Calculate Profit	

SOLUTION:

EXAMPLE-15:

Particulars	Amount
Sales	Rs. 6,00,000

P/V Ratio	40%
Fixed Cost	Rs. 2,00,000
Calculate Contribution	

SOLUTION:

BREAK EVEN POINT

Sales at which no profit and no loss

At Break even Point entire fixed cost is covered and there is no profit and no loss

$$\text{Break Even Point (in Units)} = \frac{\text{Fixed Cost}}{\text{Contribution (Per Unit)}}$$

$$\text{Break Even Point (in Value)} = \frac{\text{Fixed Cost}}{\text{p/vRatio}}$$

$$\text{Contribution(Per unit)} = \frac{\text{Fixed Cost}}{\text{BEP (in units)}}$$

$$\text{P/V Ratio} = \frac{\text{Fixed Cost}}{\text{BEP (Value)}}$$

At BEP, Contribution = Fixed Cost

$$\text{BEP(Value)} = \text{BEP(Units)} \times \text{Sales Price}$$

EXAMPLE-16:

Particulars	Amount
Quantity Sold	10,000 Units
Selling Price (PU)	Rs. 4,000
Variable Cost (PU)	Rs. 1,000
Fixed Cost	Rs. 1,00,000
Calculate Contribution per unit	
Calculate P/V Ratio	
Calculate Break Even Point (in Units)	
Calculate Break Even Point (in Rs)	

SOLUTION:

EXAMPLE-17:

Particulars	Amount
Sales	Rs. 2,00,000
Variable Cost	Rs. 60,000
Fixed Cost	Rs. 1,00,000
Calculate P/V ratio	

SOLUTION:

EXAMPLE-18:

Particulars	Amount
Selling Price (PU)	Rs. 4,000
Fixed Cost	Rs. 1,00,000
P/V Ratio	45%
Calculate Contribution (Per Unit)	

SOLUTION:

REQUIRED SALES IF DESIRED PROFIT IS GIVEN

$$\text{Required Sales (in Units)} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Contribution (Per Unit)}}$$

$$\text{Required Sales (in Value)} = \frac{\text{Fixed Cost} + \text{Profit}}{p/v \text{ Ratio}}$$

EXAMPLE-19:

Particulars	Amount
Selling Price (PU)	Rs. 200
Variable Cost	Rs. 55
No. of units	1,200
Fixed Cost	Rs. 1,00,000

Required Profit	10,000
Calculate Required Sales in units	
Calculate required sales in Value	

SOLUTION:

EXAMPLE-20:

Particulars	Amount
Selling Price (PU)	Rs. 400
Variable Cost	Rs. 112
No. of units	1,100
Fixed Cost	Rs. 2,00,000
Required Profit	10 % on sales
Calculate Required Sales in units	
Calculate required sales in Value	

SOLUTION:

EXAMPLE-21:

Particulars	Amount
Selling Price (PU)	Rs. 500
Variable Cost	40% of Sales
No. of units	1,100
Fixed Cost	Rs. 2,00,000
Required Profit	10 % on sales
Calculate Required Sales in units	
Calculate required sales in Value	

SOLUTION:

MARGIN OF SAFETY

$$\text{MOS (in Units)} = \frac{\text{Profit}}{\text{Contribution (Per Unit)}}$$

$$\text{MOS (in Value)} = \frac{\text{Profit}}{\text{p/vRatio}}$$

$$\text{Profit} = \text{MOS (units)} \times \text{Contribution (Per Unit)}$$

$$\text{Profit} = \text{MOS (Value)} \times \text{P/V Ratio}$$

$$\text{Contribution(Per Unit)} = \frac{\text{Profit}}{\text{MOS (in Units)}}$$

$$\text{P/V Ratio} = \frac{\text{Profit}}{\text{MOS (Value)}}$$

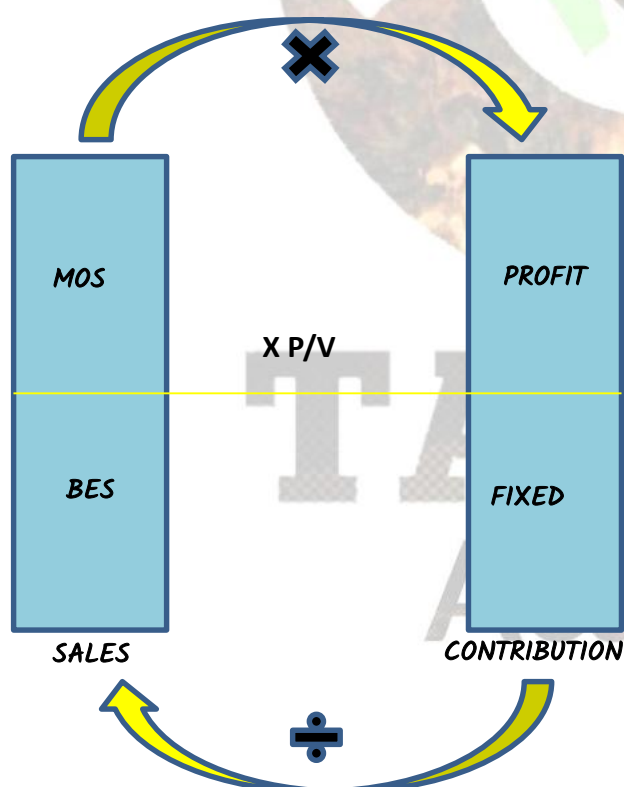
$$\text{MOS(Value)} = \text{MOS(Units)} \times \text{Sales Price}$$

MOS is the Sales in excess of BEP

It is the difference between Total sales and BEP

$$\text{MOS} = \text{Total Sales} - \text{BEP}$$

$$\text{Total Sales} = \text{BEP} + \text{MOS}$$



$$\text{Sales} \times \text{P/V Ratio} = \text{Contribution}$$

$$\frac{\text{Contribution}}{\text{p/vRatio}} = \text{Sales}$$

$$\text{Sales} = \text{BES} + \text{MOS}$$

$$\text{Contribution} = \text{Fixed Cost} + \text{Profit}$$

$$\text{BEP} \times \text{P/V Ratio} = \text{Fixed Cost}$$

$$\frac{\text{Fixed Cost}}{\text{P/VRatio}} = \text{BES}$$

$$\text{MOS} \times \text{P/V Ratio} = \text{Profit}$$

$$\frac{\text{Profit}}{\text{P/VRatio}} = \text{MOS}$$

EXAMPLE-23:

Particulars	Amount
Selling Price	Rs. 150
Variable Cost	Rs. 35

No. of units	1,000
Fixed Cost	Rs. 1,00,000
Calculate MOS in units	
Calculate MOS in Value	

$$P/V \text{ Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}}$$

SOLUTION:

EXAMPLE:

Year	Sales(₹)	Profit(₹)
20X8	1,20,000	8,000
20X9	1,40,000	13,000

Calculate:

(i) P/V ratio,

(ii) B.E. Point,

(iii) Profit when sales are ₹1,80,000,

(iv) Sales required earn a profit of ₹12,000,

(v) Margin of safety in year 20X9

$$\text{MOS Ratio or Percentage} = \frac{\text{MOS}}{\text{Total Sales}}$$

$$\text{BEP Ratio} = \frac{\text{BEP}}{\text{Total Sales}}$$

$$\text{MOS Ratio} = 1 - \text{BEP Ratio}$$

$$\text{BEP Ratio} = 1 - \text{MOS Ratio}$$

$$\text{BEP Ratio} + \text{MOS Ratio} = 1$$

SOLUTION:

RATIOS

$CMR = \text{Contribution} / \text{Sales}$

$\text{Variable Cost Ratio} = 1 - CMR$

$CMR = 1 - VC \text{ Ratio}$

$VCR + CMR = 1$

$MOS \text{ Ratio or Percentage} = MOS / \text{Planned Sales}$

$BEP \text{ Ratio} = BEP / \text{Planned Sales}$

$MOS \text{ Ratio} = 1 - BEP \text{ Ratio}$

$BEP \text{ Ratio} = 1 - MOS \text{ Ratio}$

$BEP \text{ Ratio} + MOS \text{ Ratio} = 1$

EXAMPLE-27:

Particulars	Amount
MOS Units	120 Units
BEP	Rs. 1,00,000
Sales price (Per Unit)	100
Calculate MOS in Value	
Calculate P/V Ratio	
Calculate Fixed Cost	
Calculate Profit	
Calculate Contribution (Per Unit)	
Calculate Variable Cost Ratio	
Calculate Variable Cost (Per Unit)	
Calculate Total Sales	

$\text{Profit} = [S.P(\text{Per unit}) - V.C(\text{per Unit})] \times \text{No. of Units} - \text{Fixed Cost.}$

SOLUTION:

EXAMPLE-28:

Particulars	
Investment	Rs. 10,00,000
Return on Investment	8%
Number of unit	20,000
Sales Price per unit	Rs. 20
Variable Cost Per unit	Rs.15
Fixed Cost	Rs. 35,000

Find
 (a) Existing Profit
 (b) Target Profit.
 (c) To achieve how the following will change
 (i) Selling Price (PU)
 (ii) Variable Cost (PU)
 (iii) Fixed Cost
 (iv) No. of units

Direct Material	25,000
Direct Labour	15,000
Variable OH	10,000
Fixed OH	5,000
Gross Margin	
Operating Expenses	
Variable Selling and Admin expenses	24,000
Fixed Selling and Admin expenses	20,000
Operating Income	
For next year 10% increase in sales, 15% increase in Variable cost, 30,000 increase in Fixed cost Find BEP for next year.	

SOLUTION:

STEPS IN CALCULATING WEIGHTED AVERAGE CONTRIBUTION IN CASE OF MORE

Step-1	• Calculate individual contribution
Step- 2	• Calculate weights
Step- 3	• Calculate Weighted average contribution by multiplying individual contribution x Weights

IN CASE OF MULTIPLE PRODUCTS

	Product-A (No. of Units = 45)		Product-B (No. of units = 30)		Total (No. of units = 75)	
Particulars	Per Unit	Total	Per Unit	Total		Total
Sales	180	8,100	230	6,900		15,000

Less: Variable Cost	128	5,760	183	5,490		11,250
Contribution	52	2,340	47	1,410	50	3,750

Particulars	No. of Units	Product Mix
Product-A	45	60%
Product- B	30	40%
Total	75	100%

Weighted Average Contribution = $(0.6 \times 52) + (0.4 \times 47) = 50$

This weighted average Contribution is used to calculate Overall BEP and MOS and later on divide Those BEP and

TAX IMPACT

$$PAT = PBT (1 - \text{Tax Rate})$$

$$PBT = \frac{PAT}{(1 - \text{Tax Rate})}$$

INDIFFERENCE POINT THAN ONE PRODUCTS

Sales units at which total cost is same or no difference under two options

EXAMPLE-33:

Particulars	Option-1	Option-2
Variable Cost	240	140
Fixed Cost	15,000	45,000

Calculate Indifference Point between Option-1 and Option-2

SOLUTION:

TARGET
Academy

FORMULAE

$$\text{Profit} = \{\text{Sale Price (PU)} - \text{Variable Cost (PU)}\} \times \text{No. of units} - \text{Fixed Cost.}$$

$$\text{Profit} = \text{Contribution} - \text{Fixed Cost.}$$

$$\text{Contribution} = \text{Sales value} - \text{Variable Cost}$$

$$\text{Variable Cost} = \text{Sales value} - \text{Contribution}$$

$$\text{Sales value} = \text{Variable cost} + \text{Contribution}$$

$$\% \text{ of Sales} = \% \text{ of Variable Cost} + \% \text{ of Contribution}$$

$$\text{Contribution} = \text{Sales value} - \text{Variable Cost}$$

$$\text{Contribution(Per Unit)} = \text{Sales price (Per Unit)} - \text{Variable Cost (Per Unit)}$$

$$\text{Contribution} = \text{Fixed Cost} + \text{Profit}$$

$$\text{Contribution} = \text{Sales} \times \text{P/V Ratio}$$

$$\text{Contribution(Per unit)} = \frac{\text{Fixed Cost}}{\text{BEP (in units)}}$$

$$\text{Contribution(Per Unit)} = \frac{\text{Profit}}{\text{MOS (in Units)}}$$

$$\text{Sales} = \text{Variable Cost} + \text{Contribution}$$

$$\text{Sales (100\%)} = \text{Variable Cost (\%)} + \text{Contribution (\%)}$$

$$\text{P/V Ratio} = \frac{\text{Contribution (Per Unit)}}{\text{Sales (Per Unit)}} \times 100$$

$$\text{P/V Ratio} = \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100$$

$$\text{P/V Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}} \times 100$$

$$\text{P/V Ratio} = \frac{\text{Sales(Per Unit)} - \text{Variable Cost(Per Unit)}}{\text{Sales}} \times 100$$

$$\text{P/V Ratio} = \frac{\text{Fixed Cost}}{\text{BEP (Value)}}$$

$$\text{P/V Ratio} = \frac{\text{Profit}}{\text{MOS (Value)}}$$

$$\text{P/V Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}}$$

$$\text{P/V Ratio} = 1 - \% \text{ Variable Cost}$$

$$\% \text{ Variable Cost} = 1 - \% \text{ P/V Ratio}$$

$$\text{Sales (100\%)} = \% \text{ Variable Cost} + \% \text{ P/V Ratio}$$

Academy

$$\text{Break Even Point (in Units)} = \frac{\text{Fixed Cost}}{\text{Contribution (Per Unit)}}$$

$$\text{Break Even Point (in Value)} = \frac{\text{Fixed Cost}}{p/v\text{Ratio}}$$

$$\text{At BEP, Contribution} = \text{Fixed Cost}$$

$$\text{BEP(Value)} = \text{BEP(Units)} \times \text{Sales Price}$$

$$\text{Required Sales (in Units)} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Contribution (Per Unit)}}$$

$$\text{Required Sales (in Value)} = \frac{\text{Fixed Cost} + \text{Profit}}{p/v\text{Ratio}}$$

$$\text{MOS (in Units)} = \frac{\text{Profit}}{\text{Contribution (Per Unit)}}$$

$$\text{MOS (in Value)} = \frac{\text{Profit}}{p/v\text{Ratio}}$$

$$\text{Profit} = \text{MOS (units)} \times \text{Contribution (Per Unit)}$$

$$\text{Profit} = \text{MOS (Value)} \times P/V \text{ Ratio}$$

$$\text{MOS(Value)} = \text{MOS(Units)} \times \text{Sales Price}$$

$$\text{MOS} = \text{Total Sales} - \text{BEP}$$

$$\text{Total Sales} = \text{BEP} + \text{MOS}$$

$$P/V \text{ Ratio} = \frac{\text{Contribution (Per Unit)}}{\text{Sales (Per Unit)}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Sales(Per Unit)} - \text{Variable Cost(Per Unit)}}{\text{Sales}} \times 100$$

$$P/V \text{ Ratio} = \frac{\text{Fixed Cost}}{\text{BEP (Value)}}$$

$$P/V \text{ Ratio} = \frac{\text{Profit}}{\text{MOS (Value)}}$$

$$P/V \text{ Ratio} = 1 - \% \text{ Variable Cost}$$

$$\% \text{ Variable Cost} = 1 - \% P/V \text{ Ratio}$$

$$\text{Sales (100\%)} = \% \text{ Variable Cost} + \% P/V \text{ Ratio}$$

$$\text{MOS Ratio} = 1 - \text{BEP Ratio}$$

$$\text{BEP Ratio} = 1 - \text{MOS Ratio}$$

$$\text{BEP Ratio} + \text{MOS Ratio} = 1$$

$$PAT = PBT (1 - \text{Tax Rate})$$

$$PBT = \frac{PAT}{(1 - \text{Tax Rate})}$$

$$\text{MOS Ratio or Percentage} = \frac{\text{MOS}}{\text{Total Sales}}$$

$$\text{BEP Ratio} = \frac{\text{BEP}}{\text{Total Sales}}$$

$$\text{MOS Ratio} = 1 - \text{BEP Ratio}$$

$$\text{BEP Ratio} = 1 - \text{MOS Ratio}$$

$$\text{BEP Ratio} + \text{MOS Ratio} = 1$$

$$\text{Profit Ratio} = \text{Mos Ratio} \times \text{P/V Ratio}$$

$$\text{CMR} = \text{Contribution} / \text{Sales}$$

$$\text{Variable Cost Ratio} = 1 - \text{CMR}$$

$$\text{CMR} = 1 - \text{VC Ratio}$$

$$\text{VCR} + \text{CMR} = 1$$

$$\text{MOS Ratio or Percentage} = \text{MOS} / \text{Planned Sales}$$

Decision Making

Involves choice between alternatives

Cost and Benefits of two alternatives to be evaluated

This technique is called Marginal Analysis

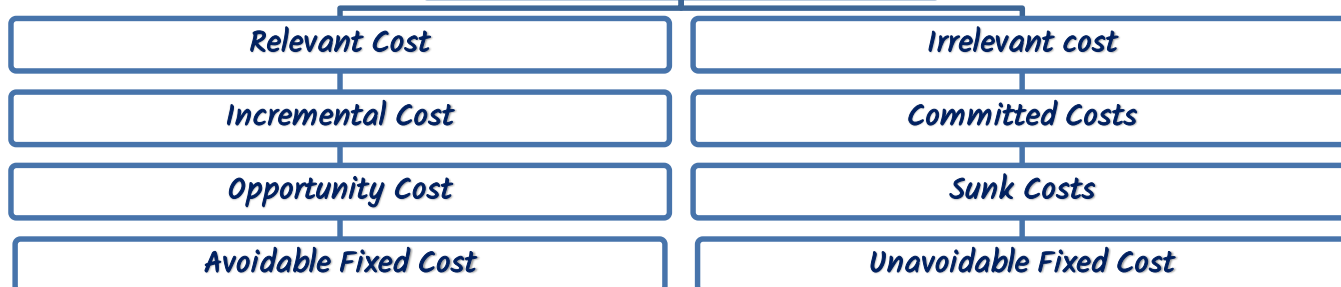
Marginal Analysis

It is also known as Incremental or Differential Analysis

Method of analyzing short term decisions (1 Year)

It emphasizes on incremental cost rather than Total Cost

Cost Classification



Cost



Opportunity Cost

Benefit lost or opportunity foregone on selection other alternative

Relevant for decision making

EXAMPLE

Particulars	Flat	Bank
Investment	10,00,000	10,00,000
Period	After 1 year	After 1 year
Return	10,80,000	11,00,000
Opportunity Cost		
Net Profit		

SOLUTION:

Sunk Cost



Marginal Costing is applied

While taking following type of decisions

Special Orders and Pricing

Make or Buy

Sell or Process further

Add or Drop a segment

Maximize contribution per unit of the Limiting Factor

SPECIAL ORDERS

Special Orders

One time and Short term Opportunity

Consider Relevant costs

Excess Capacity

Relevant Cost = Variable Cost + Avoidable Fixed Cost

Price Offered > Relevant Cost

Yes

Accept (Consider other factors like losing of present customers)

No

Reject

Operating at full capacity/ Near Capacity

Relevant Cost = Normal Sales Price (Consider Opportunity cost on loss of more profitable sales)

Price Offered > Relevant Cost

Yes

Accept

No

Reject

EXAMPLE

Selling Price (PU) = \$. 4

Variable Cost (PU) = \$. 2.75.

Fixed Cost (PU) = \$. 1

Total Cost(PU) = 3.75

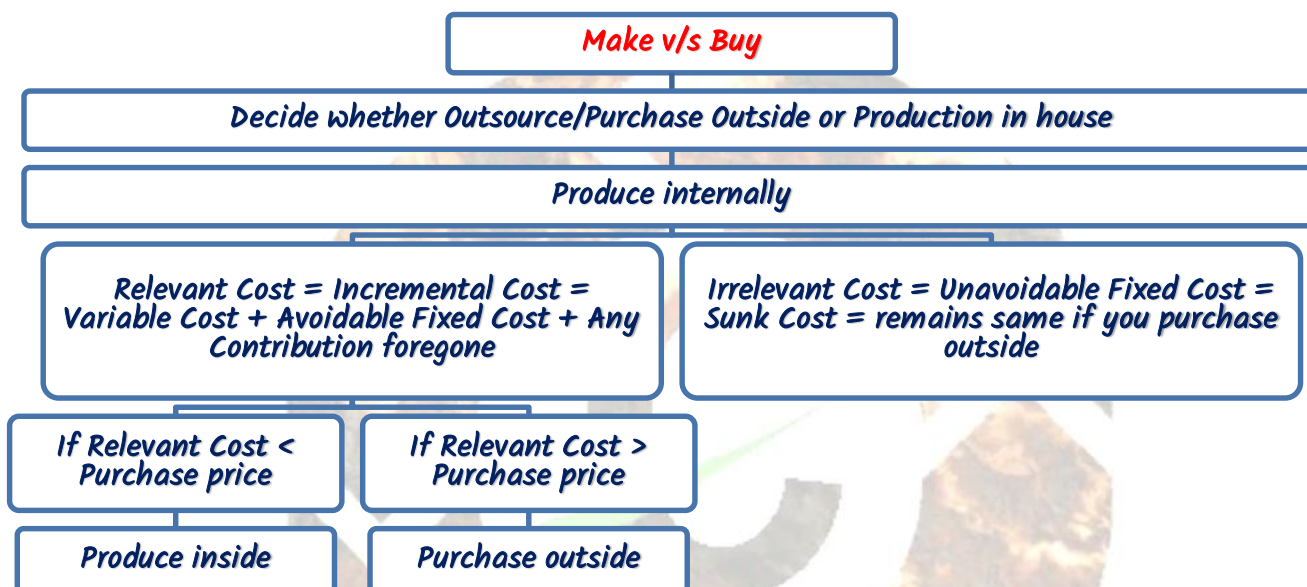
Capacity = 5,00,000 units.

Special Order = 50,000 units offered at selling price of \$. 3.50 Per unit.

Decide whether to accept the Special Order or not (i) If Entity has excess capacity (ii) If entity is operating at Full Capacity. (Find potential savings/losses also by making that choice)

SOLUTION:

MAKE OR BUY



EXAMPLE

Direct Material = \$ 2.5

Direct Labour = \$. 3.5

Variable Overhead = \$. 1.5

Fixed Overhead = \$. 1

Out side supplier Price = \$. 7.75

Relevant cost of making inside = \$. 7.5

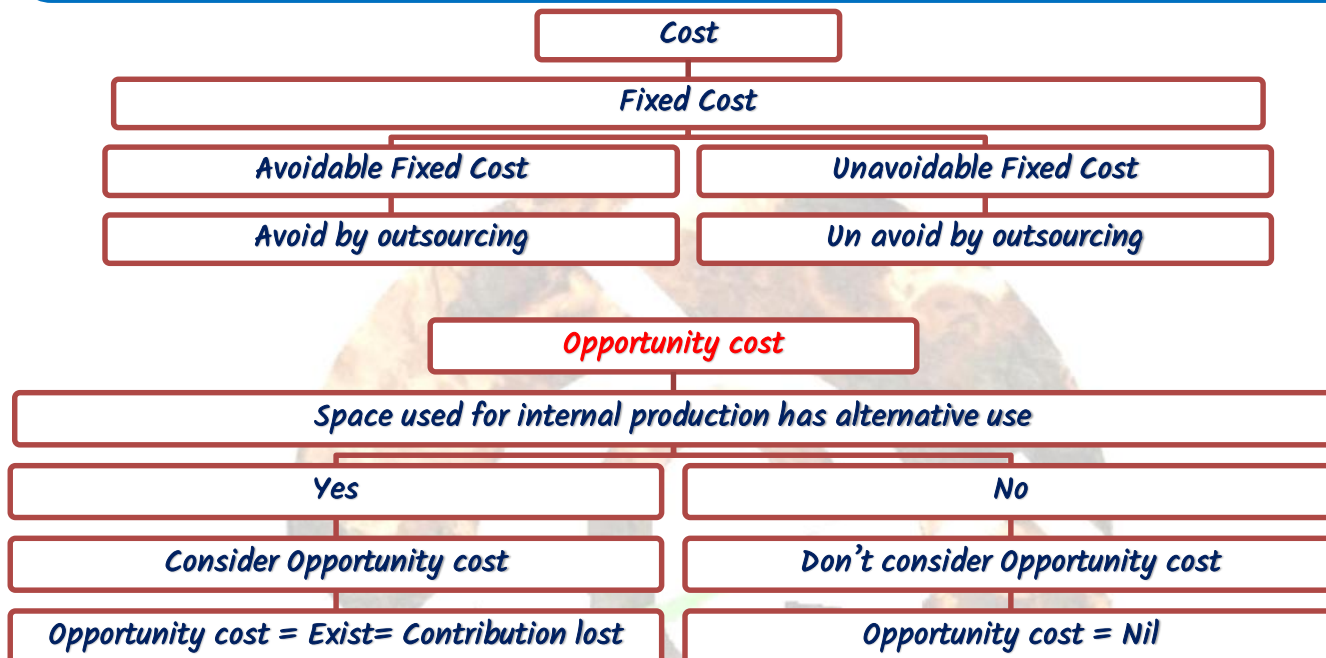
No. of Units = 5,000.

Decide whether to make or buy the product and also potential savings.

Note:

There is no discussion of revenue while taking make or buy decision, because even you make or buy from outside you sell finished product to the customer at same price

SOLUTION:



EXAMPLE

Direct Material = \$ 2.5

Direct Labour = \$. 3.5

Variable Overhead = \$. 1.5

Fixed Overhead = \$. 1

Out side supplier Price = \$. 7.75

Relevant cost of making inside = \$. 7.5

No. of Units = 5,000.

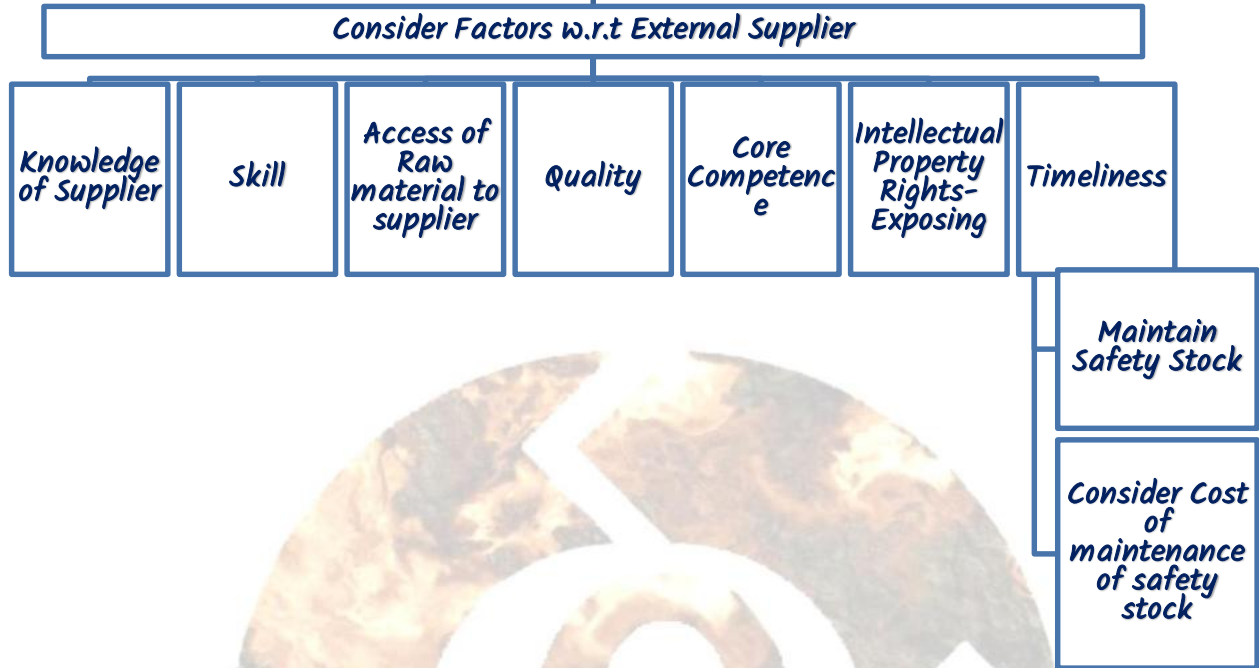
Entity can avoid 50% of fixed overhead if outsourced the product.

Entity can lease the Space of production to other company for \$. 6,000

Decide whether to make or buy the product and also potential savings

SOLUTION:

Considering Other qualitative factors in case of Buy decision



SELL OR PROCESS FURTHER

Sell or Further Process

Sell with out further process

Sell after further process

Add features to the product to enhance the functionality

Improve quality

Repair defective product

Sell or further process

Consider relevant cost

Relevant Cost

Irrelevant cost

Incremental Cost (Cost of further processing)

Already committed cost

Step-1	Identify Selling Price before Processing
Step-2	Identify Selling Price after Processing
Step-3	Calculate Incremental Revenue (i.e. Step-2 – Step-1)
Step-4	Calculate Incremental Cost (i.e. Cost of further Processing)
Step-5	Compare Incremental Revenue and Incremental Cost
Step-6	If Incremental Revenue is greater than Incremental Cost the process further

EXAMPLE

Selling price of product-A before processing = \$. 20.

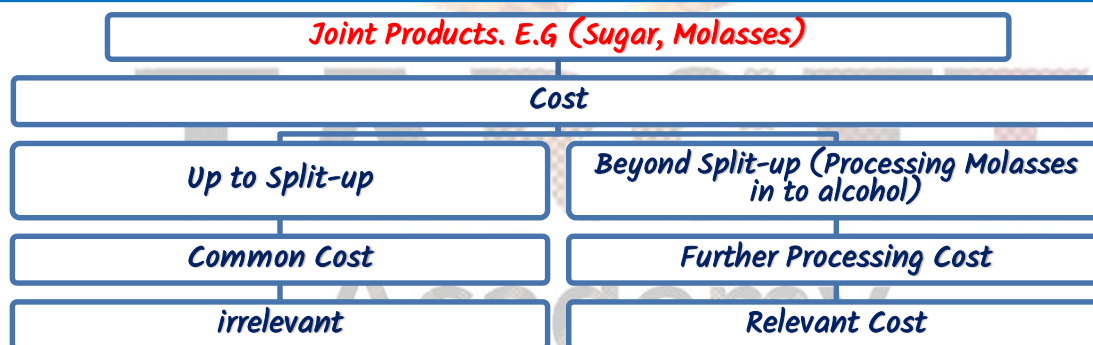
Cost of Production of Product –A is

If Product –A further processed get Product-AA. You can sell Product – AA to \$. 50.

Further Processing Cost = \$. 18.

Decide whether to further process or not

SOLUTION:



EXAMPLE

Mr. Pappu is running a sugar industry. He processed Sugar cane and got two products Sugar and Molasses.

Cost of Sugar cane is \$. 80

Cost of processing to get Sugar and molasses is \$. 30

Mr. Pappu can sell Sugar for \$. 150 and Molasses for \$. 20

If Mr. Pappu further process Molasses, he will get Alcohol which can sell for \$. 55

The further Processing Cost of Molasses is \$. 25.

Decide whether to further process or not.

SOLUTION:

ADD, KEEP OR DROP A SEGMENT

Keep or Drop Existing Product

Consider Relevant Cost

Relevant Cost

Irrelevant Cost

Avoidable Fixed Cost

Opportunity Cost

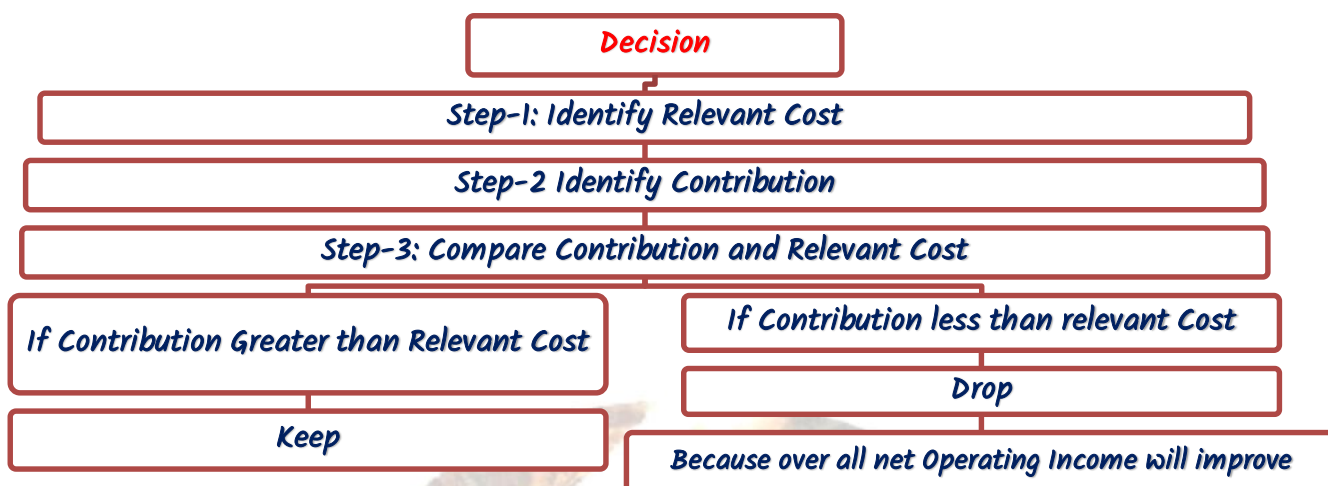
Unavoidable Cost

Traceable Fixed Cost (Fixed cost can be saved by dropping the product)

Foregone Contribution an alternative Product

Rent of space released

Common Cost



EXAMPLE

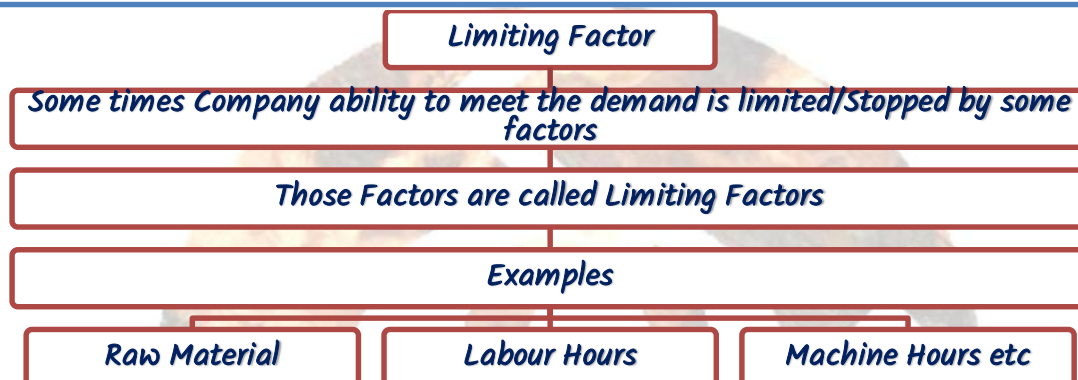
Particulars	Amount
Sales	5,00,000
Variable expenses	2,00,000
Contribution	3,00,000
Fixed expenses	
General factory overhead (common cost)	60,000
Salary of product manager	90,000
Depreciation (common cost)	50,000
Product advertising	1,00,000
Rent for factory space (Common Cost)	70,000
General administration expenses (Common Cost)	30,000
Net Loss	

Particulars	Amount
Contribution	
Avoidable Fixed Cost	

Particulars	Product-A	Overall Company	Company without Product-A
Sales	5,00,000	40,00,000	35,00,000
Variable Expenses	2,00,000	20,00,000	18,00,000
Contribution			
Fixed Expenses			
General factory overhead	60,000	6,00,000	6,00,000
Salary of product manager	90,000	4,00,000	3,10,000
Depreciation of equipment	50,000	3,00,000	3,00,000
Product advertising	1,00,000	3,00,000	2,00,000
Rent of the factory	70,000	2,00,000	2,00,000
General administration expenses	30,000	1,00,000	1,00,000
Net Loss			

SOLUTION:

LIMITING FACTOR/BOTTLE NECK CONTRIBUTION PER UNIT OF LIMITING FACTOR



Step1: Calculate Contribution per unit.

Step2: calculate Contribution per limiting factor

$$\text{Contribution per limiting factor} = \frac{\text{contribution PU}}{\text{Limiting factor PU}}$$

Example: $SP = 100$

$VC = 60$

Raw material required (PU) = 6 kgs

Raw material is the limiting factor

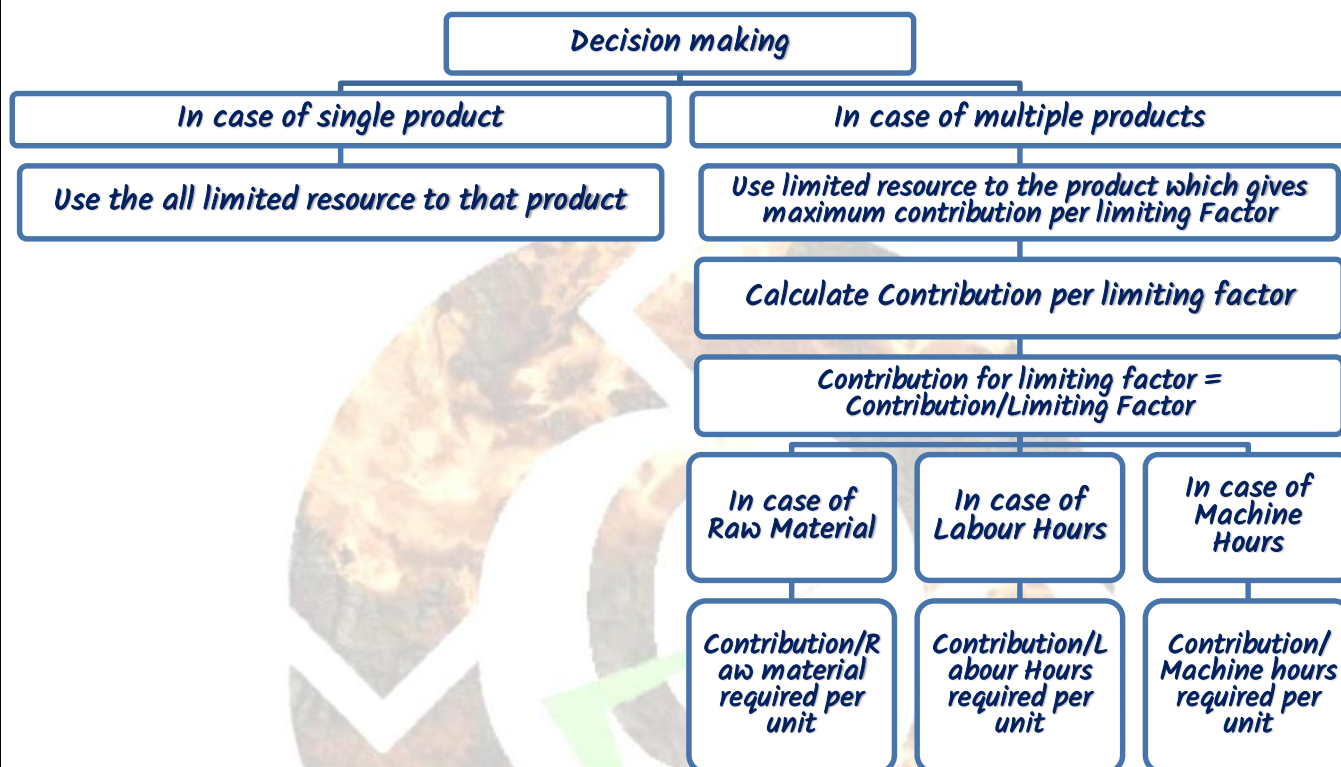
$$\begin{aligned} \text{Contribution per limiting factor} &= \frac{\text{contribution PU}}{\text{Limiting factor PU}} \\ &= (100-60)/6 \\ &= 40/6 \\ &= 6.67 \end{aligned}$$

Step3: Ranking based on contribution per limiting factor

Step4: check contribution (if only) → 1. Maximum production
2. minimum Production

1. No minimum production and no maximum demand => allocate entire RM to Rank 1
2. Maximum demand (given); but no minimum production => Allocate RM Rank 1 up to maximum demand and remaining to other ranks (one after other)
3. Maximum production (given); but no maximum demand given => Allocate RM for minimum production of all products and remaining RM to Rank 1

4. Maximum demand (given); minimum production given => Allocate RM for minimum production of all production and remaining RM to Rank 1 up to maximum demand and remaining RM to others up to maximum demand (one by one)



EXAMPLE - I

Sambar Company producing 3 products (A,B & C). It is using Pappu as raw material for all three Products: A,B,C. Raw Material (Pappu) is available is only 500 kgs (i.e. in limited quantity). Fixed cost is \$, 1000

Particulars	Product-A	Product-B	Product-C
Selling Price (PU)	100	80	60
Variable Cost (PU)	30	14	36
Raw material required per unit	5 kg	2.5 kg	4 kg
Contribution Per unit			
Contribution per Raw material kg			
Ranking			

Particulars	Product-A	Product-B	Product-C	Total
No. of Units to be produced				
Sales				
Less: Variable Cost				
Contribution				
Less Fixed Cost				
Operating Profit				

Which product should Sambar manufacture to earn highest Operating Profit?

SOLUTION:

EXAMPLE - 2

Sambar Company producing 3 products (A,B & C). It is using Pappu as raw material for all three Products: A,B,C. Raw Material (Pappu) is available is only 500 kgs (i.e. in limited quantity) . Fixed cost is \$, 1000

Particulars	Product-A	Product-B	Product-C
Selling Price (PU)	100	80	60
Variable Cost (PU)	30	14	36
Raw material required per unit	5 kg	2.5 kg	4 kg
Demand	32 units	120 units	100 units
Contribution Per unit			
Contribution per Raw material kg			
Ranking			

Particulars	Product-A	Product-B	Product-C	Total
No. of Units to be produced				
Sales				
Less: Variable Cost				
Contribution				
Less Fixed Cost				
Operating Profit				

Which product should Sambar manufacture to earn highest Operating Profit?

SOLUTION:

EXAMPLE - 3

Sambar Company producing 3 products (A,B & C). It is using Pappu as raw material for all three Products: A,B,C. Raw Material (Pappu) is available is only 500 kgs (i.e. in limited quantity) . Fixed cost is \$, 1000

Particulars	Product-A	Product-B	Product-C
Selling Price (PU)	100	80	60
Variable Cost (PU)	30	14	36
Raw material required per unit	5 kg	2.5 kg	4 kg
Minimum units to be produced	20 units	20 units	20 units
Contribution Per unit			

Contribution per Raw material kg				
Ranking				
Particulars	Product-A	Product-B	Product-C	Total
No. of Units to be produced				
Sales				
Less: Variable Cost				
Contribution				
Less Fixed Cost				
Operating Profit				

Which product should Sambar manufacture to earn highest Operating Profit?

SOLUTION:

EXAMPLE - 4

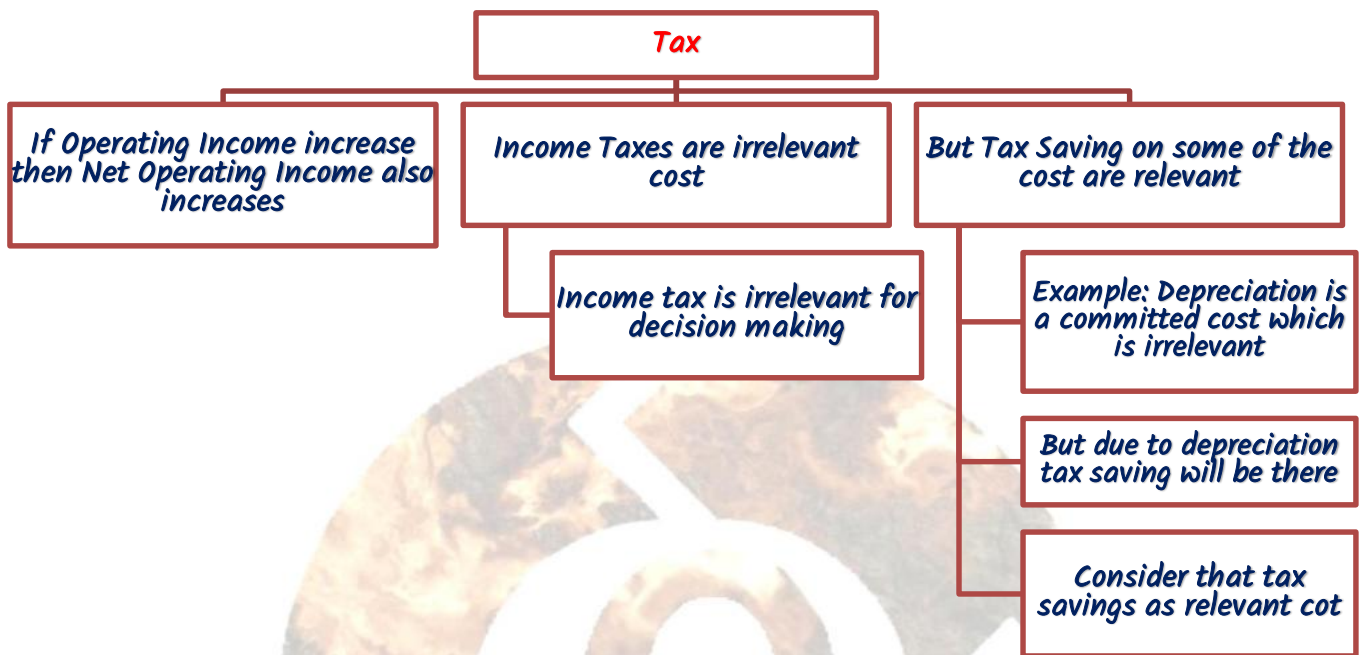
Sambar Company producing 3 products (A,B & C). It is using Pappu as raw material for all three Products: A,B,C. Raw Material (Pappu) is available is only 500 kgs (i.e. in limited quantity) . Fixed cost is \$, 1000

Particulars	Product-A	Product-B	Product-C
Selling Price (PU)	100	80	60
Variable Cost (PU)	30	14	36
Raw material required per unit	5 kg	2.5 kg	4 kg
Demand	32 units	120 units	100 units
Minimum units to be produced	20 units	20 units	20 units
Contribution Per unit			
Contribution per Raw material kg			
Ranking			

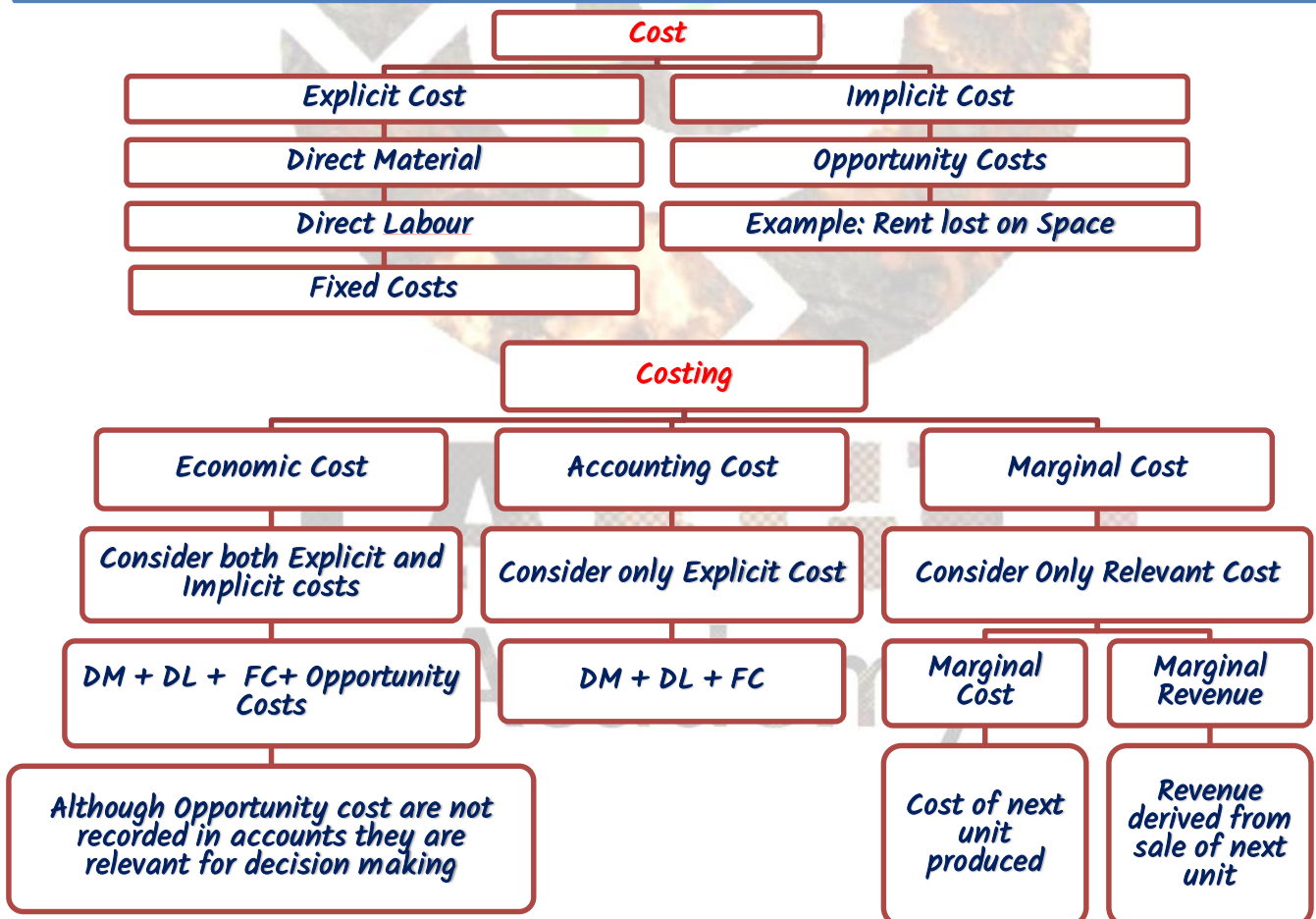
Particulars	Product-A	Product-B	Product-C	Total
No. of Units to be produced				
Sales				
Less: Variable Cost				
Contribution				
Less Fixed Cost				
Operating Profit				

Which product should Sambar manufacture to earn highest Operating Profit?

INCOME TAXES AND MARGINAL ANALYSIS



ECONOMIC COST V/S ACCOUNTING COST V/S MARGINAL COST



AVERAGE COST

Total Cost = Variable Cost + Fixed Cost.

Average Variable Cost = Variable Cost / Production Volume

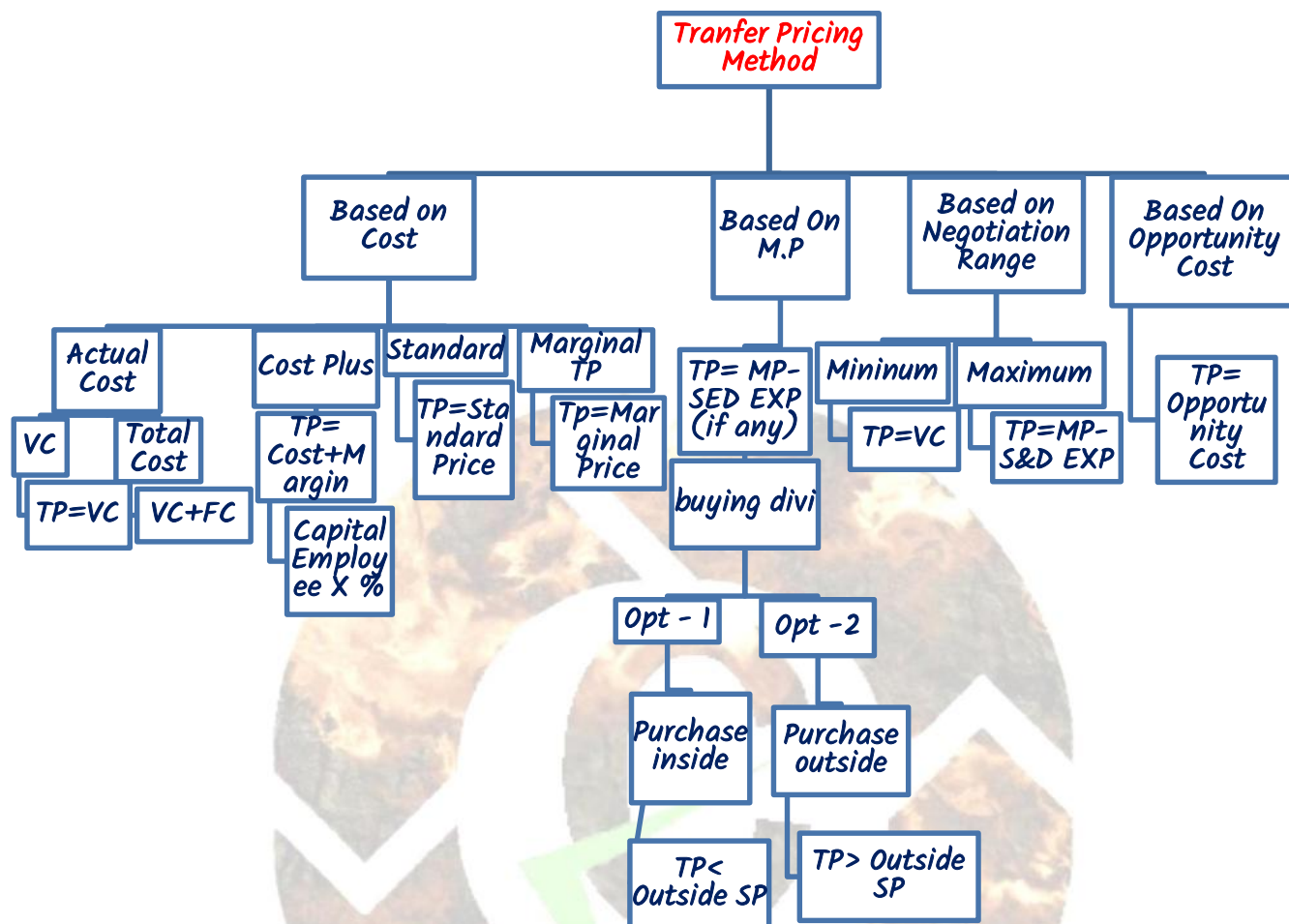
Average Fixed Cost = Fixed Cost / Production Volume

Average Total Cost = Average Variable Cost + Average Fixed Cost

TRANSFER PRICING



TARGET
Academy



In Difference Point → $\text{Diff in FC} / \text{Diff in VC PW}$

$$= (39500 - 25900) / (0.5 - 0.35)$$

$$= 90,666.67$$

TARGET
Academy

THE END

RESPONSIBILITY ACCOUNTING

Responsibility accounting system facilitates decentralization by providing information about the performance, efficiency, and effectiveness of organizational subunits and their managers. Responsibility accounting is the key management control tool in a decentralized organization.

The term 'responsibility accounting' refers to the accounting process that reports how well managers (of responsibility centres) have fulfilled their responsibility. It is a system that measures the plans (by budgets) and actions (by actual results) of each responsibility centre

A responsibility accounting system helps organizational unit managers to conduct the five basic control functions

Preparing a plan (e.g., using budgets and standards) and use it to communicate output expectations and delegate authority

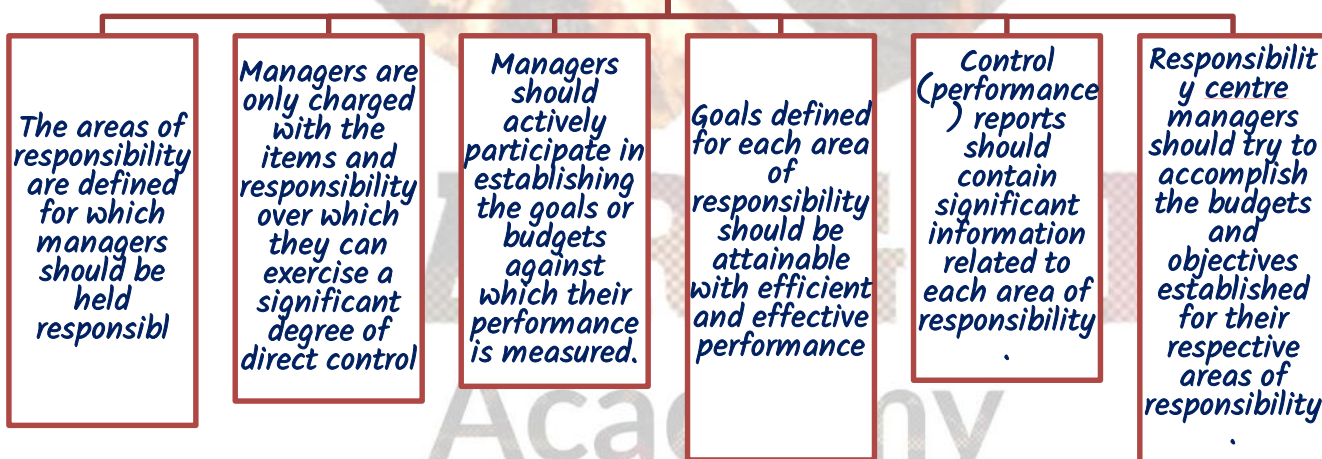
Gathering actual data classified in accordance with the activities and categories specified in the plan

Monitoring the differences between planned and actual data at scheduled intervals

Exerting managerial influence in response to significant differences

Continuing comparing data and responding; then, at the appropriate time, the process will begin again

Assumptions of Responsibility Accounting



Responsibility Centers

A centralized organization allows manager very little freedom to make decision

In contrast, a decentralized organization spreads decision making to managers at different responsibility center levels

A responsibility center, also called a strategic business unit (SBU), is any portion of a business that grants the center's manager responsibility over costs, profits, revenues, or investments

Types of responsibility centers



Revenue centers

- Revenue centers are responsible for sales but not for the manufacturing costs of the sales
- A revenue center obtains products from either a cost center or a profit center
- Revenue center are evaluated on their ability to provide a contribution : Sales – Direct revenue center costs
- They are not responsible for the costs of the items obtained from cost or profit centers
- In the real world most centers that would be responsibility for revenues are likely to also be responsible for costs
- Therefore, expect to see many profit centers than revenue centers

Cost center

- A manger for a cost center is responsible for controlling costs in a department that generates little or not revenue
- Therefore, the manager is not responsible for revenue or investments but is rewarded whenever he or she can minimize costs while maintaining an expected level of quality
- Finance, administration, human resources, accounting, customer service, and help desks are all examples of cost center
- If the cafeteria is not expected level of quality
- Finance, administration, human resources, accounting, customer service, and help desks are all examples of cost centers
- If the cafeteria is not expected to make a profit, it is also a cost center.
- Even plants and manufacturing facilities sometimes are considered cost centers, assuming that the profit center would then be the sales department or a different production department
- Managers of cost centers usually are responsible for direct material and labour efficiency variances as well as the variable overhead variance
- Controlling unfavorable variances and analyzing favorable variances are often part of the manager's responsibility

Profit center

- Profit centers are responsible for both costs and revenue
- Since profits is a function of both revenue and costs, a manager for a profit center is responsible for generating profits, managing revenue, and controlling costs
- Managers of these departments usually do not have control over investments
- Profit centers are often separate reporting segments
- A grocery store that is part of a chain of stores could be a profit center and a separate reporting segment
- Managers of profit centers would be evaluated based on actual profits versus expected profits

Investment center

- Managers for investment center are responsible for investment, cost, and revenues in their department
- Investment centers can be centered primarily on internal or external investments
- Internal investment managers are responsible for reviewing and approving capital budgeting and other investments, such as in research and development
- External investment managers are responsible for reviewing and approving temporary and long-term investments for capital maintenance, return on investment, and strategic investments
- Managers in such centers would be evaluated not only by the center's profit but by relating the profit to its invested capital
- Strategic investments would be evaluated for their fit with company strategy, while other investments would be judged on their on investment and preservation of capital

Types of Responsibility Centers	Sales	Cost of Sales	Other Costs	Investments
Revenue Centre	Yes	No	Yes	No
Cost Center	No	Yes	Yes	No
Profit Center	Yes	Yes	Yes	No
Investment Center	Yes	Yes	Yes	Yes

Ex :

Any organizational unit in which the manager of that unit has responsibility for both costs and revenues best describes what type of responsibility center?

Ex :

- Bridgewater Consulting has several business units, each consisting of a team of consultants managed by a senior partner. Karen, a senior partner, makes hiring decisions and is responsible for sales of consulting services to clients. She is compensated based on the profit generated by her unit, as well as the profit earned by the entire firm. Based on this information, Karen's business unit is likely regarded as a(n) ----- center.

Ex :

- ▶ A fast-food chain has over 3,000 stores nationwide, with each store making its own decisions about hiring, expansion, and sales. Each location can be regarded as a(n) _____ center

Ex :

- ▶ Virginia owns an interior design company and hires freelance decorators to help with large jobs. In this way, she is able to keep costs low by only employing staff when they are needed. However, over time Virginia has added full-time staff members as the company grows. How would you classify Virginia's company

Ex :

- ▶ The accounting department in a large manufacturing company would be classified as a(n):

Ex :

- ▶ National Advertisers has advertising divisions for several different product categories. Matthew is the senior manager over the sports division, where he is responsible for human resource decisions, obtaining clients, negotiating fees, and ensuring quality advertising campaigns. Matthew is compensated based on commissions from clients. Based on this information, Matthew's business unit is likely regarded as a(n):

Ex :

- ▶ Bloomington Clothing Inc., has been growing steadily over the years and has created a reputation for reasonably priced contemporary clothing for both men and women. The Powell division manufactures and sells men's fashions. The divisional president is responsible for all short-run decisions regarding the manufacturing and sale of clothing and accessories; however, all long-run strategic decisions are made at the corporate level by a committee of senior executives. Based on these facts, the Powell division should be held accountable as a(n) _____ center

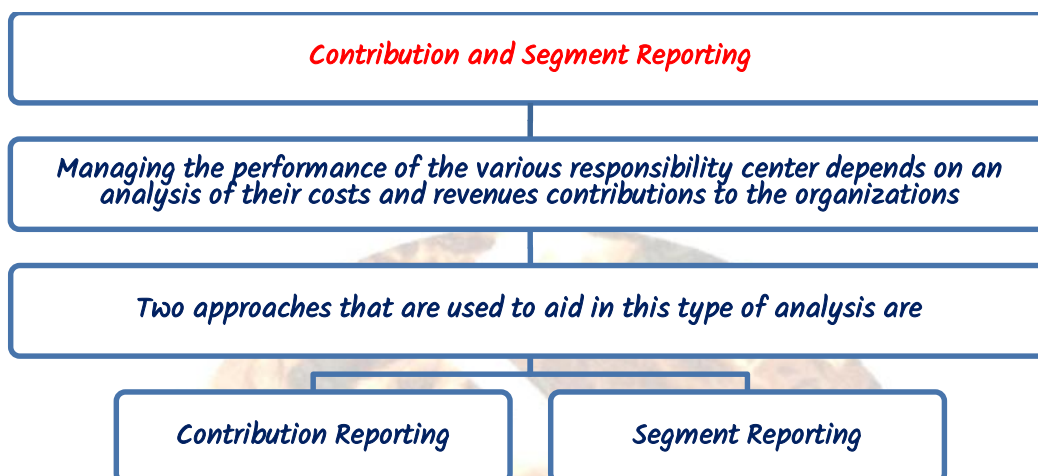
Ex :

- ▶ An outdoor recreational supply store has retail centers in over 500 major cities. Each retail center is responsible for staffing, inventory, and pricing decisions as well as expansion decisions. Based on this information, each retail center is a(n):

Ex :

- ▶ Blackwell Electronics is a multinational corporation that sells computers, tablets, cameras, and portable music players. The Mayfield division is responsible for designing, manufacturing, and selling the latest in camera technology; however, corporate headquarters still retains control over

all expansion and major equipment purchases. Based on these facts, the Mayfield division is best described as a(n):



Contribution Margin

The contribution approach to reporting an income statement is useful for internal decision making

It separates variable from fixed expenses, deducting variable expenses from revenue first to arrive at the contribution margin

The fixed expenses are deducted to arrive at net operating income

The contribution margin is the amount that contributes towards fixed expenses and profits

The Contribution margin shows managers how profits are affected by changes in volume

Remember the fixed costs and operating capacity are constant over the relevant range

Controllable fixed cost and Uncontrollable Fixed Cost

Management Performance can be evaluated more easily using a contribution income statement because the items outside the manager's control are separated from the items within their control

However, many fixed costs are controllable, so managers often have them further divided into controllable fixed costs and uncontrollable fixed costs

Controllable fixed costs are those costs the manager makes decisions about

Uncontrollable fixed costs often come from a nonnegotiable corporation allocation of headquarters expenses

The controllable margin is the contribution margin less the controllable fixed costs

Segment Reporting

Reporting Segment are portion of a business dividend for reporting purposes along product lines, geographical areas., or other meaningful segments to provide individual information about that area

Segmented financial statements are the same as nonsegmented statements except that each segment has its own costs traced back to it so that the report shows how profitable each segment is by itself

For example: Consider a grocery chain. Each store is a segment. Also, if the accounting and decision-making systems evaluate product lines separately, each product line (such as produce, dairy, meats, etc) is a segment as well

Segment Margin

The segmental margin is the segment's contribution margin less all traceable fixed costs for the segment

The segment margin is a useful indication of a segment's profitability. If it is not positive, the segment may need to be discontinued unless it adds value to other segments

Traceable fixed costs are included in a segment's margin are costs that would not exist were it not for the segment

Administration salaries for segment managers are an example of a fixed cost that can be traced directly to a segment

Similar, building maintenance costs or insurance premium for a specific business segment may be able to be traced to the segment

Common Cost

Unlike traceable fixed costs, common fixed costs (such as the chief executive's salary) cannot be traced to a specific department because they are shared costs and must be apportioned between two or more departments using some allocation basis that may or may not provide an accurate allocation

Additionally, common costs are often uncontrollable by the segment manager o whom the cost is reported and thus make it more difficult to determine the profitability of an individual segment

A common Cost is any cost that is shared by two or more segments or entities. When common costs are allocated to segments, the value of the segment margin on reporting profitability is diluted, therefore some businesses allocate common costs to segments only when all or most of the cost would disappear if the segment were to be discontinued

Two methods of allocation common costs are the

(i) Standalone method and the

(ii) Incremental method

Stand-alone Cost allocation

It is a method that determines the relative proportion of cost driver for each party that shares a common cost and allocates the costs by those percentages

For example: Company A has a new plant and an older plant, but both plants require some workers to be given on-site training. The travelling trainer's salary of 60,000 + 10,000 travel and lodging expenses can be allocated based on the number of users who need to be trained at each location or same other cost driver, such as days spent at each location. If the old plant has 40 trainees and the new plant has 60 trainees, the old plant would receive 28,000 of the cost (40%) and the new plant would receive \$ 42,000 of the cost. This method has the benefit of fairness and is easy to implement

Incremental cost allocation

It is method that allocates costs by ranking the parties by a primary user and incremental users, or those users who add an additional cost due to the fact that there is now more than one user of the cost

For example ; Company-A , just described, hire a trainer because the new plant is being opened. The trainer is based in the new plant's city, so the new plant is the primary user of the trainer's time. If the trainer works at the new plant for three quarters of the time and at the old plant for one quarter of the time, the new plant is allocated 45,000 of the costs, while the old plant is allocated the remaining 15,000 + all 10,000 of the travel expenses because these are an incremental cost of having the trainer travel to serve the incremental user

Conversely , if the management wanted to reduce start up costs for the new plant, it could choose to designate the old plant as the primary user and allocate only a small amount of the costs on the new plant. Because this method allows managers to manipulate how costs are allocated, it is not as balanced as the standalone method. Also, when common costs are allocated in this manner, most of the segments want to be incremental users, so this method can cause interdepartmental contention

EX :

- The following information from the prior year was provided by Comfortable Sofas & Couches, Inc. (CSCI):
 - The company produced 1,900 units and sold 1,800 units, as expected.
 - There was no beginning or ending work-in-process inventories and no beginning finished goods inventory.
 - Budgeted and actual fixed costs were equal, all variable manufacturing costs were affected by production volume only, and all variable selling costs were affected by sales volume only.
 - Budgeted per unit revenues and costs were as follows:
- What is the contribution margin earned by CSCI for the prior year?

	Per Unit
Sales price	120
Direct materials	25

Direct labor	20
Other variable manufacturing costs	15
Fixed manufacturing costs	12
Variable selling costs	8
Fixed selling costs	6
Fixed administrative costs	5

Ex :

- For the current fiscal year, Tuscany Corporation's Florence division generated net revenues of 3,200,000. The division had variable expenses of 800,000, direct fixed expenses of 400,000, and indirect corporate fixed expenses of 200,000. What is the division's controllable margin?

Ex :

- A company is setting up a new division to sell its products in Africa. An accountant has determined that the new African division will have to sell 250,000 units in order to cover the division's fixed costs of 365,000. The company is estimating total sales of 475,000 for the new African division. What is the contribution margin per unit for the new African division?

Ex :

- Bareboating International has operations in Greece, the British Virgin Islands, Tahiti, and the San Juan Islands. Each location is operated as an independent division. During the most recent six months, the Tahiti division reported a contribution margin of 1,210,000 and indirect fixed corporate costs of 160,000 were allocated to the division based on controllable revenues. If the Tahiti division's controllable margin is 630,000, what are the segment's controllable fixed costs?

Ex :

- Clark and Hemsley, Inc., has two divisions—toys and books. It is preparing an estimate of the controllable margin for the toy division. The following information for the division is available:

Revenue	\$1,250,000
Variable costs	
Labor and material	\$500,000
Selling and administrative	\$250,000
Fixed costs	
Manufacturing	\$150,000
Direct fixed	\$75,000
Corporate indirect cost allocation	\$125,000

Based on this information, what is the toy division's controllable margin

Ex :

Classy Purses, Inc. (CPI) is an international manufacturer of stylish shoulder bags. CPI is split up into three regions: Europe Region, Asia Eastern Region, U.S. Region. CPI has provided the following operating profit & loss report for their Europe Region:

Europe Region - Profit & Loss Report (for Classy Purses, Inc.)				
(in millions)	England	France	Germany	Total
Revenue	€270	€340	€390	€1000
Variable COGS	(140)	(90)	(100)	(330)
Variable S&A costs	(30)	(50)	(90)	(170)
Fixed COGS	(80)	(100)	(90)	(270)
Fixed S&A costs	(20)	(30)	(20)	(20)
Allocated corporate costs	?	?	?	(10)

When CPI began operations in the Europe Region, England was the first operation, increasing corporate costs by €50M. France was the second operation, increasing corporate costs by €30M. Finally, the Germany operation was started, resulting in a €20M increase in corporate costs. What would be the operating profit for Germany operations using a stand-alone cost allocation method based on contribution margin? And what would be the operating profit for Germany operations using the incremental method?

Ex :

- After reviewing the following financial information about the riding toy division at Rainbow Toys, management has considered closing the riding toy division. During its review, management discovered that \$395,200 of corporate fixed overhead has been allocated to the division. With this additional information, should Rainbow close the riding toy division? Why or why not?

	Riding Toy Division	Company Total
Revenue	\$950,500	\$49,600,000
Less: Variable expenses		
Cost of goods sold	425,000	16,005,000
Selling & administrative	285,700	12,015,450
Equals: Contribution margin	\$239,800	\$21,579,550
Less: Fixed expenses	402,500	8,750,900
Equals: Operating income	(\$162,700)	\$12,828,650

Ex :

- The responsibility report for the Hayward division shows actual contribution margin of \$1,600,000 and actual controllable fixed costs of \$800,000. Budgeted contribution margin for the division was \$1,680,000 and budgeted controllable fixed costs were \$720,000. Based on this information, the manager's overall performance is:
 - A. 16.7% below expectations.
 - B. 20% below expectations.
 - C. equal to expectations.

D. 4.8% below expectations

Ex :

- Current business segment operations for Whitman, a mass retailer, are presented below.

	Merchandise	Automotive	Restaurant	Total
Sales	\$500,000	\$400,000	\$100,000	\$1,000,000
Variable costs	\$300,000	\$200,000	\$70,000	\$570,000
Fixed costs	\$100,000	\$100,000	\$50,000	\$250,000
Operating income (loss)	\$100,000	\$100,000	(\$20,000)	\$180,000

- Management is contemplating the discontinuance of the Restaurant segment since "it is losing money." If this segment is discontinued, \$30,000 of its fixed costs will be eliminated. In addition, Merchandise and Automotive sales will decrease 5% from their current levels. When considering the decision, Whitman's controller advised that one of the financial aspects Whitman should review is contribution margin. Which one of the following options reflects the current contribution margin ratios for each of Whitman's business segments?

Ex :

- Lawson Company discloses segment financial information for its operating segments. The following information is available for Year 1:

Operating Segments	Sales	Traceable Expenses	Nontraceable Expenses
Segment A	\$ 600,000	\$ 360,000	
Segment B	\$ 800,000	\$ 600,000	
Segment C	\$ 400,000	\$ 340,000	
Total	\$ 1,800,000	\$ 1,300,000	\$300,000

- Nontraceable expenses are allocated based on the ratio of a segment's income before nontraceable expenses. The segment profit for Operating Segment B is (approximately):

Ex :

- A company has \$80,000 in common costs, plus departments 1 and 2 have \$40,000 and \$60,000 in individual costs, respectively. The segments share a fleet of vehicles (the costs of which are included in common costs): department 1 uses the vehicles for five months out of the year and department 2 uses the vehicles for the remaining seven months. Using stand-alone cost allocation, what is allocated to department.

Ex :

- The processing department of a large company informs the marketing department that the price of processing 2,00,000 items will be ₹50,00,000. The marketing department submits the material for the item two weeks later than originally planned and tells the processing department that the scheduled date of completion has been advanced two weeks. In order to achieve the new schedule, the processing department incurs an additional production cost of ₹16,00,000.

Ex:

- The receipt of raw materials used in the manufacture of products and the shipping of finished goods to customers are under the control of the warehouse supervisor. Approximately 60% of the warehouse supervisor's time is spent on receiving activities and 40% on shipping activities. Separate employees handle the receiving and shipping operations. The labour-related costs for the warehousing function are as follows:

Warehouse supervisor's salary	₹40,000
Receiving clerks' wages	₹75,000
Shipping clerks' wages	₹55,000
Employee benefit costs (30% of wage and salary costs)	<u>₹51,000</u>
	<u>₹2,21,000</u>

The company employs a responsibility accounting system for performance reporting purposes. The costs are classified on the report as period or product costs. You are required to state the total labour-related costs to list on the responsibility accounting performance report as product costs under the control of the warehouse supervisor for the warehousing function.

Ex:

- The following information for R & Co. for the prior year:
- The company produced 1,000 units and sold 900, both as budgeted.
 - There were no beginning or ending work-in-process and no beginning finished goods inventory.
 - Budgeted and actual fixed costs were equal, all variable manufacturing costs were affected by production volume only, and all selling variable costs were affected by sales volume only.
 - Budgeted per unit revenues and costs were as follows:

Sales price	₹100
Direct materials	₹30
Direct labour	₹20
Other variable manufacturing costs	₹10
Fixed manufacturing costs	₹5
Variable selling costs	₹12
Fixed selling costs (₹3,600 total)	₹4
Fixed administrative costs (₹1,800 total)	₹2

Calculate the contribution margin earned by R & Co. for the prior year

Ex:

- The Hind Company allocates national magazine advertising cost to territories on the basis of circulation, which is determined by an index that measures relative buying power in the territories.

Top management wants to know if this method of allocation gives appropriate cost and benefit figures to make the following decisions:

- For deciding whether or not to close an unprofitable territory
- For deciding whether or not a territorial manager has obtained sufficient sales volume
- For determining how efficiently the territorial manager has operated the territory
- For determining whether or not advertising costs are satisfactorily controlled.

Ex:

- ▶ You have a client who operates a large retail self-service grocery store that has a full range of departments. Management has encountered difficulty in using accounting data as a basis for making decisions concerning possible changes in departments operated, products, marketing methods, and so forth. List several overhead costs, or costs not applicable to a particular department, and explain how the existence of such costs (sometimes called common costs or joint costs) complicates and limits the use of accounting data in making decisions in such a store.

Ex:

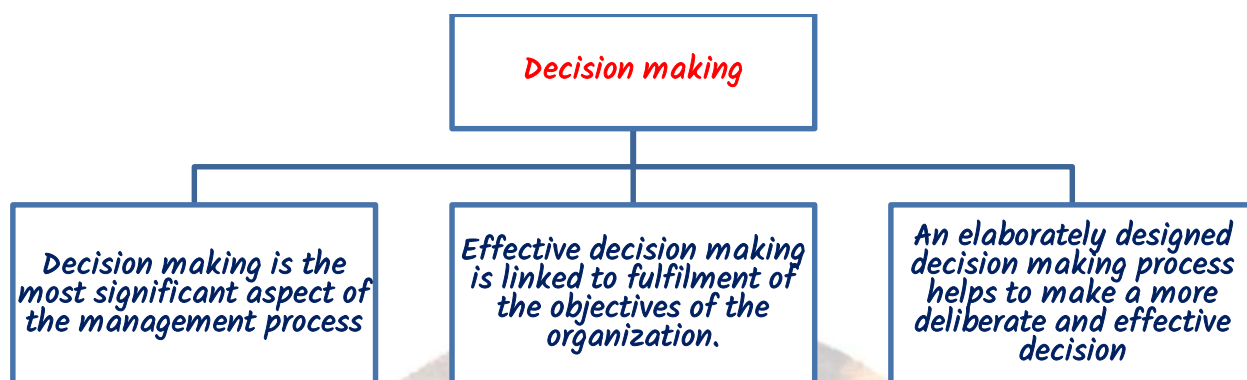
- ▶ The monthly service charge a bank makes on a customer's checking account is based on the cost of handling each account. A customer disagrees with this policy because she cannot see how it is possible to determine the exact cost of handling her account. Do you agree with the customer? Discuss fully the problems involved in determining cost for such a service, including the limitations of the cost figures obtained.

Ex:

- ▶ Consider each of the following scenarios:
 - I. Mr. P K. Dhawan, plant manager for the laser printer factory of Bharat Co. brushed his hair back and sighed. December had been a bad month; two machines had broken down, and some direct labourers (all on salary) were idled for part of the month. Materials prices increased, and insurance premiums on the factory increased. No way out of it — costs were going up. He hoped that the marketing VP would be able to push through some price increases, but that really wasn't his department.
 - II. Ms. Sonam Kapoor was delighted to see that her ROI figures had increased for the third straight year. She was sure that her campaign to lower costs and use machinery more efficiently (enabling her factories to sell several older machines) was the reason why she planned to take full credit for the improvements at her semi-annual performance review.
For each of the above independent scenarios, indicate the type of responsibility center involved (cost, revenue, profit, or investment).

THE END

DECISION THEORY

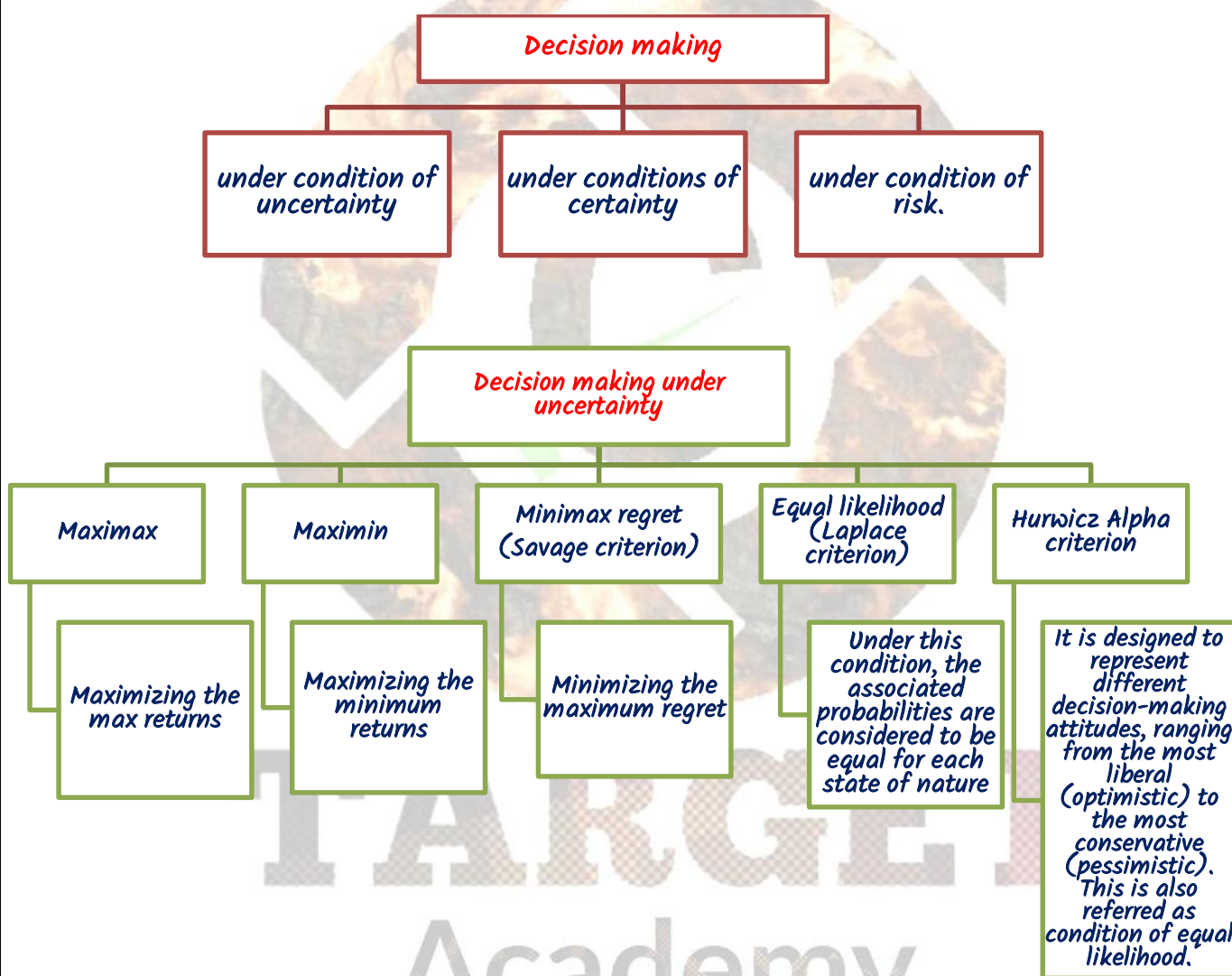


The steps of the process are discussed below

Step 1: Identify the decision –	it is important to identify the nature of decision that the decision maker is faced with
Step 2: Gather relevant information –	Before decision making, it is important to gather all relevant information. The source of information can be two types, Internal source- information available within the organisation. External source – information that are available beyond the scope of the organization
Step 3: Identify the alternatives –	it is important to make a list of all possible alternatives in order to make a correct and effective decision.
Step 4: Consider the evidence –	In this step, the decision maker uses his knowledge and emotion to imagine what it would be like if one particular alternative is chosen and carried out
Step 5 Take action –	In this step the decision maker is ready to make his call which is decided upon in the previous step
Step 6: Review of the decision –	After the above steps are undertaken and a decision is arrived at, the process of evaluation has to begin where the impact of the decision is considered. If the desired result is not achieved, the whole process has to be revisited

Risk and uncertainty

BASIS OF COMPARISON	RISK	UNCERTAINTY
Meaning	The probability of winning or losing something worthy is known as risk	Uncertainty implies a situation where the future events are not known
Ascertainment	Measurable	Not Measurable
Outcome	Chances of outcomes are known	The outcome is unknown
Control	Controllable	Uncontrollable
Minimization	Yes	No
Probabilities	Assigned	Not assigned



Question 1

- Given the following Payoff table of profits generated by an entity under differing condition of the future state of nature

Alternatives	States of Nature			
	S1	S2	S3	S4
A1	3	5	8	-1
A2	6	5	2	0

A3	0	5	6	4

► State which can be chosen as the best act using:

- (a) Maximax,
- (b) Maximin,
- (c) Minimax regret (Savage criterion),
- (d) Equal likelihood (Laplace criterion),
- (e) Hurwicz Alpha criterion $\alpha=0.4$

► Decision making under certainty

► Question 2

► Mr Pratap is considering setting up his stall in the playground in the evening of a particular day, say 20th August 2022. He has the option of selling ice creams or coffee. He has the option of buying Ice creams⁹ from a whole seller @ `56 each and selling them for @ `60 each. Thus he would make a profit of `4 on each Ice cream cone. On a sunny day he sales 200 cones, but if it is a rainy day then sales fall and thus he is able to sell only 80 cones. On the contrary, he can sell coffee whereby he can make a profit of `6 per cup. On a sunny day he sales 100 cones, but if it is a rainy day then sales increases and thus he is able to sell 160 cups

Particulars	States of Nature	
	Sunny Day	Rainy Day
Sale Ice Cream	` 800 <sup>10</sup>	` 320
Sale Coffee	` 600	` 960

► Now, on the morning of 20th August 2022 he wakes up and find that it has been raining from the previous day night and for clarification he calls the met office and they confirm that it would rain for the whole day. Thus he faces a situation of certainty as there is only one state of nature and that is it being a rainy day. Thus his decision whether he would sell Ice cream or Coffee is based on one certain information and thus the above payoff matrix may be reduced to one with a single state of nature (Rainy Day)

Particulars	States of Nature
Acts	Rainy Day
Sale Ice Cream	320
Sale Coffee	960

- Thus Mr Pratap is better off if he sales Coffee on 20th August 2022, at the playground as the payoff (960) from selling coffee is higher than the payoff from selling ice cream. This is particularly because of the fact that it is known with certainty that the 20th August 2022 would be a rainy day

Decisions Making under Risk

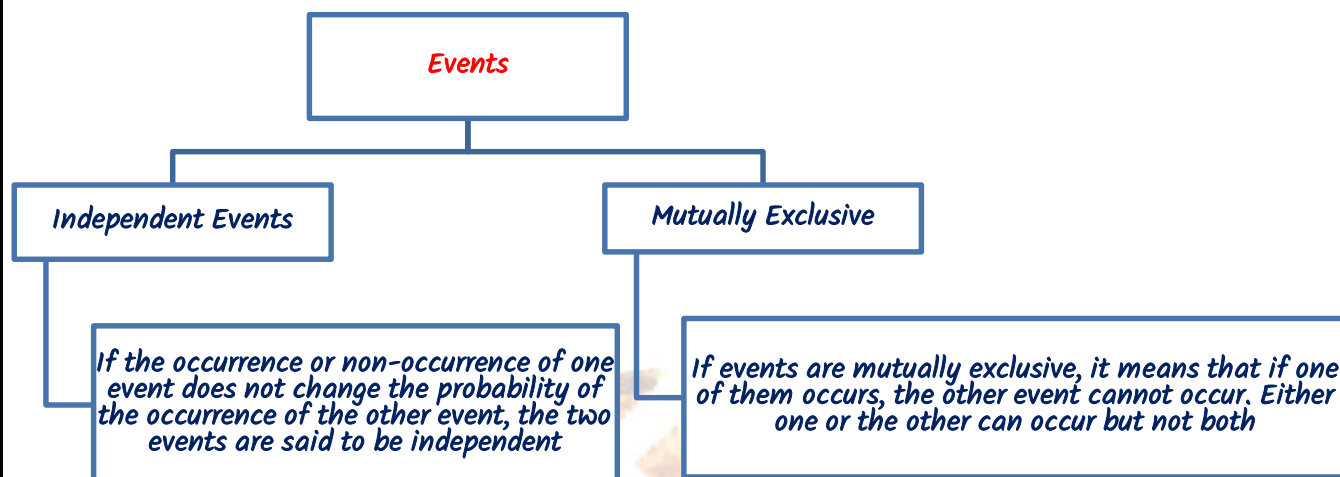
Risk

· Acondition in which there is a possibility of an adverse deviation from a desired outcome’.

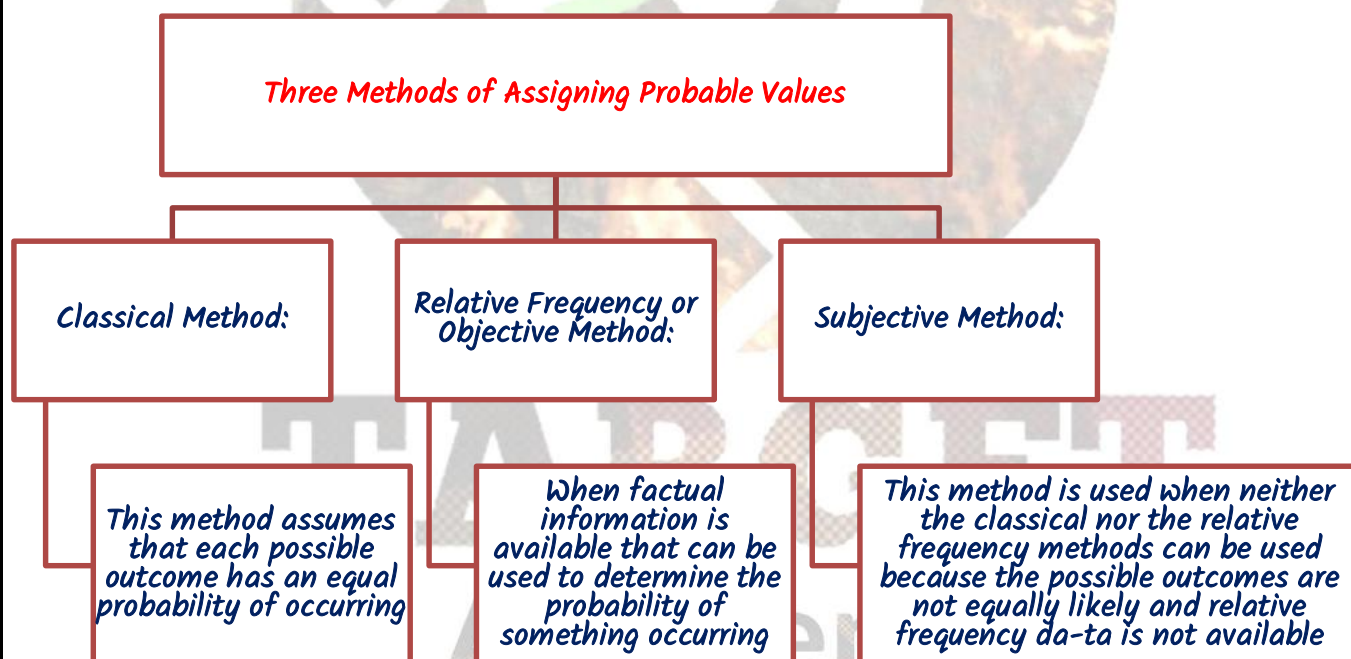
Probabilities

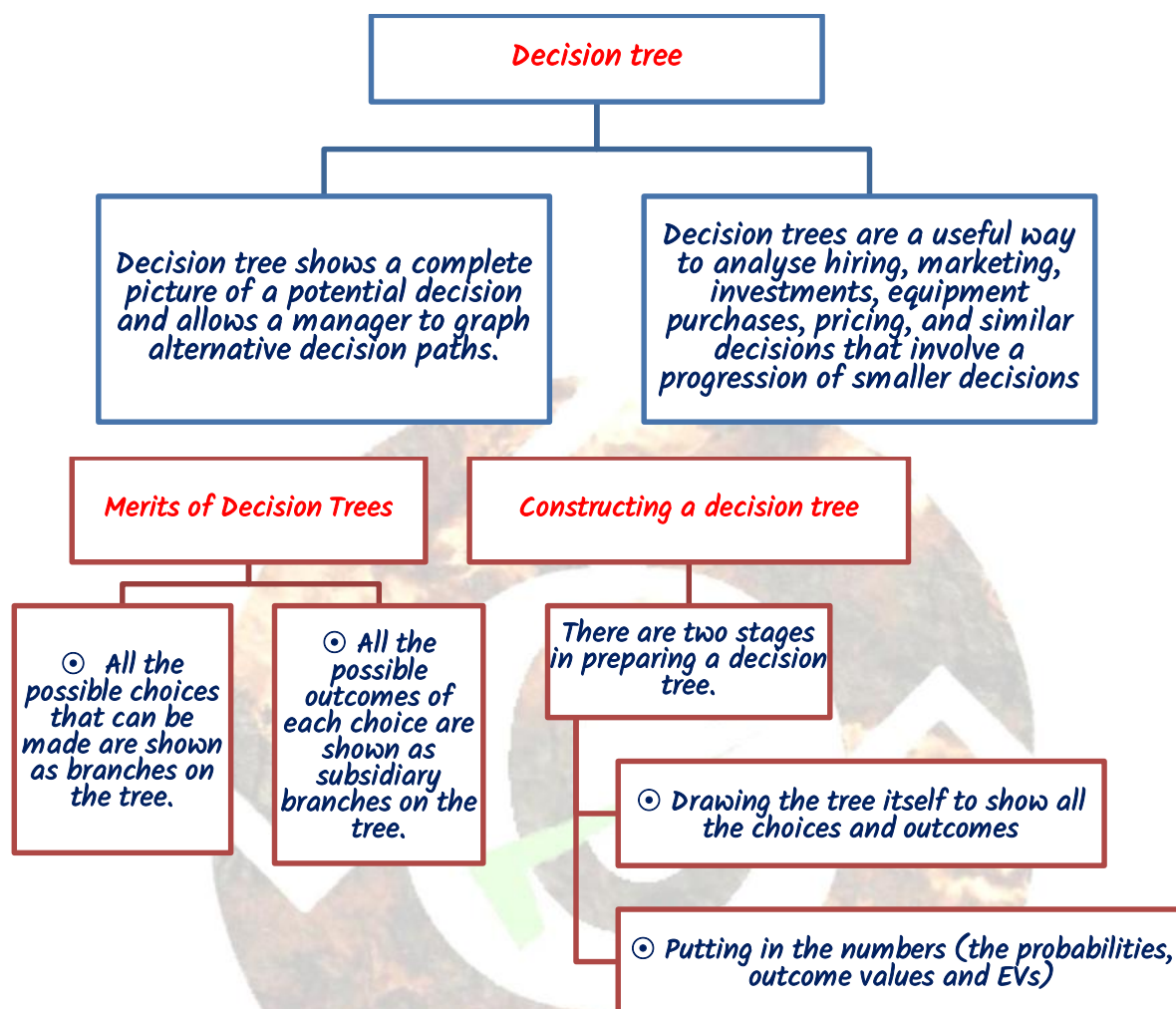
· These are mathematical expression which is used to denote the likelihood that an event or state of nature will occur





► *Coefficient of variation = $\frac{\text{Standard Deviation of Return}}{\text{Expected Return}}$*





Every decision tree starts from a decision point with the decision options that are currently being considered.

It helps to identify the decision point, and any subsequent decision points in the tree, with a symbol. Here, we shall use a square shape

There should be a line, or branch, for each option or alternative.

Decision point

Outcome point

THE END

2. TRANSFER PRICING

- Allocating costs to a responsibility center or segment involves assigning prices for the goods and services that pass between segment
- Transfer pricing sets prices for internally exchanged goods and services
- An intermediate product is a good or service that is transferred between two segment of a company
- Country strategy is greatly affected by choice of transfer prices
- If the company wants the business units to behave independently and keep managers motivated to achieve company goals, transfer prices should be set at arm's length, as if the party were any other external client
- When no external supplier or customers exist for a product or service, the arm's- length price (an impartial or fair market price) is more difficult to determine
- The amounts set for transfer prices require cooperation among many departments, including finance, production, marketing, and tax planning
- Firms that have a high degree of vertical integration will need to set transfer prices carefully
- For example, a corporation that owns farms, food warehouses, distributors, and grocery stores will need to set prices for each services that will be considered fair by all segments and also allow each service that will be considered fair by all segment and also allow each portion of the business to be financially viable
- Four models that can be used to set transfer prices are market price, negotiated price, variable cost, and full cost
- Firms often combine various methods (dual pricing) to match their needs

Advantages of Transfer Pricing

Top managers have more time to devote to general planning since they are not burdened with routine daily decisions.

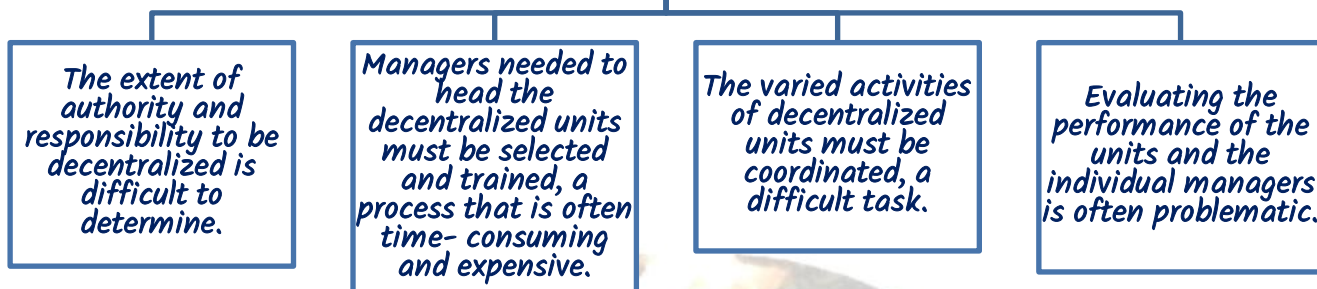
The decision-making task is distributed among more personnel so that each person has enough time to give matters sufficient attention.

Better control can be achieved, as the manager can move quickly to make needed corrections.

Managers are better motivated, as they have more control over those matters on which their performance is measured.

As managers become more proficient in decision making, they become more qualified for higher management positions

Disadvantages of Transfer Pricing



Ex :

- Within the Gamma Company, the Alpha division produces a product that can be used by the Beta division. If Alpha transfers the product to Beta, the transfer price represents:
- Revenue to Alpha and a cost to Beta.
 - Revenue to Beta and a cost to Alpha.
 - Profit to Alpha and a cost to Beta.
 - profit to Beta and a cost to Alpha

TRANSFER PRICING METHODS



Cost-based Prices

- Four versions of 'cost' are commonly used, marginal cost, absorption cost, standard cost, and marginal cost plus a fixed charge. Actual costs will vary with volume, seasonal and other factors; furthermore, if actual costs are used as a basis for transfer prices, any inefficiency in the producing department will be passed on in the form of increased cost to the receiving department. The use of standard costs is therefore recommended, so that all of the supplying division's efficiencies and inefficiencies are reflected in its own accounts

When to use Cost Based Transfer Prices:

When market prices are unavailable, this is common for intermediate products.

When the transferring division is treated as a cost centre. In this case, a profit is not necessary, as performance evaluation is based on cost control.

Marginal Cost:

- Let us explore the transfer pricing method based on marginal cost, through the following example:
- ABC Company Limited has two divisions – X and Y. Division X manufactures advanced computer microchips, and most of its production is taken up by division Y, which assembles computers. Data for division X are:

Standard unit production cost per unit	Amount (₹)	Amount (₹)
Direct materials		35
Direct labour		10
Variable manufacturing overhead (A)		<u>15</u> 60
Fixed Overhead	20	
Fixed selling and administration (B)	5	
		<u>25</u>
Total cost (A+B)		85
Mark-up: 40%		<u>30</u>
List price to outside buyers		115
Note on Fixed Cost:		
Fixed costs are allocated on the basis of estimated volume		
Estimated production (units):		
Internal transfers		300
External sales		<u>200</u>
Total production		<u>500</u>

- If we assume that variable cost can be used as marginal cost, then the transfer price based thereon would be ₹60. If costs, revenues and volume are as expected, the use of this price will result in a 'loss' for the selling division to ₹1,500, as calculated below:

Internal transfers: 300 @ ₹60	18,000
External sales: 200 @ ₹115	<u>23,000</u>
	41,000
Total costs: 500 @ ₹85	<u>42,500</u>
Loss	<u>1,500</u>

- However, if no more than the current 200 units could be sold externally, and the capacity represented by the production on chips for internal transfer would otherwise remain idle, there is no opportunity cost associated with a transfer at marginal cost, other things being equal, and division X would be indifferent to the production and transfer.
- Obviously, if more than the current 200 units could be sold externally, X's indifference may change, depending on whether a price in excess of marginal cost is offered. If no excess is offered, X would have a strong disincentive to supply Y.

Absorption Cost

- Let us now proceed with the Absorption cost method, taking into account the previous example:
- Let us take transfer price of ₹70 (variable costs ₹50, fixed manufacturing cost ₹20)

	Amount (₹)
Internal transfers: 300 @ ₹70	21,000
External sales: 200 @ ₹105	<u>21,000</u>
	42,000
Total costs – as above	<u>(37,500)</u>
Profit	<u>4,500</u>

- Although the new transfer price does not generate the same level of profit as a sale of that quantity to an outside party, nevertheless a contribution towards fixed costs is provided thereby, thus modifying the disincentive noted above. However, as the level of the transfer cost is increased, its effect on the buying division, B, could lead to problems of sub-optimization for the firm as a whole. For example, suppose Y could buy the same components from an outside supplier

at a cost of `65. An internal transfer price of `70 would force Y to buy in a product at `65 that could be manufactured in-house for a variable cost of `50. Although the buying division would 'save' `5 per chip ( $70 - 65$ ), the firm would lose `4,500 thereby

Marginal cost to produce	50
External purchase cost	(65)
Loss, if buy in	<u>(15)</u>
300 units $\times$ `15 =	<u>4,500</u>

- This loss assumes that the opportunity cost of the released capacity is less than 15 per unit. If alternative goods generating more than this could be produced with the spare capacity – if, for example, the marginal 300 units could be sold externally at the list price – then ABC would be optimizing its resources by buying in the components:

List price	115
Marginal cost	(50)
Contribution	65
Loss if buy in	(15)
Incremental profit	<u>50</u>
300 units $\times$ `50 =	<u>15,000</u>

- We can see here a clear application of the minimum/maximum rule noted above, the sum of the selling division's marginal cost and the opportunity cost of the resources used (at list price) is `115, the minimum transfer price that the selling division could charge without making a loss for the firm, which exceeds the `65 maximum transfer price dictated by the prevailing market price. ABC should not transfer the components internally as long as the market price is less than `115

Standard Cost

One of the problems of cost-based systems is that they allow a transferor division to pass on cost inefficiencies to a transferee division. Such inefficiencies can result from anything as simple as high fixed overheads per unit arising from low output levels in the current period, or high unit material costs resulting from machine defects in the current period.

One variant on the absorption cost method is standard cost. Such standards are used irrespective of what actual costs were, with the result that the impact of adverse or favorable cost variances rests with the transferor division. Many business managers would consider that this gives the most equitable distribution of profit

Two-part tariff

Under this variant, the selling division transfers at marginal cost (including any opportunity cost), but raises a fixed annual fee on the buying division for the privilege of receiving transfers at that price. The theory underlying this approach is that the buying division will have a correct understanding of the selling division's cost behaviour patterns.

The buying division will be able to correctly identify the appropriate marginal cost when calculating the optimum output level. The fixed fee is designed to cover a share of the selling division's fixed costs and provide a return on the capital employed in it, and thus both selling and buying divisions should be able to record a profit on intra-company transfers.

Drawbacks of this system include:

The supplying division has no incentive to supply units swiftly, because individual units do not generate a profit.

A profit is made when the fixed fee is transferred

Advantages and disadvantages of Cost Based Transfer Pricing:

Advantages:

Costs are likely available since they will be computed for other purposes.

For organisations, units that do not control investment or revenues, cost based transfer prices are consistent with the appropriate performance measure for those units.

Disadvantages:

Using actual costs transfers inefficiencies.

Can lead to sub-optimal decisions as divisional managers make decisions that are beneficial for their unit, but detrimental to the company as a whole. This is particularly the case in absorption or full cost based transfer prices. Even if there is idle capacity, a manager may refuse a special order if it does not meet the absorption or full cost transfer price. This can result in the buying manager purchasing externally, resulting in lower overall company profit.

Market Price Model

It is true Arm's Length model because it sets the price for a good or service at going market prices

This model can be used when an item has a market, items such as work-in-process inventory may not have a market price

When to use Market Based Transfer Prices:

When a competitive external market for the product exists.

When managers have the autonomy to purchase externally or internally.

When transferring and receiving divisions are treated as a profit or investment centre and, therefore, are evaluated on profit based measures, such as ROI or residual income.

Advantages:

As the transfer price is based on competitive market conditions, managers are motivated to become more efficient – the market sets the price; therefore, to increase profit, costs must be reduced.

Easy to use when market prices are readily available.

A market price may not exist for the exact product.

In some industries, market prices can fluctuate widely creating uncertainties in planning for both the supplying and receiving profit centre managers

Disadvantages:

Negotiated Price Model

The negotiated price model sets the transfer price through negotiation between the buyer and seller

When different business units experience conflicts, negotiation or even arbitration may be needed to keep the company as a whole functioning efficiently

Negotiated prices can make both buying and selling units less autonomous

There is also the issue that one business unit manager may simply be a better negotiator than the other

When to use Negotiated Transfer Pricing:

When an external market does not exist and market prices are not available.

When divisions are forced to purchase internally.

Where there is not an excessive number of transfers subject to negotiation

Advantages:

Of all transfer pricing methods, negotiated transfer pricing provides managers with the greatest control over divisional profits.

Disadvantages:

Negotiations may be time consuming and require a great deal of data, which can be costly to accumulate.

Disputes can result in conflict and hostility between divisions.

Focus is on divisional results, not the company as a whole.

Conflicts between Divisions and Company as a whole:

If Divisional Managers are given "absolute free hand" in decision making on Transfer Prices, there is a possibility that divisional goals may be pursued, ignoring overall Company interests. This may force the top Management to interfere in decision-making.

However, interference of top Management and "dictating a Transfer Price" on the divisions is usually the main basis of conflict between a Division and the Company as a whole

To resolve transfer pricing conflicts, the following transfer pricing methods can be suggested -

Dual-Rate Transfer Pricing System:

The dual price method of transfer pricing was introduced in order to overcome the problems caused by using marginal cost, namely poor morale in the selling division, and lack of motivation by the receiving division to maximize the group's profit. The dual pricing method uses two prices:

The supplying division is credited with a price based on total cost plus a mark-up. The receiving division is debited with marginal cost.

Two-Part Transfer Pricing System:

Under this variant, the selling division transfers at marginal cost (including any opportunity cost), but raises a fixed annual fee on the buying division for the privilege of receiving transfers at that price.

Rules for transfer pricing

The minimum- the sum of the supplying division's marginal cost and opportunity cost of the item transferred.

The maximum- the lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery

Example:

- Division X produces product L at a marginal cost per unit of ₹100. If a unit is transferred internally to division Y,
- ₹25 contribution is foregone on an external sale. The item can be purchased externally for ₹150.
- The minimum- Division X will not agree to a transfer price of less than ₹(100 + 25) = ₹125 per unit.
- The maximum- Division Y will not agree to a transfer price in excess of ₹150

Pricing Model	Price of product or service
Market Price	Current market price; true arm's-length model

Negotiated price	Negotiated between seller and buyer (both internal)
Variable cost	Variable cost
Full Cost (Absorption)	Variable cost, plus allocation of fixed costs

Particulars	North Division (30% Tax Rate)	South Division (40% Tax Rate)	Total Both Division
Sales 10,000 units x 15 per unit 20,000 units x 18 per unit	1,50,000	3,60,000	1,50,000 3,60,000
Total Sales	1,50,000	3,60,000	5,10,000
Expenses			
Variable 10,000 units x 7 per unit 20,000 units x 10 per unit	70,000	2,00,000	70,000 2,00,000
Fixed expenses	50,000	65,000	1,15,000
Total Expenses			
Operating Income			

North Division	Transfer Price
Operating at full capacity	TP = Market Price = 15
Excess Capacity	TP = Negotiated Price = Between 15(FC) to 7(VC)
Variable Cost Model	TP = VC = 7
Full cost model	TP = VC + FC = 7 + 5 = 12

Ex :

- Jamison Textiles has two divisions. One division makes bolts of cloth, and the other division makes t-shirts. The cloth division makes 2 square yards of cloth for \$0.27 but sells the cloth to customers for \$0.45. The t-shirt division can make t-shirts for \$0.59 plus the cost of 2 square yards of cloth and sells tshirts for \$6.00. The company can purchase cloth from a different company for \$0.43 per 2 square yards. If Jamison Textiles has excess capacity and wants to use a negotiated transfer price to sell cloth from the cloth division to the t-shirt division,

what should be the minimum and maximum transfer costs?

Ex

- Business Unit X produces a widget product that can be sold either to external customers or internally to Business Unit Y. Business Unit Y is currently purchasing 20,000 widgets from an external supplier for \$47 per unit. Both Business Unit X and Business Unit Y are evaluated as profit centers. Production and sales data for Business Unit X are provided below. Assuming that variable costs of \$2 per widget can be avoided if an internal transfer takes place, should Business Unit X transfer widgets to Business Unit Y? If so, what should the transfer price be?

Business Unit X:	
Capacity in units	100,000
Number of units being sold to external customers	100,000
Selling price per unit to external customers	\$50
Variable costs per widget	\$30
Fixed costs per unit (based on capacity)	\$8

Ex

- The socket division of Lehigh Lighting manufactures bulb sockets and sells them to customers for \$6.20 per unit. Each bulb socket has a variable cost of \$3.00 per unit, and a fixed cost of \$0.85. Lehigh's management would like the socket division to transfer 25,000 sockets to another division within the company. If the socket division sold sockets internally, it would avoid \$0.60 of variable packaging costs per unit. Assuming the socket division has enough extra capacity to manufacture the 25,000 sockets, what is its minimum transfer price per unit?

Ex :

- The fabric division of Sweet Petunia's Baby Gear produces fabric designs to be used by the furniture division. The fabric division sells fabric to outside customers for \$800 per bolt. Variable product costs total \$575 per bolt, while variable selling and marketing costs are \$75 per bolt. What is the transfer price if a market-based transfer policy is in effect?

Ex :

- Manhattan Corporation has several divisions that operate as decentralized profit centers. At the present time, the Fabrication Division has excess capacity of 5,000 units with respect to the UT-371 circuit board, a popular item in many digital applications. Information about the circuit board follows:

Market price	\$48
Variable selling/distribution costs on external sales	5
Variable manufacturing cost	21

Fixed manufacturing cost

10

- Manhattan's Electronic Assembly Division wants to purchase 4,500 circuit boards either internally, or else use a similar board in the marketplace that sells for \$46. The Electronic Assembly Division's management feels that if the first alternative is pursued, a price concession is justified, given that both divisions are part of the same firm. To optimize the overall goals of Manhattan, the minimum price to be charged for the board from the Fabrication Division to the Electronic Assembly Division should be

Ex :

- An appropriate transfer price between two divisions of Vroom Motorcycle Company can be determined from the following data:

Fabricating division:	
Market price of subassembly	\$75
Variable cost of subassembly	\$30
Excess capacity (in units)	50
Assembling Division:	
Number of units needed	45

What is the natural bargaining range for the two division's International transfer pricing

Factors influencing international transfer pricing decisions:

- tax rates
- income repatriation restriction
- dividend repatriation restrictions
- duties and tariffs
- exposure to foreign exchange rate fluctuations
- political climate
- the need to maintain cash flows in the foreign division
- competitive position of the foreign division
- trade treaties that restrict transfer pricing

Objectives

Minimization of import duties:

- If import duties are levied on the price of the import (rather than, say, on its volume-specific composition), then a low transfer price will reduce the import duties of the group as a whole if its goods enter a high-import-duty economy.

Management of direct taxation:

- By being aware of the respective government's legislation concerning domestic tax neutrality, withholding taxes the firm may plan effectively to minimize their global tax charge.

Management of indirect taxation:

- Most countries have indirect tax regimes involving a value-added tax. This requires that the firm effectively pays the tax on its purchases (input tax) and then recoups the taxes in the price of its sales (output tax). In competitive markets it may be hard to pass on the indirect tax to the price of the good and so its input tax will not be wholly recovered. To avoid this, it may transfer some goods to itself at very low prices which can then be sold on at high prices to recover the indirect tax paid on other lines of product

Repatriation of profits in kind:

- Where a country operates currency controls it may be difficult (or of low worth) for the Multinational enterprise (MNE) to repatriate profits in local currency, yet it is unable to exchange its local currency profits for a world currency. In this situation, the firm seeks to export product (either manufactured by itself or purchased with the local currency) at a low price for sale at home to gain the revenue in its home currency. This can likewise avoid local restrictions on the amount of dividend that can be declared or repatriated.

To win host-country approval:

- To avoid accusations of overcharging locals for product or of exporting unfair amounts of value from the country, the MNE may set a transfer price that seems fair to the authorities.

To disguise profitability of a subsidiary:

- The MNE may deliberately declare low profits in an operating country to prevent local businesses setting up in competition.

To enable penetration pricing:

- The MNE may allow an operating subsidiary to receive inputs at low prices in order that these may be passed on in the local market as low final good prices. This will help the MNE to destroy local competitors without the subsidiary's low profits provoking the authorities to accuse it of tax avoidance.

Ex :

- Which of the following statements concerning using transfer prices in multinational companies is correct
- A. If an internal supplier operates in a country with a higher corporate tax rate than an internal buyer, it is in the organization's best interest that the transfer price be relatively high.
 - B. The corporate tax rate for an internal supplier and internal buyer should not impact the preferred transfer price used for the transaction.
 - C. If an internal supplier operates in a country with a higher corporate tax rate than an internal buyer, it is in the organization's best interest that the transfer price be relatively low.
 - D. If an internal supplier operates in a country with a lower corporate tax rate than an internal buyer, it is in the organization's best interest that the transfer price be relatively low.



TARGET
Academy

THE END

ABC

Activity Based Costing

ABC is an Accounting Methodology that Assign cost to activities rather than product or services.

ABC assign cost to activities based on their use of resources and assign the cost to cost objects.

Types of Activities

UNIT level

These are the activities for which the consumption of resources can be identified with the number of units produced.

BATCH level

The cost of some activities are driven by Number of batches of units produced.

PRODUCT level

The cost of some activities are driven by creation of a new product line and its maintenance.

FACILITY level

Some cost cannot related to a particular product line, instead they are related to maintaining the building and facilities.

Cost Driver

Any factor which affects the total cost

Cost Object

Item for which cost data is accumulated

Steps In ABC

- Identify the Activities
- Get the Cost pool Details
- Identify cost driver for each activities
- Calculate cost per unit of cost of driver
- Absorb activity costs into production based on usage of cost drivers

Benefits Of ABC

Cost Control & Cost Reduction

Better costing information used to assist pricing decisions

Profitable analysis

More Realistic Estimation

Limitations Of ABC



Techniques to recover OH



- Ex
- M/s HMB Limited is producing a product in 10 batches each of 15,000 units in a year incurring the following overheads their on

Particulars	
Material procurement	22,50,000
Maintenance	17,30,000
Set-up	6,84,500
Quality control	5,14,800

- The prime cost for the year amounted to `3,01,39,000. The company is using currently the method of absorbing overheads on the basis of prime cost. Now it wants to shift to activity based costing
- INFORMATION RELEVANT TO ACTIVITY DRIVERS FOR A YEAR ARE AS UNDER

Activity driver	Activity volume
No .of purchase orders	1,500
Maintenance hours	9,080
No .of set-ups	2,250
No .of inspections	2,710

- The company has produced a batch of 15,000 units and has incurred `26,38,700 and `3,75,200 on materials and wages respectively
- THE USAGE OF ACTIVITIES OF THE SAID BATCH ARE AS FOLLOWS:

Activity driver	Activity volume
Material orders	48
Maintenance	810
Hours no. Of set	40
Ups	25
No .of inspections	

- YOU ARE REQUIRED TO:
 - Find out cost of product per unit on absorption costing basis for the said batch.
 - Determine cost driver rate, total cost and cost per unit of output of the said batch on the basis of activity based costing.

ANSWER

1. STATEMENT SHOWING UNIT COST USING ABSORPTION COSTING METHOD

Particulars	
Direct	26,38,700
Material	3,75,200
Direct	30,13,900
Labour	5,17,930
Prime cost	35,31,830
Production over head @ 17.1847% of prime cost	15,000
Total cost	235.46
Number of units	
Cost per unit	

2. CALCULATION OF OVERHEAD RATE:

3. Overheads Recovery Rate = $(\text{Total Overheads} \div \text{Total Prime Cost}) \times 100$

STATEMENT SHOWING UNIT COST AND TOTAL COST USING ABC METHOD

Particulars	
Direct material direct labour	26,38,700
Prime cost	3,75,200
Production overhead	30,13,900
Material procurement (1,500x 48 orders) maintenance	
(190.53 x 810 hours)	72,000
Set up (304 .22 x 40 set ups)quality control	1,54,329
(189.96 x 25 inspections)	12,169
Total cost	4,749
Number of units	32,57,147
Cost per unit	15,000

STATEMENT SHOWING DETERMINATION OF COST DRIVER RATE

<i>Activity cost pool</i>	<i>Cost driver</i>	<i>Amount</i>	<i>Volume</i>	<i>Cost driver rate</i>
Material procurement	Material orders	22,50,000	1,500	1,500 per order
Maintenance	Maintenance hours	17,30,000	9,080	190.53 per hour
Set-up	No. of set-ups	6,84,500	2,250	304,22 per set-up
Quality control	No. of inspections	5,14,800	2,710	189.96 per inspections



THE END

5. LEARNING CURVE

When a worker performs job repeatedly, the time taken gradually decreases due to learning effect.

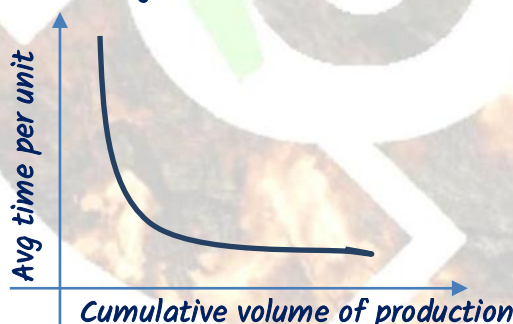
Learning effect happens because he becomes more familiar with the job, identifies better tooling methods, eliminates unnecessary activities or non value added activities etc.

The rate at which the curve slopes downwards is called learning rate and is expressed as a %.

A learning rate of 80% means, every time the production doubles, the average time per unit becomes 80% of previous averages. It can be understood as follows

Units	Avg time (in hrs)
1	100
2	
4	
8	

► Graphical presentation of learning curve



The learning curve will never touch X axis, after certain number of units, it straightens and begins to run parallel to X axis. At this stage the learning is said to have reached saturation point or learning effect ceases.

USES OF LEARNING CURVE

- Great opportunities for cost reduction
- basis for correct staffing
- make-or- buy decisions
- rate of production increases

FACTORS AFFECTING LEARNING CURVE

- Labour Turnover Rate – a high labour turnover rate requires the management to train the new workers frequently and hence the company never achieves the maximum efficiency potential.
- Changes in product design, production system etc. which requires the learning curve to start afresh.
- Labour Strike, shut down, lock outs also affect learning curve as they interrupt the learning process.

NON APPLICABILITY

- Atomized operations involving negligible human element
- Jobs performed are non repetitive
- Job performed by highly experienced work force, which has already reached saturation point w.r.t learning

Decimal Function	Log function
$A \times B$	$\log A + \log B$
A/B	$\log A - \log B$
A^B	$B \log A$
$A + B$	$\log [A+B]$
$A - B$	$\log [A-B]$

Ex :

Direct Labour hours to assemble the first unit of new equipment were 400. Assuming that this type of assemble will experience a learning effect of 90%.

Compute avg direct labour for 3rd and 4th units

Units (x)	Cumulative time (Y)	avg per unit	Total time in Hrs	Inc hrs	Inc units	Avg time for inc units
1	400		$400 \times 1 = 400$	400	1	400
2	$400 \times 90\% = 360$		$360 \times 2 = 720$	320	1	320
4	$360 \times 90\% = 324$		$324 \times 4 = 1296$	576	2	$576/2 = 288$
8	$324 \times 90\% = 291.6$		$291.6 \times 8 = 2332.8$	1036.8	4	$1036.8/4 = 259.2$

If average time is asked in between doubling (twice), problem cannot be solved in the form of table as attempted above.

In this situation one has to use the following formula

- ▶ $Y = ax^b$
- ▶ Y = Cumulative avg time per unit for x units
- ▶ a = Time required for first unit
- ▶ X = target units
- ▶ $b = \log p / \log 2$
- ▶ $\log p$ = learning rate **QUESTION 1:**
- ▶ The usual learning curve model is $Y = ax^b$ where Y is the average time per unit for x units.
- ▶ a is the time for first unit
- ▶ x is the cumulative number of units
- ▶ b is equal to $\log 0.8 / \log 2 = 0.322$ of a learning rate of 80%
- ▶ Given that
- ▶ $a = 10$ hours and learning rate 80%, you are required to
- ▶ Calculate:
- ▶ The average time for 20 units.
- ▶ The total time for 30 units.
- ▶ The time for units 31 to 40.
- ▶ Given that

- ▶ $\log 2 = 0.301$, Antilog of $0.5811 = 3.812$
- ▶ $\log 3 = 0.4771$, Antilog of $0.5244 = 3.345$.
- ▶ $\log 4 = 0.6021$, Antilog of $0.4841 = 3.049$.

QUESTION 2

Calculate the expected average units cost of making. 4 machines (b) 8 machines

- ▶ Using the data below:

▶ Direct Labour need to make first machine = 1,000 hrs. Learning curve = 90%

▶ Direct Labour cost = ₹15 per hour.

▶ Direct materials cost = ₹1,50,000

▶ Fixed cost for either size orders = ₹80,000. **QUESTION 3**

▶ A firm received an order to make and supply eight units of standard product which involves intricate

labour operations. The first unit was made in 10 hours. It is understood that this type of operations is subject to 80% learning rate. The workers are getting a wages rate of ₹12 per hour.

▶ What is the total time and labour cost required to execute the above order?

▶ If a repeat order of 24 units is also received from the same customer, what is the labour cost necessary for the second order?

LOG VALUES

Number	No. of digits	No. of digits - 1	Table value	Log value
4000	4	3	0.6021	3.6021
400	3	2	0.6021	2.6021
40	2	1	0.6021	1.6021
4	1	0	0.6021	0.6021
4568	4	4	0.6598	3.6598

ANTI - LOG VALUES

Log value	Decimal portion	Table value	Multiply by	Number
3.6021	0.6021	0.4000	10000	4000
2.6021	0.6021	0.4000	1000	400
1.6021	0.6021	0.4000	100	40
0.6021	0.6021	0.4000	10	4
3.6598	0.6598	0.4568	10000	4568

LOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean Difference								
											1	2	3	4	5	6	7	8	9
10	0000	0043	0086	0128	0170	0212	0253	0294	0334	0374	4	8	12	17	21	25	29	33	37
11	0414	0453	0492	0531	0569	0607	0645	0682	0719	0755	4	8	11	15	19	23	26	30	34
12	0792	0828	0864	0899	0934	0969	1004	1038	1072	1106	3	7	10	14	17	21	24	28	31
13	1139	1173	1206	1239	1271	1303	1335	1367	1399	1430	3	6	10	13	16	19	23	26	29
14	1461	1492	1523	1553	1584	1614	1644	1673	1703	1732	3	6	9	12	15	18	21	24	27
15	1761	1790	1818	1847	1875	1903	1931	1959	1987	2014	3	6	8	11	14	17	20	22	25
16	2041	2068	2095	2122	2148	2175	2201	2227	2253	2279	3	5	8	11	13	16	18	21	24
17	2304	2330	2355	2380	2405	2430	2455	2480	2504	2529	2	5	7	10	12	15	17	20	22
18	2553	2577	2601	2625	2648	2672	2695	2718	2742	2765	2	5	7	9	12	14	16	19	21
19	2788	2810	2833	2856	2878	2900	2923	2945	2967	2989	2	4	7	9	11	13	16	18	20
20	3010	3032	3054	3075	3096	3118	3139	3160	3181	3201	2	4	6	8	11	13	15	17	19
21	3222	3243	3263	3284	3304	3324	3345	3365	3385	3404	2	4	6	8	10	12	14	16	18
22	3424	3444	3464	3483	3502	3522	3541	3560	3579	3598	2	4	6	8	10	12	14	15	17
23	3617	3636	3655	3674	3692	3711	3729	3747	3766	3784	2	4	6	7	9	11	13	15	17
24	3802	3820	3838	3856	3874	3892	3909	3927	3945	3962	2	4	5	7	9	11	12	14	16
25	3979	3997	4014	4031	4048	4065	4082	4099	4116	4133	2	3	5	7	9	10	12	14	15
26	4150	4166	4183	4200	4216	4232	4249	4265	4281	4298	2	3	5	7	8	10	11	13	15
27	4314	4330	4346	4362	4378	4393	4409	4425	4440	4456	2	3	5	6	8	9	11	13	14
28	4472	4487	4502	4518	4533	4548	4564	4579	4594	4609	2	3	5	6	8	9	11	12	14
29	4624	4639	4654	4669	4683	4698	4713	4728	4742	4757	1	3	4	6	7	9	10	12	13
30	4771	4786	4800	4814	4829	4843	4857	4871	4886	4900	1	3	4	6	7	9	10	11	13
31	4914	4928	4942	4955	4969	4983	4997	5011	5024	5038	1	3	4	6	7	8	10	11	12
32	5051	5065	5079	5092	5105	5119	5132	5145	5159	5172	1	3	4	5	7	8	9	11	12
33	5185	5198	5211	5224	5237	5250	5263	5276	5289	5302	1	3	4	5	6	8	9	10	12
34	5315	5328	5340	5353	5366	5378	5391	5403	5416	5428	1	3	4	5	6	8	9	10	11
35	5441	5453	5465	5478	5490	5502	5514	5527	5539	5551	1	2	4	5	6	7	9	10	11
36	5563	5575	5587	5598	5611	5623	5635	5647	5658	5670	1	2	4	5	6	7	8	10	11
37	5682	5694	5705	5717	5729	5740	5752	5763	5775	5786	1	2	3	5	6	7	8	9	10
38	5798	5809	5821	5832	5843	5855	5866	5877	5888	5899	1	2	3	5	6	7	8	9	10
39	5911	5922	5933	5944	5955	5966	5977	5988	5999	6010	1	2	3	4	5	7	8	9	10
40	6021	6031	6042	6053	6064	6075	6085	6096	6107	6117	1	2	3	4	5	6	8	9	10
41	6128	6138	6149	6160	6170	6180	6191	6201	6212	6222	1	2	3	4	5	6	7	8	9
42	6232	6243	6253	6263	6274	6284	6294	6304	6314	6325	1	2	3	4	5	6	7	8	9
43	6335	6345	6355	6365	6375	6385	6395	6405	6415	6425	1	2	3	4	5	6	7	8	9
44	6435	6445	6454	6464	6474	6484	6493	6503	6513	6522	1	2	3	4	5	6	7	8	9
45	6532	6542	6551	6561	6571	6580	6590	6599	6609	6618	1	2	3	4	5	6	7	8	9
46	6628	6637	6646	6656	6665	6675	6684	6693	6702	6712	1	2	3	4	5	6	7	7	8
47	6721	6730	6739	6749	6758	6767	6776	6785	6794	6803	1	2	3	4	5	5	6	7	8
48	6812	6821	6830	6839	6848	6857	6866	6875	6884	6893	1	2	3	4	4	5	6	7	8
49	6902	6911	6920	6928	6937	6946	6955	6964	6972	6981	1	2	3	4	4	5	6	7	8
50	6990	6998	7007	7016	7024	7033	7042	7050	7059	7067	1	2	3	3	4	5	6	7	8
51	7076	7084	7093	7101	7110	7118	7126	7135	7143	7152	1	2	3	3	4	5	6	7	8
52	7160	7168	7177	7185	7193	7202	7210	7218	7226	7235	1	2	2	3	4	5	6	7	7
53	7243	7251	7259	7267	7275	7284	7292	7300	7308	7316	1	2	2	3	4	5	6	6	7
54	7324	7332	7340	7348	7356	7364	7372	7380	7388	7396	1	2	2	3	4	5	6	6	7
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9

LOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean Difference								
											1	2	3	4	5	6	7	8	9
55	7404	7412	7419	7427	7435	7443	7451	7459	7466	7474	1	2	2	3	4	5	5	6	7
56	7482	7490	7497	7505	7513	7520	7528	7536	7543	7551	1	2	2	3	4	5	5	6	7
57	7559	7566	7574	7582	7589	7597	7604	7612	7619	7627	1	2	2	3	4	5	5	6	7
58	7634	7642	7649	7657	7664	7672	7679	7686	7694	7701	1	1	2	3	4	4	5	6	7
59	7709	7716	7723	7731	7738	7745	7752	7760	7767	7774	1	1	2	3	4	4	5	6	7
60	7782	7789	7796	7803	7810	7818	7825	7832	7839	7846	1	1	2	3	4	4	5	6	6
61	7853	7860	7868	7875	7882	7889	7896	7903	7910	7917	1	1	2	3	4	4	5	6	6
62	7924	7931	7938	7945	7952	7959	7966	7973	7980	7987	1	1	2	3	3	4	5	6	6
63	7993	8000	8007	8014	8021	8028	8035	8041	8048	8055	1	1	2	3	3	4	5	5	6
64	8062	8069	8075	8082	8089	8096	8102	8109	8116	8122	1	1	2	3	3	4	5	5	6
65	8129	8136	8142	8149	8156	8162	8169	8176	8182	8189	1	1	2	3	3	4	5	5	6
66	8195	8202	8209	8215	8222	8228	8235	8241	8248	8254	1	1	2	3	3	4	5	5	6
67	8261	8267	8274	8280	8287	8293	8299	8306	8312	8319	1	1	2	3	3	4	5	5	6
68	8325	8331	8338	8344	8351	8357	8363	8370	8376	8382	1	1	2	3	3	4	4	5	6
69	8388	8395	8401	8407	8414	8420	8426	8432	8439	8445	1	1	2	2	3	4	4	5	6
70	8451	8457	8463	8470	8476	8482	8488	8494	8500	8506	1	1	2	2	3	4	4	5	6
71	8513	8519	8525	8531	8537	8543	8549	8555	8561	8567	1	1	2	2	3	4	4	5	5
72	8573	8579	8585	8591	8597	8603	8609	8615	8621	8627	1	1	2	2	3	4	4	5	5
73	8633	8639	8645	8651	8657	8663	8669	8675	8681	8686	1	1	2	2	3	4	4	5	5
74	8692	8698	8704	8710	8716	8722	8727	8733	8739	8745	1	1	2	2	3	4	4	5	5
75	8751	8756	8762	8768	8774	8779	8785	8791	8797	8802	1	1	2	2	3	3	4	5	5
76	8808	8814	8820	8825	8831	8837	8842	8848	8854	8859	1	1	2	2	3	3	4	5	5
77	8865	8871	8876	8882	8887	8893	8899	8904	8910	8915	1	1	2	2	3	3	4	4	5
78	8921	8927	8932	8938	8943	8949	8954	8960	8965	8971	1	1	2	2	3	3	4	4	5
79	8976	8982	8987	8993	8998	9004	9009	9015	9020	9025	1	1	2	2	3	3	4	4	5
80	9031	9036	9042	9047	9053	9058	9063	9069	9074	9079	1	1	2	2	3	3	4	4	5
81	9085	9090	9096	9101	9106	9112	9117	9122	9128	9133	1	1	2	2	3	3	4	4	5
82	9138	9143	9149	9154	9159	9165	9170	9175	9180	9186	1	1	2	2	3	3	4	4	5
83	9191	9196	9201	9206	9212	9217	9222	9227	9232	9238	1	1	2	2	3	3	4	4	5
84	9243	9248	9253	9258	9263	9269	9274	9279	9284	9289	1	1	2	2	3	3	4	4	5
85	9294	9299	9304	9309	9315	9320	9325	9330	9335	9340	1	1	2	2	3	3	4	4	5
86	9345	9350	9355	9360	9365	9370	9375	9380	9385	9390	1	1	2	2	3	3	4	4	5
87	9395	9400	9405	9410	9415	9420	9425	9430	9435	9440	0	1	1	2	2	3	3	4	4
88	9445	9450	9455	9460	9465	9469	9474	9479	9484	9489	0	1	1	2	2	3	3	4	4
89	9494	9499	9504	9509	9513	9518	9523	9528	9533	9538	0	1	1	2	2	3	3	4	4
90	9542	9547	9552	9557	9562	9566	9571	9576	9581	9586	0	1	1	2	2	3	3	4	4
91	9590	9595	9600	9605	9609	9614	9619	9624	9628	9633	0	1	1	2	2	3	3	4	4
92	9638	9643	9647	9652	9657	9661	9666	9671	9675	9680	0	1	1	2	2	3	3	4	4
93	9685	9689	9694	9699	9703	9708	9713	9717	9722	9727	0	1	1	2	2	3	3	4	4
94	9731	9736	9741	9745	9750	9754	9759	9763	9768	9773	0	1	1	2	2	3	3	4	4
95	9777	9782	9786	9791	9795	9800	9805	9809	9814	9818	0	1	1	2	2	3	3	4	4
96	9823	9827	9832	9836	9841	9845	9850	9854	9859	9863	0	1	1	2	2	3	3	4	4
97	9868	9872	9877	9881	9886	9890	9894	9899	9903	9908	0	1	1	2	2	3	3	4	4
98	9912	9917	9921	9926	9930	9934	9939	9943	9948	9952	0	1	1	2	2	3	3	4	4
99	9956	9961	9965	9969	9974	9978	9983	9987	9991	9996	0	1	1	2	2	3	3	3	4
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9

ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean Difference								
											1	2	3	4	5	6	7	8	9
.00	1000	1002	1005	1007	1009	1012	1014	1016	1019	1021	0	0	1	1	1	1	2	2	2
.01	1023	1026	1028	1030	1033	1035	1038	1040	1042	1045	0	0	1	1	1	1	2	2	2
.02	1047	1050	1052	1054	1057	1059	1062	1064	1067	1069	0	0	1	1	1	1	2	2	2
.03	1072	1074	1076	1079	1081	1084	1086	1089	1091	1094	0	0	1	1	1	1	2	2	2
.04	1096	1099	1102	1104	1107	1109	1112	1114	1117	1119	0	1	1	1	1	2	2	2	2
.05	1122	1125	1127	1130	1132	1135	1138	1140	1143	1146	0	1	1	1	1	2	2	2	2
.06	1148	1151	1153	1156	1159	1161	1164	1167	1169	1172	0	1	1	1	1	2	2	2	2
.07	1175	1178	1180	1183	1186	1189	1191	1194	1197	1199	0	1	1	1	1	2	2	2	2
.08	1202	1205	1208	1211	1213	1216	1219	1222	1225	1227	0	1	1	1	1	2	2	2	3
.09	1230	1233	1236	1239	1242	1245	1247	1250	1253	1256	0	1	1	1	1	2	2	2	3
.10	1259	1262	1265	1268	1271	1274	1276	1279	1282	1285	0	1	1	1	1	2	2	2	3
.11	1288	1291	1294	1297	1300	1303	1306	1309	1312	1315	0	1	1	1	2	2	2	2	3
.12	1318	1321	1324	1327	1330	1334	1337	1340	1343	1346	0	1	1	1	2	2	2	2	3
.13	1349	1352	1355	1358	1361	1365	1368	1371	1374	1377	0	1	1	1	2	2	2	3	3
.14	1380	1384	1387	1390	1393	1396	1400	1403	1406	1409	0	1	1	1	2	2	2	3	3
.15	1413	1416	1419	1422	1426	1429	1432	1435	1439	1442	0	1	1	1	2	2	2	3	3
.16	1445	1449	1452	1455	1459	1462	1466	1469	1472	1476	0	1	1	1	2	2	2	3	3
.17	1479	1483	1486	1489	1493	1496	1500	1503	1507	1510	0	1	1	1	2	2	2	3	3
.18	1514	1517	1521	1524	1528	1531	1535	1538	1542	1545	0	1	1	1	2	2	2	3	3
.19	1549	1552	1556	1560	1563	1567	1570	1574	1578	1581	0	1	1	1	2	2	2	3	3
.20	1585	1589	1592	1596	1600	1603	1607	1611	1614	1618	0	1	1	1	2	2	2	3	3
.21	1622	1626	1629	1633	1637	1641	1644	1648	1652	1656	0	1	1	2	2	2	2	3	3
.22	1660	1663	1667	1671	1675	1679	1683	1687	1690	1694	0	1	1	2	2	2	2	3	3
.23	1698	1702	1706	1710	1714	1718	1722	1726	1730	1734	0	1	1	2	2	2	2	3	4
.24	1738	1742	1746	1750	1754	1758	1762	1766	1770	1774	0	1	1	2	2	2	2	3	4
.25	1778	1782	1786	1791	1795	1799	1803	1807	1811	1816	0	1	1	2	2	2	2	3	4
.26	1820	1824	1828	1832	1837	1841	1845	1849	1854	1858	0	1	1	2	2	2	2	3	4
.27	1862	1866	1871	1875	1879	1884	1888	1892	1897	1901	0	1	1	2	2	2	2	3	4
.28	1905	1910	1914	1919	1923	1928	1932	1936	1941	1945	0	1	1	2	2	2	2	3	4
.29	1950	1954	1959	1963	1968	1972	1977	1982	1986	1991	0	1	1	2	2	2	2	3	4
.30	1995	2000	2004	2009	2014	2018	2023	2028	2032	2037	0	1	1	2	2	2	2	3	4
.31	2042	2046	2051	2056	2061	2065	2070	2075	2080	2084	0	1	1	2	2	2	2	3	4
.32	2089	2094	2099	2104	2109	2113	2118	2123	2128	2133	0	1	1	2	2	2	2	3	4
.33	2138	2143	2148	2153	2158	2163	2168	2173	2178	2183	0	1	1	2	2	2	2	3	4
.34	2188	2193	2198	2203	2208	2213	2218	2223	2228	2234	1	1	2	2	2	2	2	3	4
.35	2239	2244	2249	2254	2259	2265	2270	2275	2280	2286	1	1	2	2	2	2	2	3	4
.36	2291	2296	2301	2307	2312	2317	2323	2328	2333	2339	1	1	2	2	2	2	2	3	4
.37	2344	2350	2355	2360	2366	2371	2377	2382	2388	2393	1	1	2	2	2	2	2	3	4
.38	2399	2404	2410	2415	2421	2427	2432	2438	2443	2449	1	1	2	2	2	2	2	3	4
.39	2455	2460	2466	2472	2477	2483	2489	2495	2500	2506	1	1	2	2	2	2	2	3	4
.40	2512	2518	2523	2529	2535	2541	2547	2553	2559	2564	1	1	2	2	2	2	2	3	4
.41	2570	2576	2582	2588	2594	2600	2606	2612	2618	2624	1	1	2	2	2	2	2	3	4
.42	2630	2636	2642	2649	2655	2661	2667	2673	2679	2685	1	1	2	2	2	2	2	3	4
.43	2692	2698	2704	2710	2716	2723	2729	2735	2742	2748	1	1	2	2	2	2	2	3	4
.44	2754	2761	2767	2773	2780	2786	2793	2799	2805	2812	1	1	2	2	2	2	2	3	4
.45	2818	2825	2831	2838	2844	2851	2858	2864	2871	2877	1	1	2	2	2	2	2	3	4
.46	2884	2891	2897	2904	2911	2917	2924	2931	2938	2944	1	1	2	2	2	2	2	3	4
.47	2951	2958	2965	2972	2979	2985	2992	2999	3006	3013	1	1	2	2	2	2	2	3	4
.48	3020	3027	3034	3041	3048	3055	3062	3069	3076	3083	1	1	2	2	2	2	2	3	4
.49	3090	3097	3105	3112	3119	3126	3133	3141	3148	3155	1	1	2	2	2	2	2	3	4
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9

ANTILOGARITHMS

	0	1	2	3	4	5	6	7	8	9	Mean Difference								
											1	2	3	4	5	6	7	8	9
.50	3162	3170	3177	3184	3192	3199	3206	3214	3221	3228	1	1	2	3	4	4	5	6	7
.51	3236	3243	3251	3258	3266	3273	3281	3289	3296	3304	1	2	2	3	4	5	5	6	7
.52	3311	3319	3327	3334	3342	3350	3357	3365	3373	3381	1	2	2	3	4	5	5	6	7
.53	3388	3396	3404	3412	3420	3428	3436	3443	3451	3459	1	2	2	3	4	5	6	6	7
.54	3467	3475	3483	3491	3499	3508	3516	3524	3532	3540	1	2	2	3	4	5	6	6	7
.55	3548	3556	3565	3573	3581	3589	3597	3606	3614	3622	1	2	2	3	4	5	6	7	7
.56	3631	3639	3648	3656	3664	3673	3681	3690	3698	3707	1	2	3	3	4	5	6	7	8
.57	3715	3724	3733	3741	3750	3758	3767	3776	3784	3793	1	2	3	3	4	5	6	7	8
.58	3802	3811	3819	3828	3837	3846	3855	3864	3873	3882	1	2	3	4	4	5	6	7	8
.59	3890	3899	3908	3917	3926	3936	3945	3954	3963	3972	1	2	3	4	5	5	6	7	8
.60	3981	3990	3999	4009	4018	4027	4036	4046	4055	4064	1	2	3	4	5	6	6	7	8
.61	4074	4083	4093	4102	4111	4121	4130	4140	4150	4159	1	2	3	4	5	6	7	8	9
.62	4169	4178	4188	4198	4207	4217	4227	4236	4246	4256	1	2	3	4	5	6	7	8	9
.63	4266	4276	4285	4295	4305	4315	4325	4335	4345	4355	1	2	3	4	5	6	7	8	9
.64	4365	4375	4385	4395	4406	4416	4426	4436	4446	4457	1	2	3	4	5	6	7	8	9
.65	4467	4477	4487	4498	4508	4519	4529	4539	4550	4560	1	2	3	4	5	6	7	8	9
.66	4571	4581	4592	4603	4613	4624	4634	4645	4656	4667	1	2	3	4	5	6	7	9	10
.67	4677	4688	4699	4710	4721	4732	4742	4753	4764	4775	1	2	3	4	5	7	8	9	10
.68	4786	4797	4808	4819	4831	4842	4853	4864	4875	4887	1	2	3	4	6	7	8	9	10
.69	4898	4909	4920	4932	4943	4955	4966	4977	4989	5000	1	2	3	5	6	7	8	9	10
.70	5012	5023	5035	5047	5058	5070	5082	5093	5105	5117	1	2	4	5	6	7	8	9	11
.71	5129	5140	5152	5164	5176	5188	5200	5212	5224	5236	1	2	4	5	6	7	8	10	11
.72	5248	5260	5272	5284	5297	5309	5321	5333	5346	5358	1	2	4	5	6	7	9	10	11
.73	5370	5383	5395	5408	5420	5433	5445	5458	5470	5483	1	3	4	5	6	8	9	10	11
.74	5495	5508	5521	5534	5546	5559	5572	5585	5598	5610	1	3	4	5	6	8	9	10	12
.75	5623	5636	5649	5662	5675	5689	5702	5715	5728	5741	1	3	4	5	7	8	9	10	12
.76	5754	5768	5781	5794	5808	5821	5834	5848	5861	5875	1	3	4	5	7	8	9	11	12
.77	5888	5902	5916	5929	5943	5957	5970	5984	5998	6012	1	3	4	5	7	8	10	11	12
.78	6026	6039	6053	6067	6081	6095	6109	6124	6138	6152	1	3	4	6	7	8	10	11	13
.79	6166	6180	6194	6209	6223	6237	6252	6266	6281	6295	1	3	4	6	7	9	10	11	13
.80	6310	6324	6339	6353	6368	6383	6397	6412	6427	6442	1	3	4	6	7	9	10	12	13
.81	6457	6471	6486	6501	6516	6531	6546	6561	6577	6592	2	3	5	6	8	9	11	12	14
.82	6607	6622	6637	6653	6668	6683	6699	6715	6730	6745	2	3	5	6	8	9	11	12	14
.83	6761	6776	6792	6808	6823	6839	6855	6871	6887	6902	2	3	5	6	8	9	11	13	14
.84	6918	6934	6950	6966	6982	6998	7015	7031	7047	7063	2	3	5	6	8	10	11	13	15
.85	7079	7096	7112	7129	7145	7161	7178	7194	7211	7228	2	3	5	7	8	10	12	13	15
.86	7244	7261	7278	7295	7311	7328	7345	7362	7379	7396	2	3	5	7	8	10	12	13	15
.87	7413	7430	7447	7464	7482	7499	7516	7534	7551	7568	2	3	5	7	9	10	12	14	16
.88	7586	7603	7621	7638	7656	7674	7691	7709	7727	7745	2	4	5	7	9	11	12	14	16
.89	7762	7780	7798	7816	7834	7852	7870	7889	7907	7925	2	4	5	7	9	11	12	14	16
.90	7943	7962	7980	7998	8017	8035	8054	8072	8091	8110	2	4	6	7	9	11	13	15	17
.91	8128	8147	8166	8185	8204	8222	8241	8260	8279	8299	2	4	6	8	9	11	13	15	17
.92	8318	8337	8356	8375	8395	8414	8433	8453	8472	8492	2	4	6	8	10	12	14	15	17
.93	8511	8531	8551	8570	8590	8610	8630	8650	8670	8690	2	4	6	8	10	12	14	16	18
.94	8710	8730	8750	8770	8790	8810	8831	8851	8872	8892	2	4	6	8	10	12	14	16	18
.95	8913	8933	8954	8974	8995	9016	9036	9057	9078	9099	2	4	6	8	10	12	15	17	19
.96	9120	9141	9162	9183	9204	9226	9247	9268	9290	9311	2	4	6	8	11	13	15	17	19
.97	9333	9354	9376	9397	9419	9441	9462	9484	9506	9528	2	4	7	9	11	13	15	17	20
.98	9550	9572	9594	9616	9638	9661	9683	9705	9727	9750	2	4	7	9	11	13	16	18	20
.99	9772	9795	9817	9840	9863	9886	9908	9931	9954	9977	2	5	7	9	11	14	16	18	20
	0	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9

THE END

DIVISIONAL PERFORMANCE MEASUREMENT

Concept of Centralization

Centralization refers to the concentration of power, decision-making, or control within a single entity or a small group, usually at the top of an organization or a system

Concept of Decentralization

Decentralization means spreading out decision-making power or authority across multiple levels or entities instead of keeping it concentrated in one central place

Advantages of Centralization:

Faster decision-making.

Consistency in policies.

Cost savings through efficiency.

Stronger control and oversight.

Disadvantages of Centralization

Limited innovation and flexibility.

Dependency on few leaders.

Potential resistance or dissatisfaction at lower levels

Advantages of Decentralization:

Enhanced creativity and innovation.

Quick adaptation to local needs and situations.

Empowerment of lower-level employees.

Disadvantages of Decentralization:

Inconsistency in policies and procedures.

Potential for duplication of efforts.

Coordination challenges between different units.

Risk of conflicting priorities or goals.

Dupont analysis

It is like breaking down a financial performance report into smaller, more understandable pieces. It helps you see what's really driving profitability. You divide your return on equity into three parts:

Profit Margin:

This tells you how much profit you're making from each dollar of sales.

Asset Turnover:

This shows how efficiently you're using your assets to generate sales.

Leverage:

This reveals how much of your profits come from borrowed money rather than your own investments.

- $\text{Return on Equity} = \text{Net Profit Margin} \times \text{Asset Turnover Ratio} \times \text{Financial Leverage}$
- $= (\text{Net Income} \div \text{Sales}) \times (\text{Sales} \div \text{Total Assets}) \times (\text{Total Assets} \div \text{Total Equity})$

DIVISIONAL PERFORMANCE MEASUREMENT TOOLS – ROI, RESIDUAL INCOME

Return on Investment (ROI):

ROI is like a report card for your investments. It tells you how much profit you're getting back from the money you put in.

To calculate ROI, you divide the profit you've made by the amount you invested. The higher the ROI, the better your investment is performing

Advantages of ROI:

Simple to understand

Easy comparison between investments

Direct measure of profitability

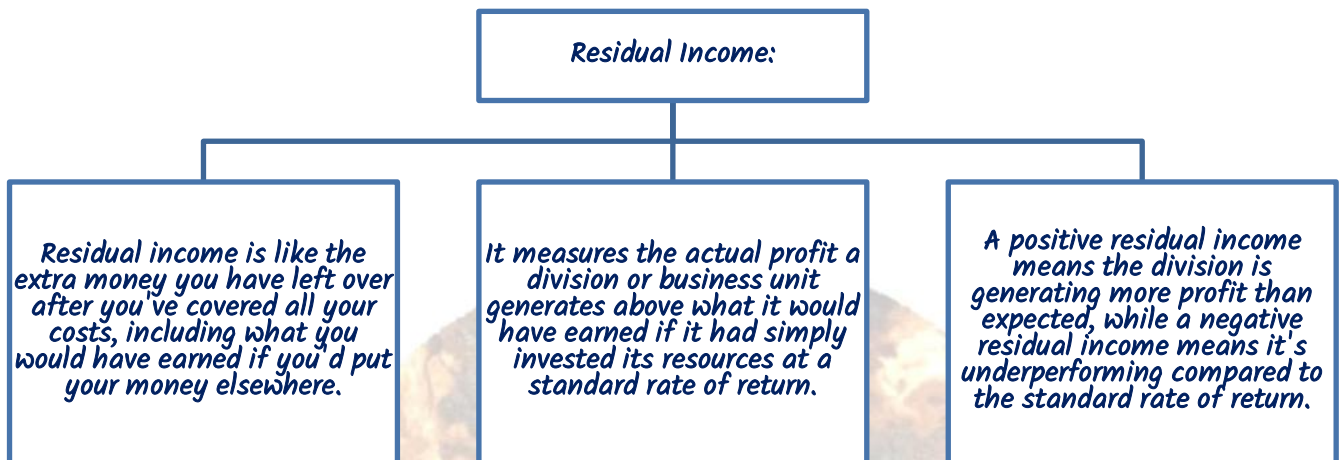
Disadvantages of ROI:

Focuses on short-term gains

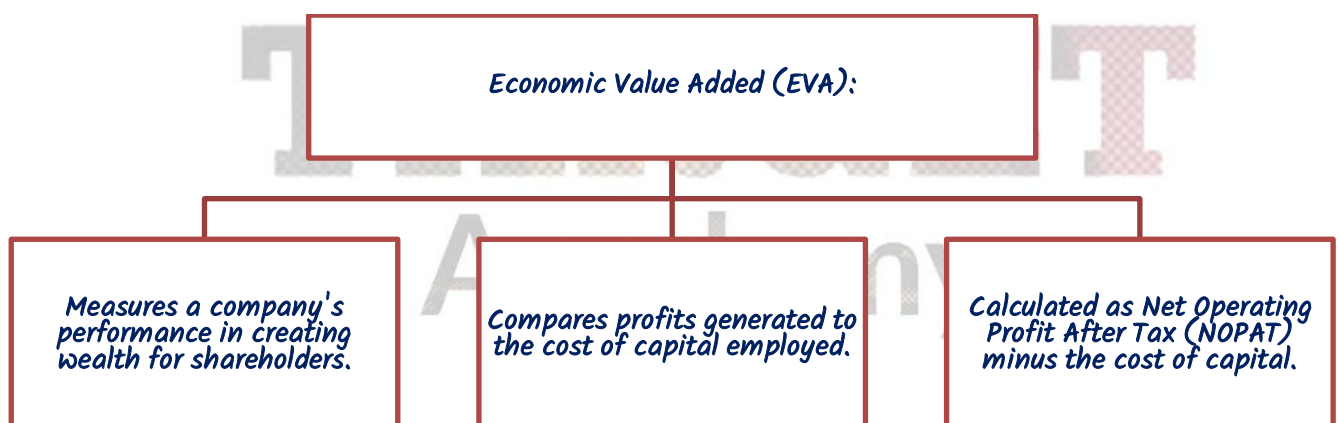
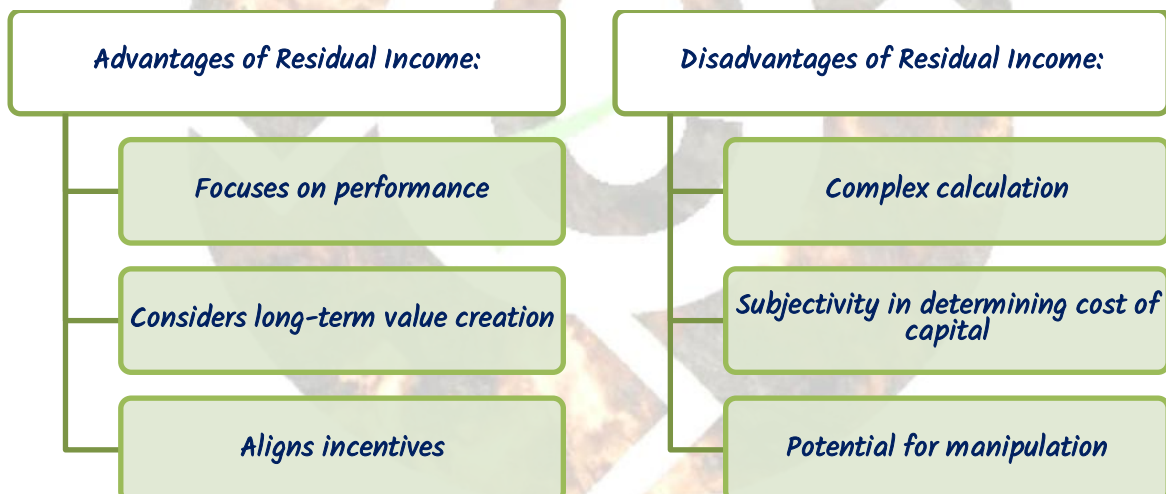
Ignores risk

Limited scope

- Return on investment (ROI) =
 - $(\text{Profit before interest and tax} \div \text{Operations management capital employed}) \times 100$

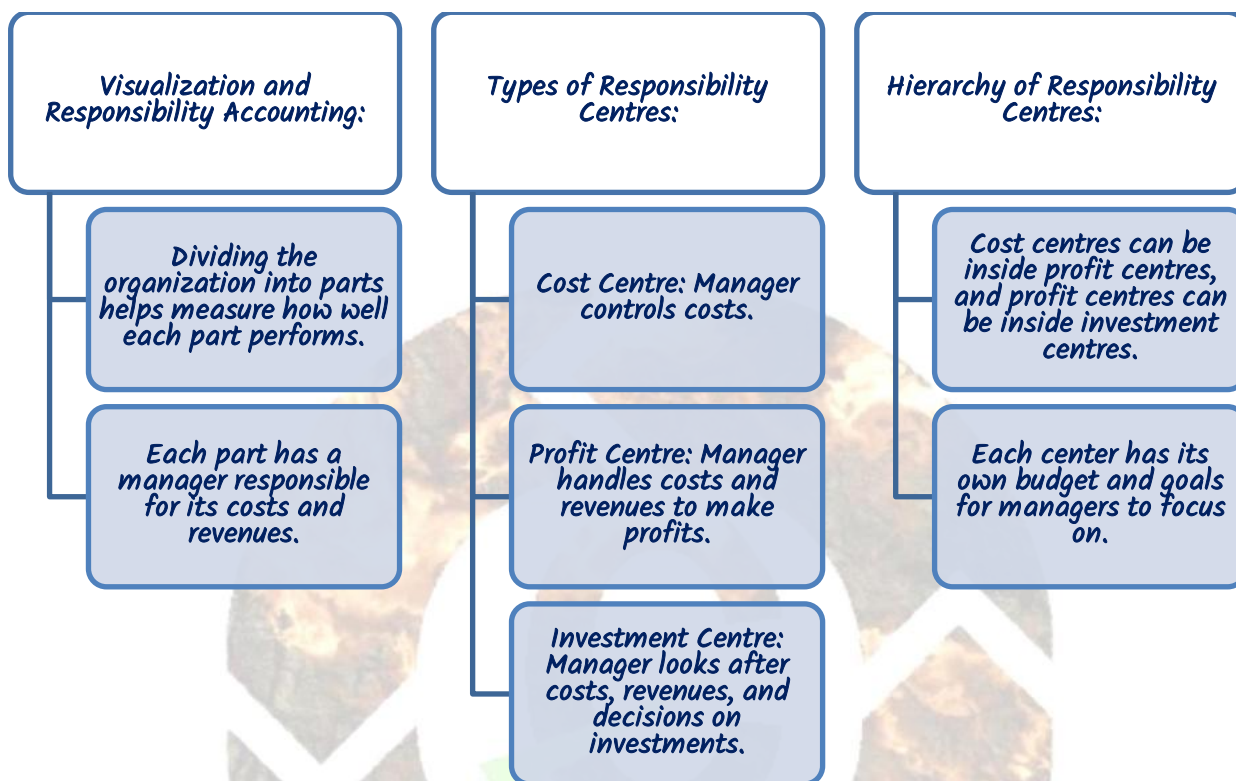


- $RI = \text{Divisional profit} - (\text{Percent capital charge} \times \text{Divisional investment})$



- $EVA = NOPAT - (C \times K)$
- Where:
- NOPAT is net operating profit after tax

- 'C' is the weighted average cost of capital (WACC), which represents the rate that a company is expected to pay on average to all its security holders to finance its assets 'K' is the economic capital employed.



Balance score cards

A balanced scorecard is like a checklist for a company's success.

It Focus on

Multiple Areas:

· It includes different areas important for success, such as customer satisfaction, internal processes, learning and growth, and financial performance.

Balanced View:

· By looking at all these areas together, it gives a balanced view of the company's overall performance.

Improvement Guide:

· It helps the company see where it's doing well and where it needs to improve.

Goal Alignment:

· It ensures that the company's activities are aligned with its goals and objectives.

THE FOUR PERSPECTIVES OF THE BALANCED SCORECARD

Financial Perspective:

Example: Imagine you're running a coffee stand. The financial perspective would be looking at how much money you're making from selling coffee. Are you making a profit, or are you losing money?

Customer Perspective:

Example: For your coffee stand, the customer perspective would be asking if your customers like your coffee. Are they happy with the taste and the service? Do they come back to buy more?

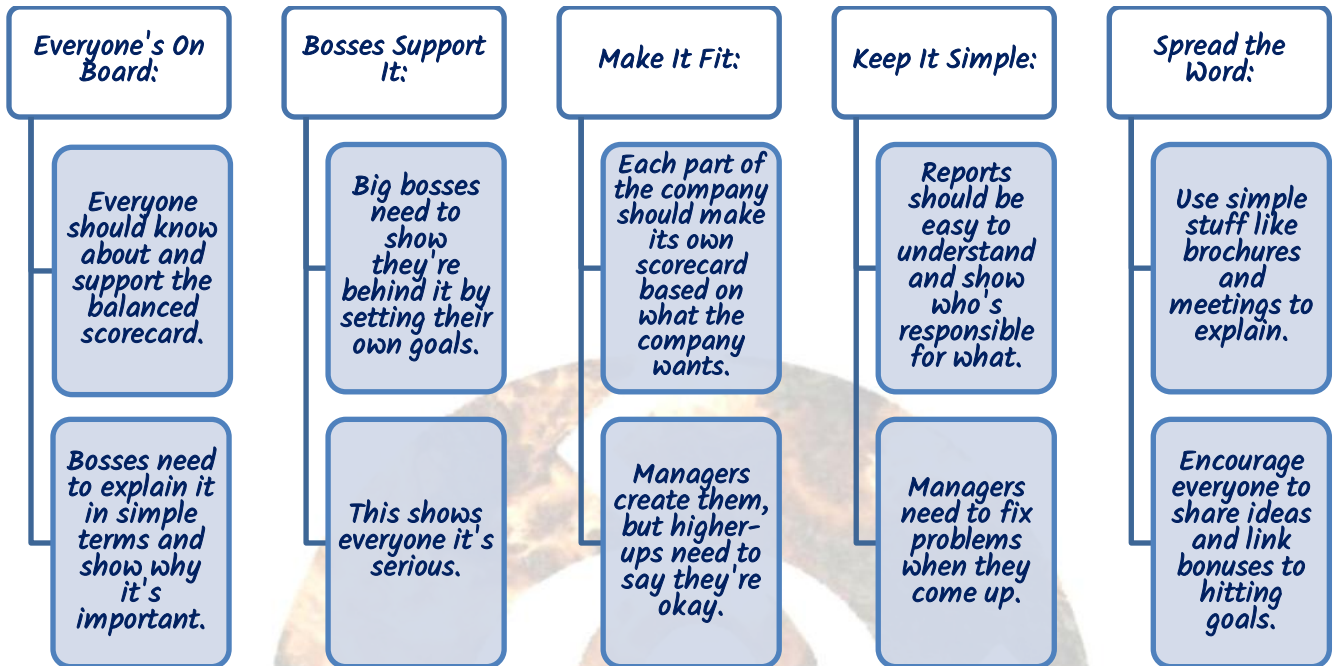
Internal Business Processes Perspective:

Example: Let's say you have a process for making coffee at your stand. The internal business processes perspective would be about how well that process is working. Are you able to make coffee quickly and efficiently? Are there any bottlenecks or problems?

Learning and Growth Perspective:

Example: Now, imagine you want to improve your coffee recipe. The learning and growth perspective would be about how you're doing that. Are you learning new ways to make your coffee taste better? Are you training yourself or your team to serve customers better?

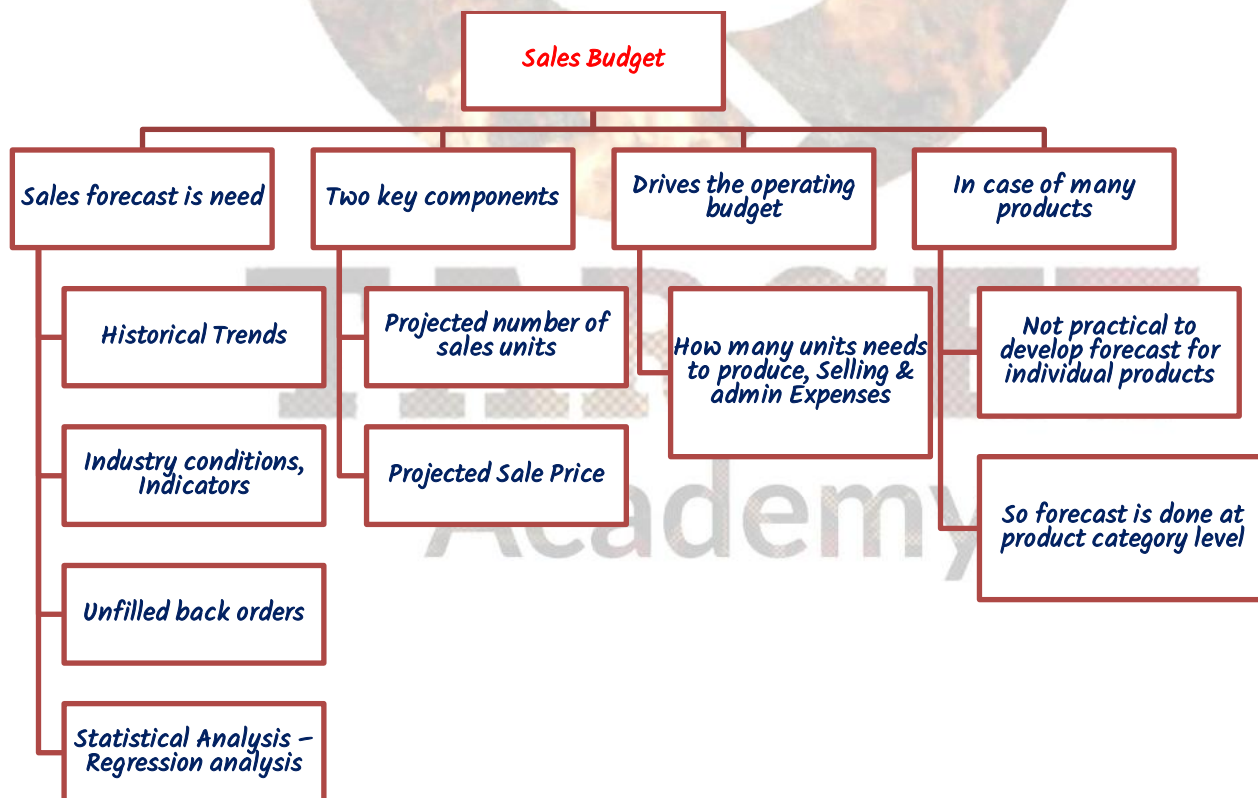
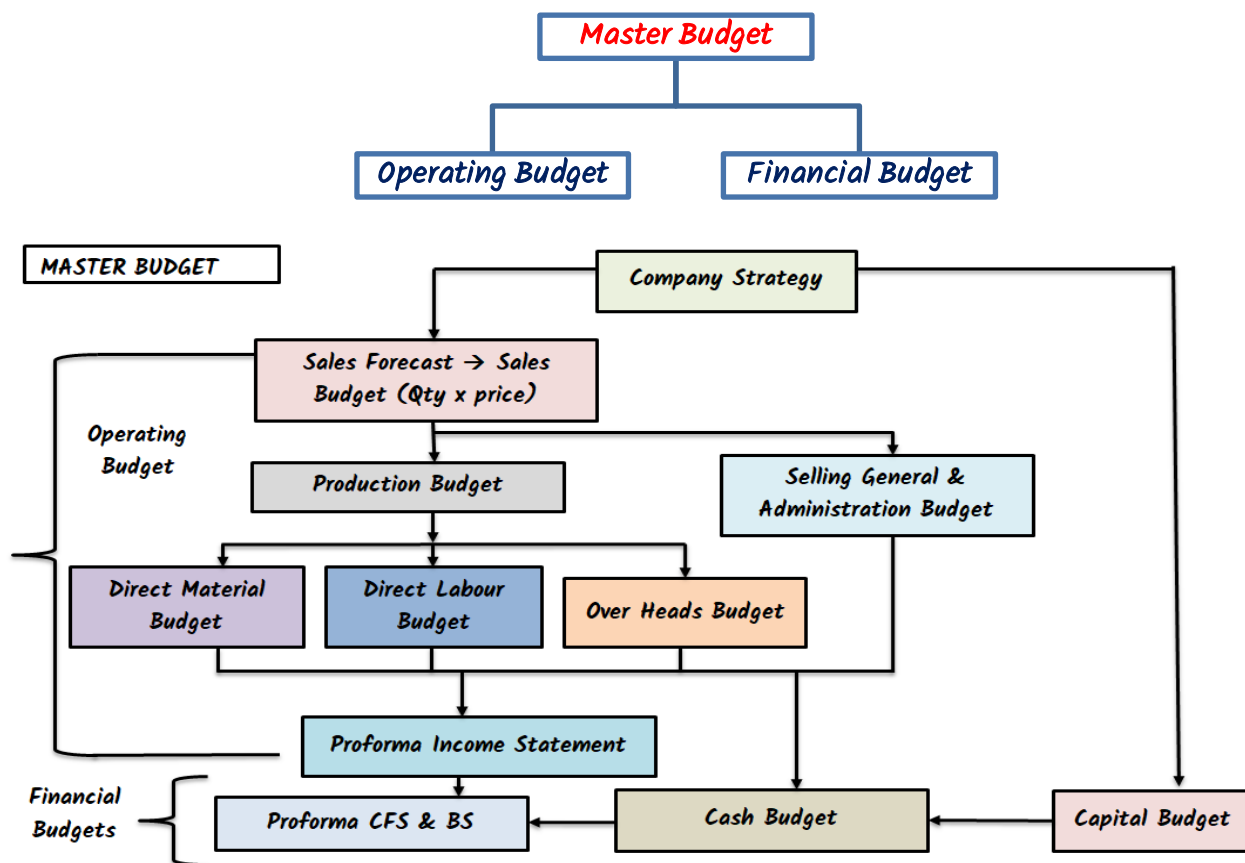
BALANCED SCORECARD: IMPLEMENTATION



TARGET
Academy

THE END

2. BUDGETS



SALES BUDGET

Particulars	
Sales in units	50,000
Selling price per unit	100
Total Sales	5,00,000

Question

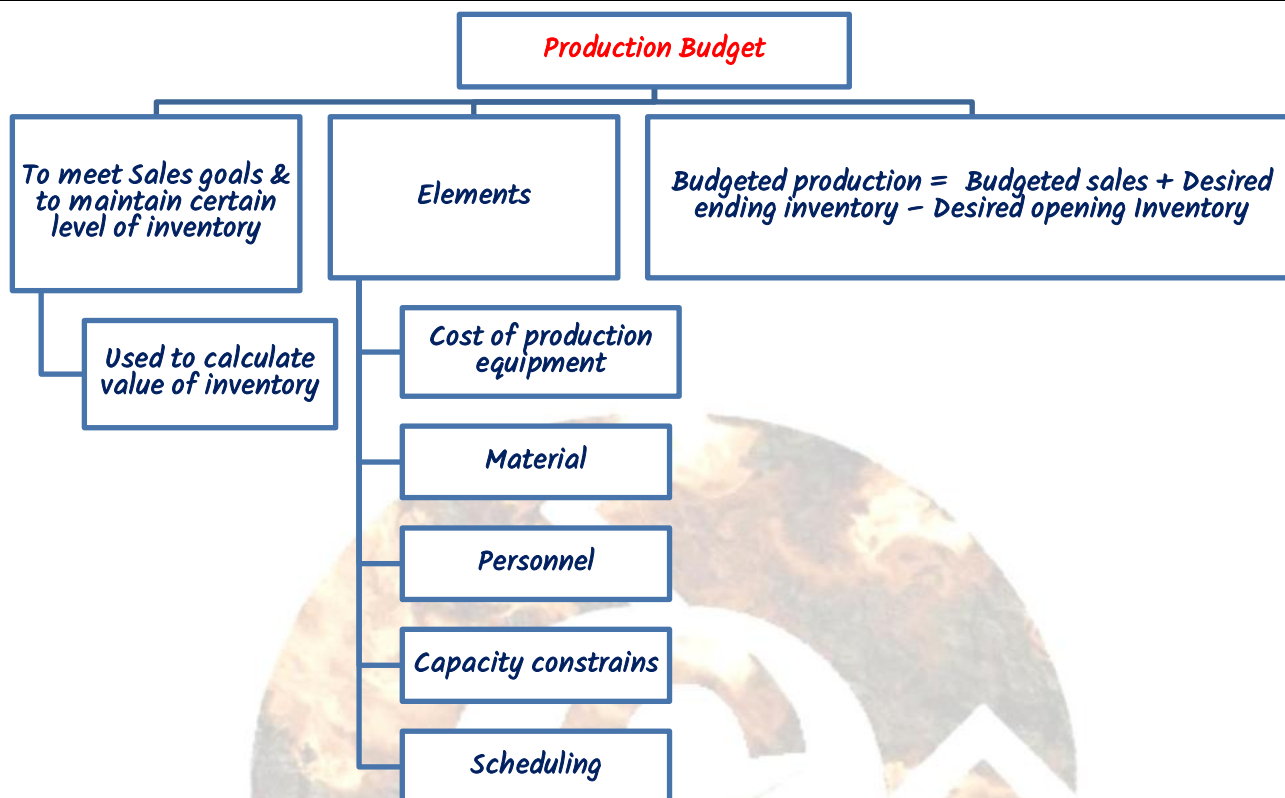
- Estimated sales units for next month are 20,000 units. Estimated sales price for next month is \$. 13 per unit. Find Sales budgeted.
- Ans

SOLUTION:

Question

Particulars	Current quarter	Next quarter
Sales (units)	15,000 units	Increased by 10%
Sale Price (Per unit)	\$. 12 per unit	Decreased by 5%
Find budgeted sales		

SOLUTION:



Production Budget

Particulars	
Budgeted sales	xxx
Add: Desired ending inventory	xxx
Total units needed	xxx
Less: Beginning inventory	(xxx)
Budgeted Production units	xxx

Question

Particulars	
Budgeted sales	13,40,000
Desired ending Inventory	1,20,000
Beginning Inventory	70,000
Find How much goods to be produced for 2021	

SOLUTION:

Question

- The K Company has 5,000 units in beginning finished goods. The sales budget shows expected sales to be 16,000 units. If the production budget shows that 14,000 units are required for production, what was the desired ending finished goods?

SOLUTION:

Question

- K Inc. estimated 12,000 units as sales for next month. It has opening inventory as 2,000 units. It wants to maintain 3,000 as ending inventory. Find the production units for next month.

SOLUTION:

Question

Particulars	Jan	Feb	Mar
Sales units	23,000	22,000	32,000

Entity wants to maintain 25% of next month sales as ending inventory.

Find out production budget for February month.

SOLUTION:

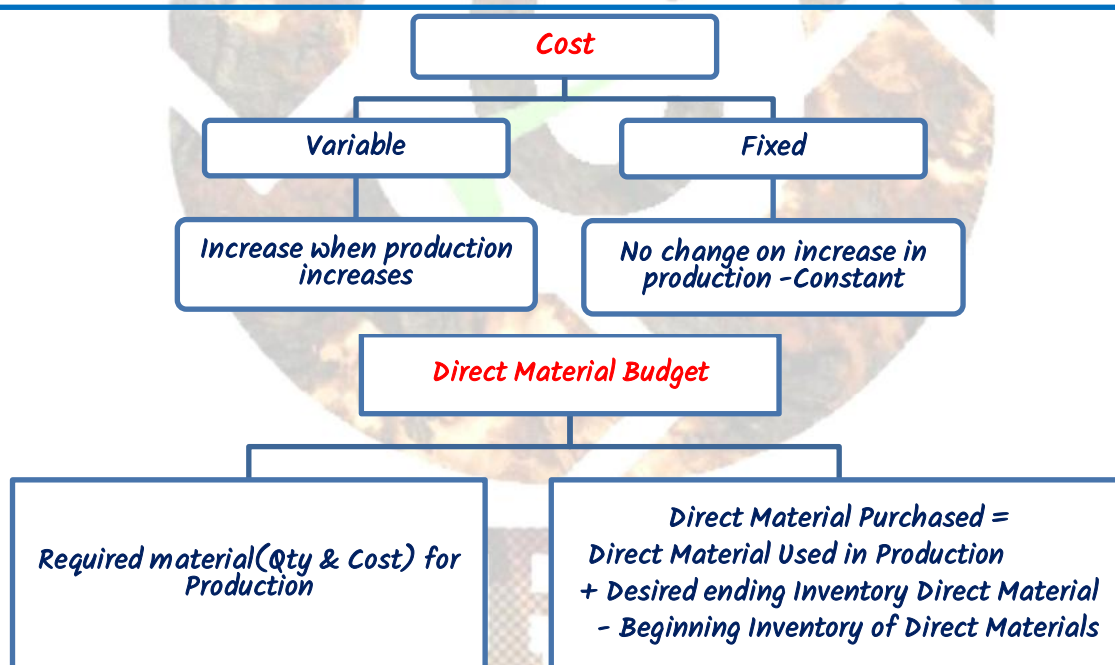
Question

Particulars	Jan	Feb	Mar	Apr
Sales units	13,000	12,000	22,000	33,000

Entity wants to maintain 15% of next month sales as ending inventory.

Find out production budget for March month.

SOLUTION:



Direct Material usage budget

Direct Material usage budget = Opening Direct Material + Purchases – Closing Direct Material

Direct Material Purchase Budget

Particulars	
DM Used in production	xxx
Add: Desired ending inventory of DM	xxx
Total Direct Material needed	xxx
Less: Beginning inventory of DM	(xxx)

Budgeted DM to be Purchased

xxx

Question

Particulars	
Direct material needed for production	3,60,000
Desired Inventory of Raw material	35,000
Beginning Raw material	40,000
Find How much Direct Material to be purchased for 2021	

SOLUTION:

Question

- Direct material needed for production = 26,000 units
- Desired Inventory of Raw material = 1500 units
- Beginning Raw material = 1000 units
- Raw material cost per unit = \$. 4 per unit
- Find out value of Direct Material to be purchased for 2021.
- Ans

SOLUTION:

Question

Particulars	Units
Beginning inventory of Raw Material as on 1.6.2021	2000 units
Ending Inventory of Raw Material as on 30.9.2021	2500 units
Production for this quarter (Jul to Sep)	8,000 units

- For the next quarter
 - Production increase by 30%
 - Ending inventory of Raw Material increase by 40% Find out Purchase of Raw Material for Next quarter?

SOLUTION:

Question

Particulars	March	April	June	July
Budgeted Production	25,000	36,000	46,000	42,000

Company requires maintaining 20% of next month Production as ending inventory Find out budgeted Raw Material Purchase budget for month of June?

SOLUTION:

One unit of finished good requires 3 units of raw material means

Question

Particulars	Jan	Feb	Mar	Apr
Production units	13,000	12,000	22,000	33,000

Entity wants to maintain 15% of next month sales as ending inventory of finished goods.

Entity wants to maintain 10% of next month Production as ending inventory of Raw Material.

One unit of finished goods require 3 units of Raw Material.

Find out production budget for March month.

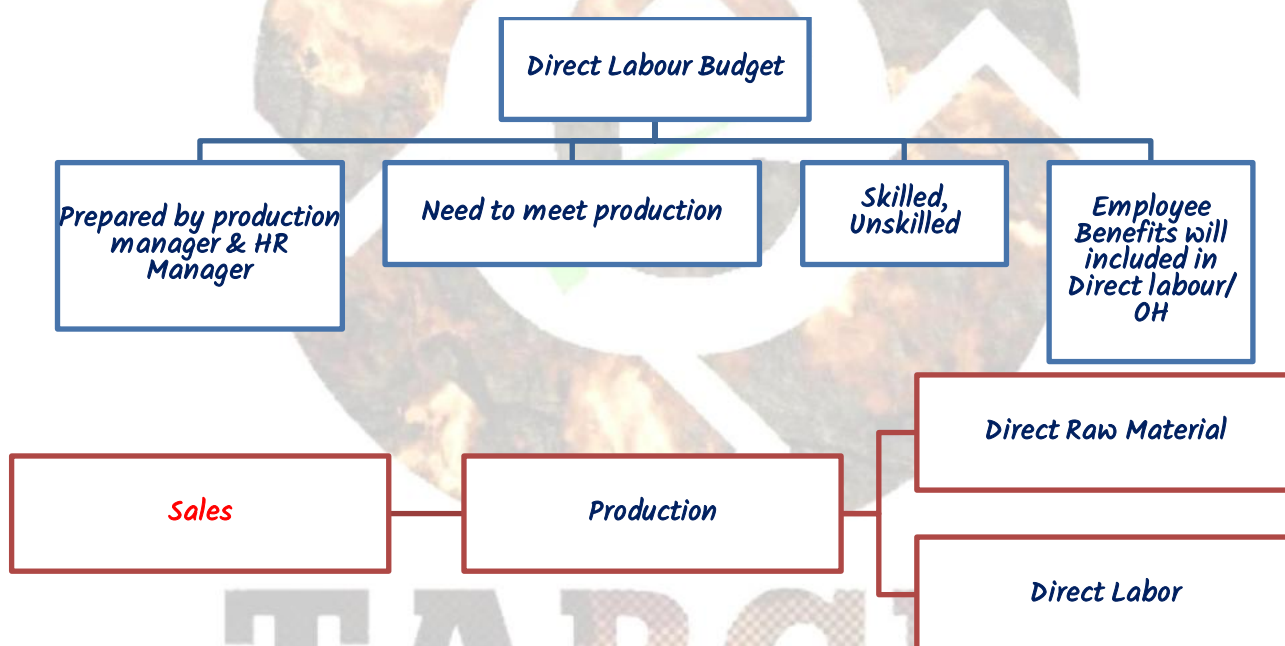
SOLUTION:

Question

Particulars	Jan	Feb	Mar	Apr
Sales units	15,000	17,000	24,000	32,000

Entity wants to maintain 15% of next month sales as ending inventory of finished goods.
One unit of finished goods require 3 units of Raw Material.
Cost of per unit raw material is \$. 12.
Find out value of Raw material purchase budget for Feb month.

SOLUTION:



Direct Labour Requirement = Expected Production x Direct Labour Hours Per Unit

Budgeted Direct Labour Cost = Direct Labour hours Requirement x Direct Labour Cost per Hour.

There is a direct relationship between budgeted production and Direct labour cost

NO OF LABOURS REQUIRED = TOTAL HOURS REQUIRED / NOUMBER OF HOURS BY ONE WORKER PER PERIOD

Question

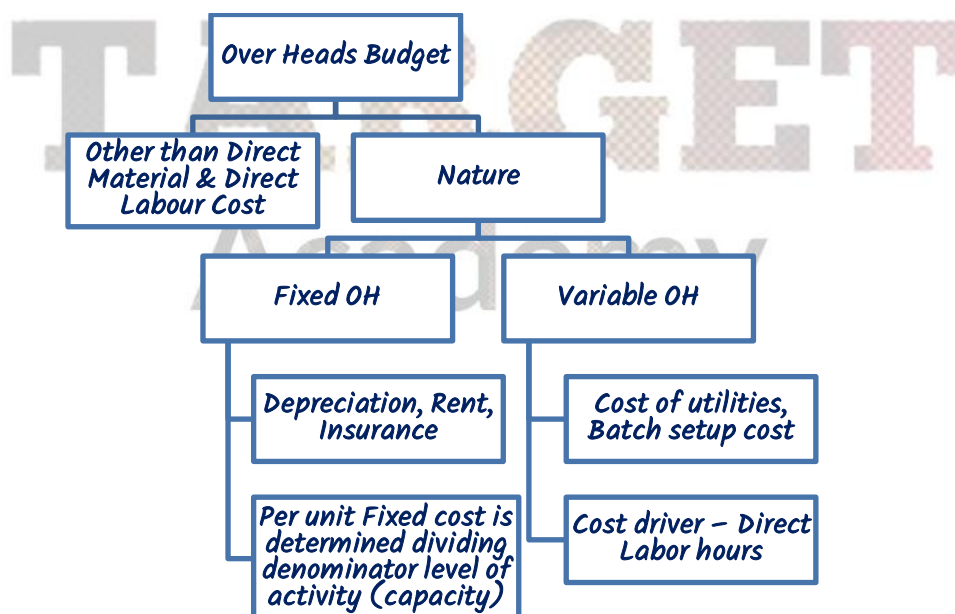
Particulars	
Production for the month	9,000 units.
Each finished good require	2 hours of Direct labor
Company paying	\$. 5 per labor hour
Calculate Direct labor hours budget and Direct labor cost budget.	

SOLUTION:

Question

Particulars	
Production for the month	9,000 units.
Each finished good require	2 hours of Direct labor
Each worker works 150 hours for month	
Calculate how many labor required to produce required units.	

SOLUTION:



Basis of allocation of Manufacturing overheads to units produced

Generally Direct labors

Overhead per unit = $\frac{\text{Total Over head cost}}{\text{total no. of direct labor hours}}$

Overhead budget is depends Direct Labour Budget but not on Direct Material Budget.

Question

- Manufacturing Over Head is 120% of Direct Labour Cost. Direct Labour Cost is \$. 30,000. Find out the manufacturing Overhead.
- Ans

SOLUTION:

Question

Particulars	Jan	Feb	Mar	Apr
Sales units	14,000	16,000	22,000	34,000

Entity wants to maintain 15% of next month sales as ending inventory of finished goods.
One unit of finished goods require 3 hours of direct labour.
Cost of per hour direct labour is \$. 2. Manufacturing Over Head is 130% of direct labour Cost.
Find out value of Manufacturing Over Head budget for Feb month.

MARGINAL COSTING

Particulars	Amount
Sales	xxx
Less: Variable cost	
- Direct material	(xxx)
- Direct Labor	(xxx)
- Variable Manufacturing OH	(xxx)

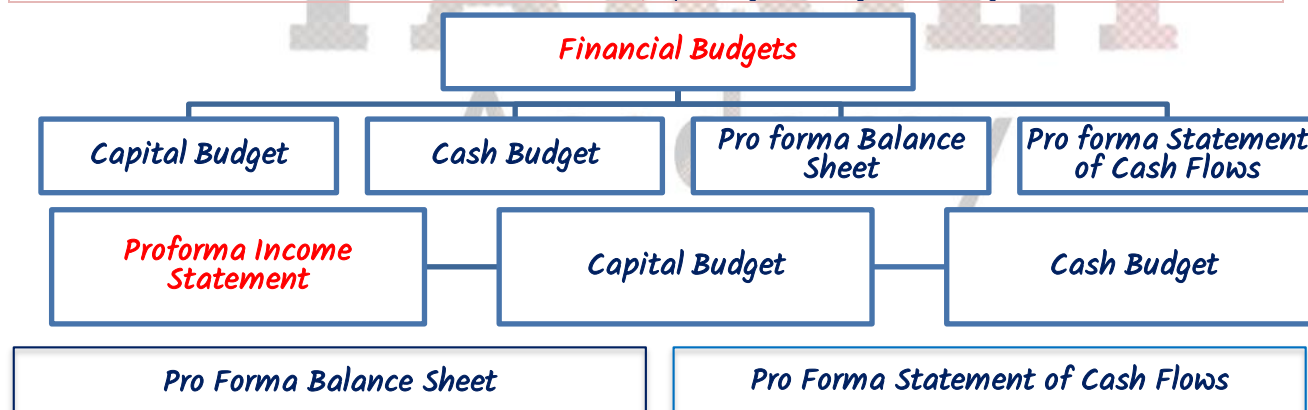
- Variable Admin, Selling & dist. OH	(xxx)
Contribution margin	xxx
Less: Fixed cost	
- Fixed manufacturing OH	(xxx)
- Fixed Selling & dist. OH	(xxx)
Profit	xxx

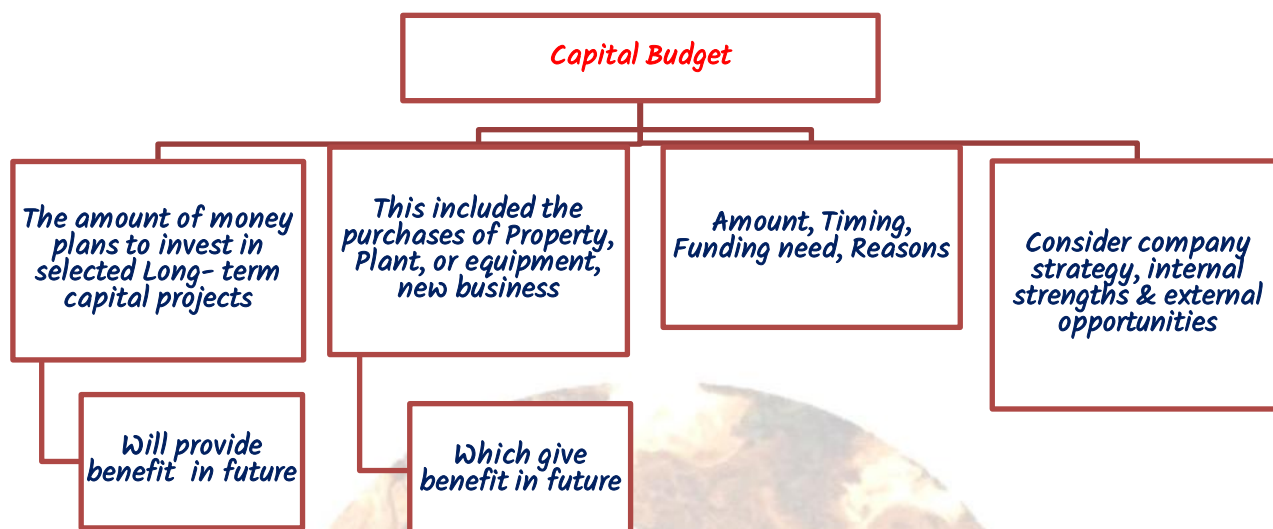
ABSORPTION COSTING

Particulars	Amount
Sales	xxx
Less: COGS :	xxx
(Beginning inventory	
+ DM	
+ DL	
+ Variable Manufacturing OH	
+ Fixed Manufacturing OH	
- Ending Inventory)	
Gross margin	xxx
Less:	
Admin (Variable + Fixed)	(xxx)
Selling & dist. (Variable + Fixed)	(xxx)
Profit	xxx

- Sales = 1000 units @ \$ 60 Per unit
- Raw material consumed = 1000 units @ \$ 5 per unit.
- Labour = \$ 2 per Hour (1 unit requires 1.5 hours).
- Variable Manufacturing over Head = \$ 1 per labour hours.
- Fixed Manufacturing Over Head = \$ 2,000.
- Fixed Administration & Selling = \$ 4,000
- Calculate Profit in both Marginal & Absorption costing.

Marginal Costing	Absorption costing
To measurement internal performance	For external reporting
Fixed Manufacture OH – Period cost	Fixed Manufacturing OH – Product Cost
No of goods Produced = No. of goods sold	No. goods produced =/ No. of goods sold, Opening, Ending inventory exits

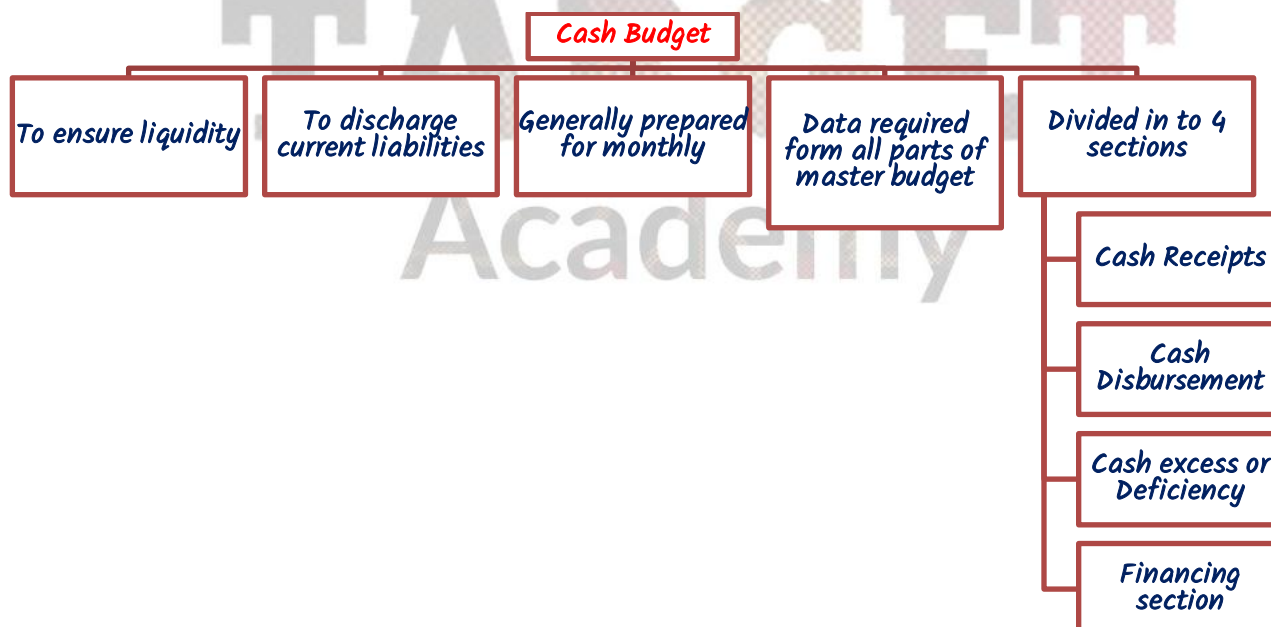


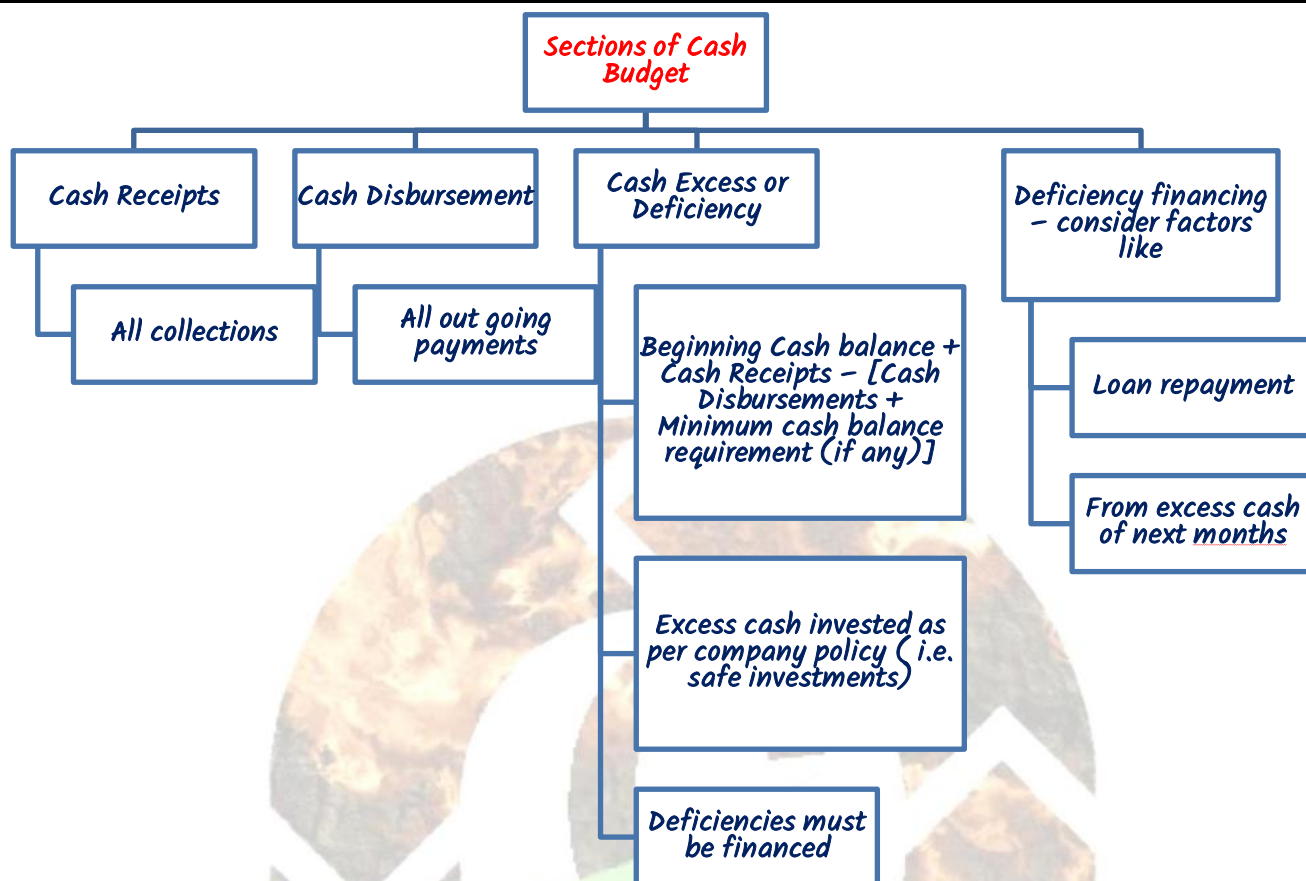


Question

- Identify the capital budget elements from the following spending
- 1. Acquiring new Machinery.
- 2. Acquired new business line.
- 3. Acquiring Raw material.
- 4. Spending on training of staff.

SOLUTION:





Format:

Opening cash balance	XXXX
(+) cash receipts (like cash sales, collection from debtors, interest, rent, commission received other receipt)	XXXX
(A) Total cash available	XXXX
(-) Cash payments (cash purchases, payment creditors, Salaries, rent paid, other expenses)	(XXXX)
Closing cash balance	XXXX
Opening cash balance	XXXX
(+) Cash receipts	XXXX
(A) Total cash available	XXXX
Cash payments	XXXX
Minimum Cash balance on hand	XXXX
(B) Total cash required	XXXX
A-B => A>B => Surplus	
A<B=deflect→ short term borrowings	

Cash Receipts

Month	% of collection
Month 0	60%
Month 1	40%

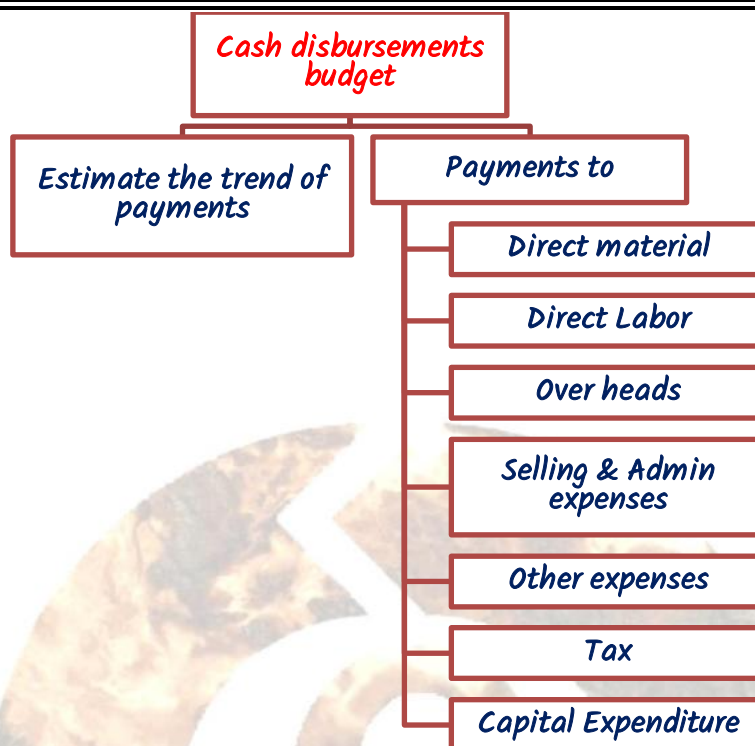
Month	Credit sale
January	40,000
February	30,000
March	45,000
April	25,000

Month	Collection	Collection	Collection	Collection
January				
February				
March				
April				
May				

Month	% of collection
Month 0	40%
Month 1	30%
Month 2	20%
Month 3	10%

Month	Credit sale	Cash Sales
January	40,000	20,000
February	30,000	15,000
March	45,000	30,000
April	25,000	12,000

Month	Collection	Collection	Collection	Collection
January				
February				
March				



Particulars	Month-0	Month-1	Month-2
Direct Material (50% in same month 50% in following month)	50%	50%	
Direct Labor (same month)	100%		
Variable Overhead(following month)		100%	
Fixed Overhead (paid in following month)		100%	
Selling & admin expenses (50% in following month & 50% in next month thereafter)		50%	50%
Interest expenses	100%		
Tax expenses (Same month)	100%		
Capital expenditure(same month)	100%		

Cash Disbursement

Particulars	Amount (January Month)
Direct Material (50% in same month 50% in following month)	30,000
Direct Labor (same month)	25,000
Variable Overhead(following month)	13,000
Fixed Overhead (paid in following month)	12,000
Selling & admin expenses (50% in following month & 50% in next month thereafter)	13,000
Interest expenses	14,000
Tax expenses (Same month)	11,000
Capital expenditure(same month)	2,00,000

Prepare cash disbursement for January month February month

Question

	April	May	June
Sales	35,000	60,000	50,000
Direct Material	20,000	26,000	31,000
Direct Labour	12,000	14,000	16,000
Over head	7,000	9,000	12,000

Particulars	
Sales (50% cash 50% credit)	Credit sales collected 60% in the month of sale and 35 % in the following month and % uncollectable
Direct Material 75% are credit and rest are cash	Credit purchases payment 60% in that month and remaining in following month
Direct Labour	Payment 85% in that month and balance in following month
Overhead	Payment in following month

Find out the Cash collection for May month

Question

	April	May	June
Sales	35,000	60,000	50,000
Direct Material	20,000	26,000	31,000
Direct Labour	12,000	14,000	16,000
Over head	7,000	9,000	12,000

Particulars	
Sales (50% cash 50% credit)	Credit sales collected 60% in the month of sale and 35 % in the following month and % uncollectable
Direct Material 75% are credit and rest are cash	Credit purchases payment 60% in that month and remaining in following month
Direct Labour	Payment 85% in that month and balance in following month
Overhead	Payment in following month

SOLUTION:

Question

Particulars	January	February	March	April
Sales	\$ 240,000	\$ 1,50,000	\$ 300,000	\$ 400,000

Particulars	
Sales	60% in the month of sale 25% in the month after the sale

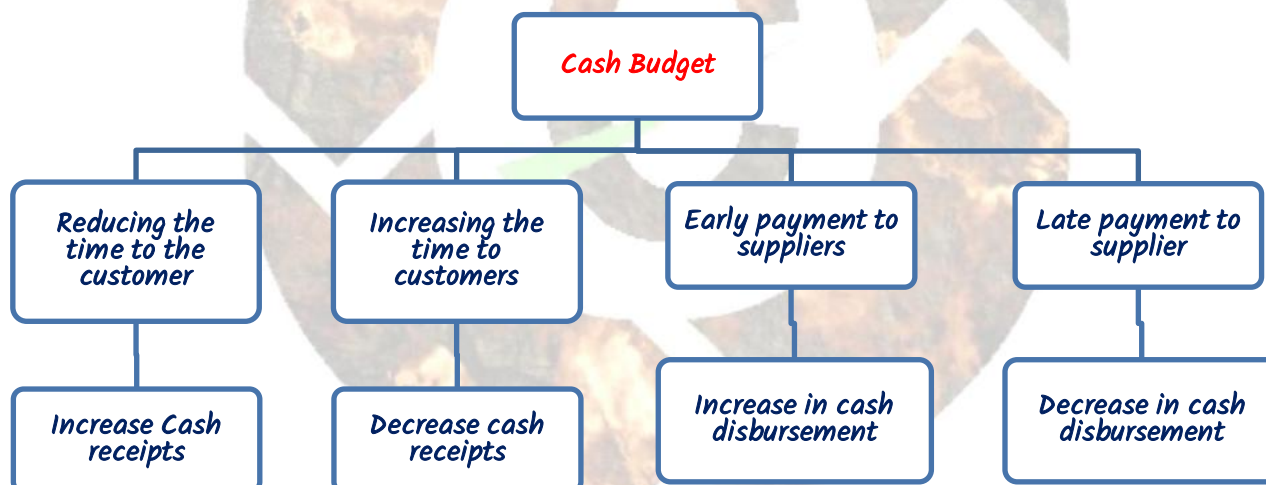
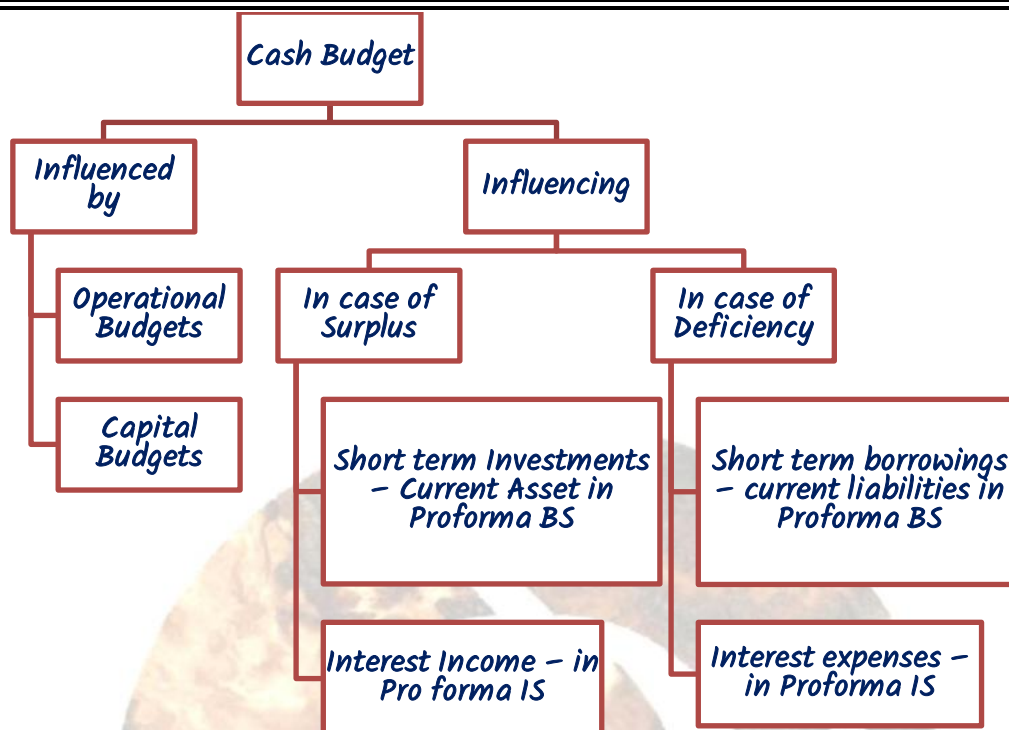
15% in the second month after sale

Find Collection in the month of April
Find closing balance of receivables at the end of March, April

SOLUTION:

Particulars	January	February	March	Total
Beginning Cash Balance				
Add: Cash Receipts				
Total Cash available				
Less: Cash disbursements				
Minimum cash needed				
Total Cash needed				
Cash excess/ (Deficiency)				
Financing				
Borrowings beginning balance				
+ Borrowings (A)				
(-) Repayments (B)				
(-) Interest expenses (C)				
Borrowings ending balance				
Total Financing needs (A+B+C)				
Cash Balance at the end				

TARGET
Academy



Question

Particulars	December	January	February	March
Sales	\$ 200,000	\$ 200,000	\$ 350,000	\$ 400,000
Inventory purchased	60% of Sales			
Other expenses	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000

Particulars	Amounts
Beginning Cash balance at January	\$ 30,000
Minimum cash balance to maintained	\$ 10,000

Sales	All sales are credit sales, collected in the following month
Purchases	Paid in that month itself
Other expenses	Payment in that month itself

Find out short term borrowings by the end of February

SOLUTION:

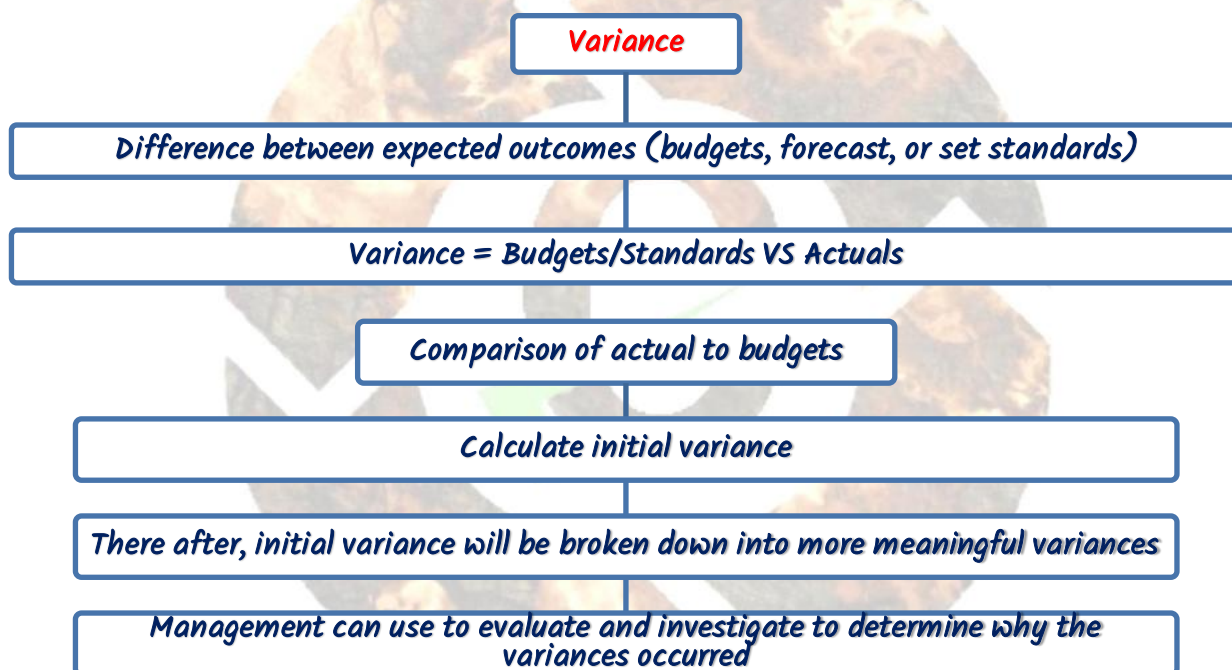


THE END

3. STANDARD COSTING



Annual Budgets were developed in order to prepare the proforma income statement



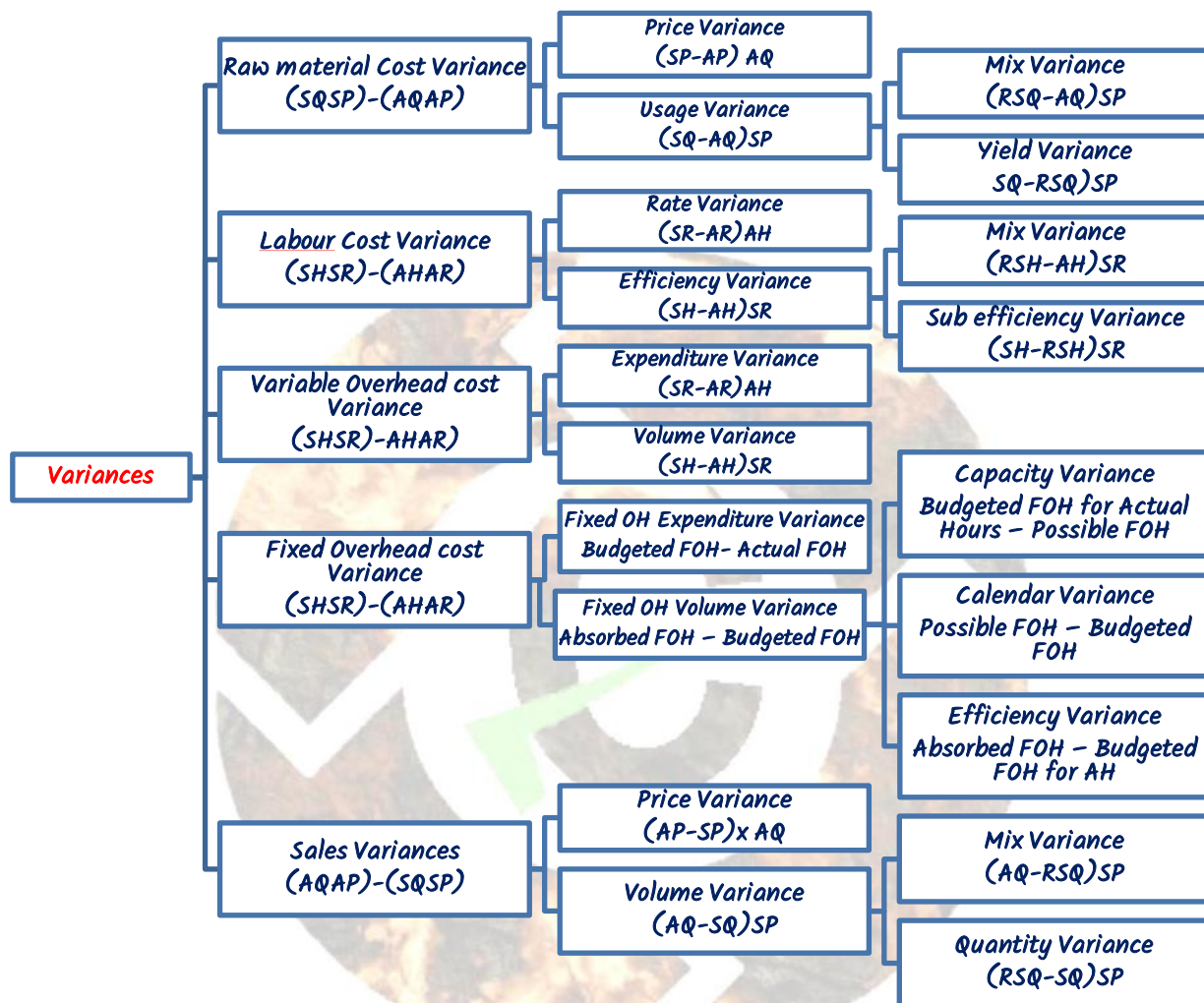
DEVELOPING A STANDARD COST

VARIANCES

Input	Units of input	Cost per unit of input	Cost per unit of Finished good
Raw material	1 kg per Finished Goods	60 per kg	
Direct Labour	2 DLH per Finished Goods	8 per DLH	
Variable Overhead	1.2 machine hour per FG	10 per machine hour	
Total Variable cost			
Fixed Overhead			10 per unit
Total Cost (PU)			
Selling Price (PU)			120
Contribution (PU)			
Number of units			30,000 units

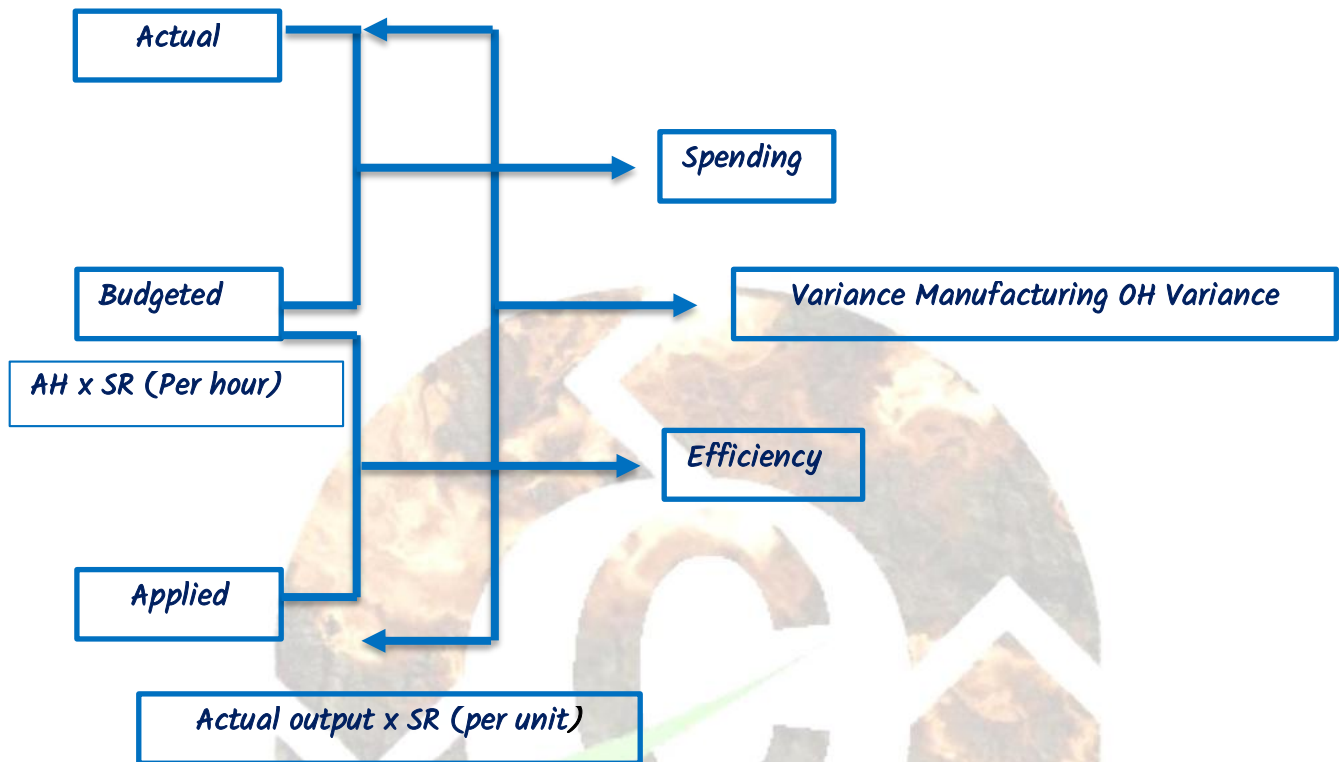
Selling and administrative expenses

3,90,000 per year (fixed)

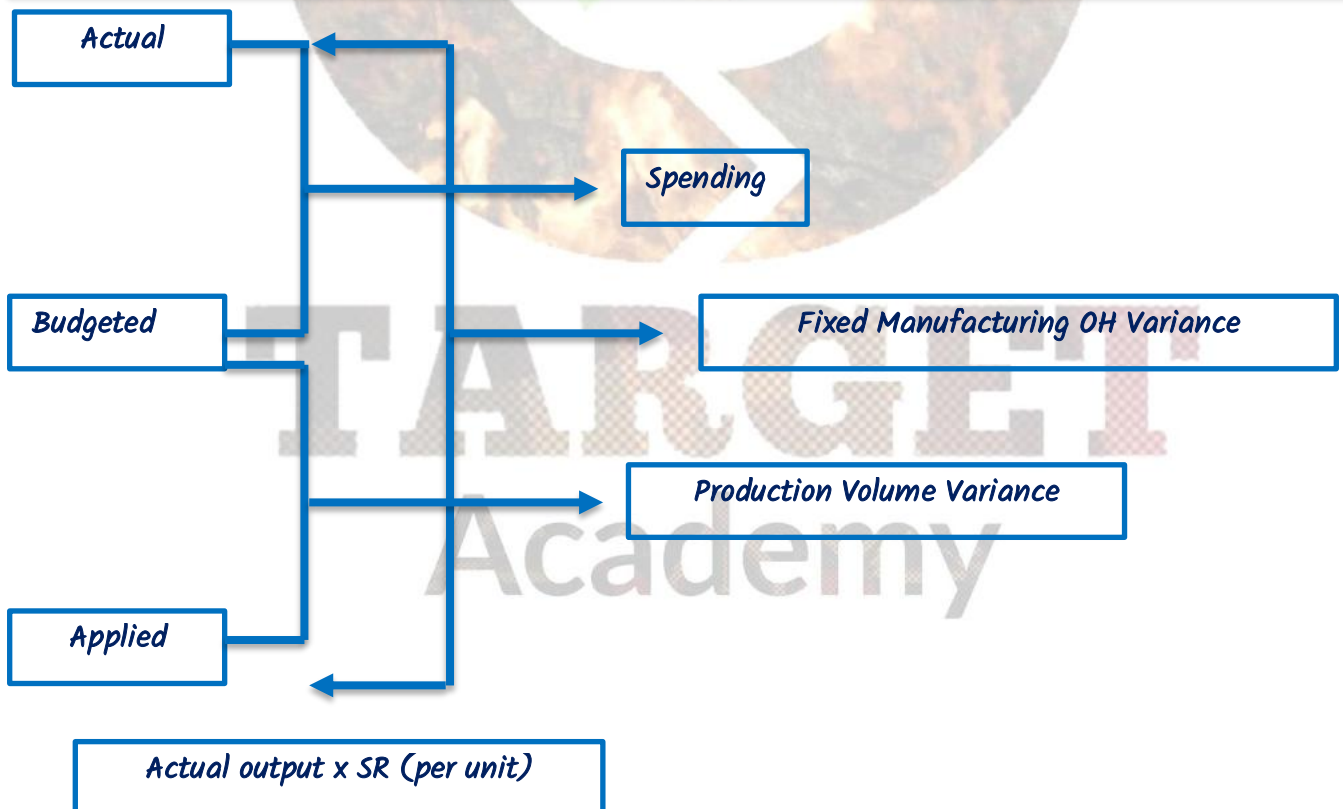


Material Variance	$SQ = \text{Standard quantity for Actual out put}$
Labour Variance, Variable Overhead	$SH = \text{Standard Hours for Actual output}$
Fixed Overhead	Working Note
Sales Variance	$SQ = \text{Standard quantity sold}$

VARIABLE MANUFACTURING OH VARIANCE



FIXED MANUFACTURING OH VARIANCE



IN CASE OF MORE THAN 1 RAW MATERIAL

RAW MATERIAL	SQ (Budgeted Sales)	AQ (Actual Sales)	Standard Ratio	RSQ = (AQ x St Ratio)
A	10,000	11,000		
B	8,000	9,000		
Total	18,000	20,000		

SALES VARIANCE

Sales Variances
(SQSP) - (AQAP)

Price Variance (SP-AP) x AQ

Mix Variance (RSQ-AQ)SP

Volume Variance (SQ-AQ)SP

Quantity Variance
(SQ-RSQ)SP

IN CASE OF MULTIPLE PRODUCTS

SQ	AQ	Standard Ratio	RSQ (AQ x St Ratio)
10,000	11,000		
8,000	9,000		
18,000	20,000		

EXAMPLE

Particulars	
Budget	
Sales	10,000 units
Sale price	80
Actuals	
Sales	9,000
Sale Price	85
Calculate Sales Price Variance, Sales Volume Variance	

SOLUTION:

EXAMPLE

Particulars	Product-A	Product-B
Budgets		
Sales	30,000	20,000
Standard Price	300	200

Actuals		
Sales	26,000	21,000
Actual Price	315	195
Calculate (i) Sales Price Variance,(ii) Sales Volume Variance,(iii) Sales Mix Variance,(iv) Sales Quantity Variance		

SOLUTION:

EXAMPLE

Company sells two type of products A and B

Budget		Actuals	
Sales		Sales	
A	10,000 units	A	8,000 units
B	6,000 units	B	9,000 units

If Product A sells for a higher price than Product B, what will be the impact on actual revenue relative to budgeted revenue?

SOLUTION:

EXAMPLE

Company sells two type of products A and B

Budget		Actuals	
Sales		Sales	
A	10,000 units	A	12,600 units
B	6,000 units	B	2,400 units
Contribution		Contribution	
A	10 PU	A	8 PU
B	24 PU	B	27 PU

Calculate sales mix variance for A & B Products

SOLUTION:

Raw material Cost Variance
 $(SQSP) - (AQAP)$

Price Variance $(SP - AP) AQ$

Usage Variance $(SQ - AQ) SP$

Mix Variance
 $(RSQ - AQ) SP$

Yield Variance $SQ - RSQ) SP$

IN CASE OF MULTIPLE PRODUCTS

SQ	AQ	Standard Ratio	RSQ (AQ x St Ratio)
10,000	12,000		
8,000	7,000		
18,000	19,000		

EXAMPLE

Particulars	
Budget	
Quantity of Raw Material	12,000 units
Price	20
Actuals	
Quantity of Raw Material	14,000
Price	19
Calculate Raw Material Cost Variance, RM Price Variance, RM Usage Variance	

SOLUTION:

EXAMPLE

Particulars	Product-A	Product-B
Budgets		

Raw Material Quantity	20,000	12,000
Standard Price	200	160
Actuals		
Sales	16,000	17,000
Actual Price	210	145
Calculate (i) RM Cost Variance (ii) RM Price Variance, (iii) RM Usage Variance, (iii) RM Mix Variance (iv) RM Yield Variance		

SOLUTION:

EXAMPLE

Company sells two type of products A and B

Budget		Actuals	
Sales		Sales	
A	12,000 units	A	14,000 units
B	7,000 units	B	5,400 units
Contribution		Contribution	
A	10 PU	A	8 PU
B	24 PU	B	27 PU

Calculate sales mix variance for A & B Products

Raw material Cost variance

Price Variance	Usage Variance
$(SP - AP) AQ$	$(SQ - AQ) SP$
Here $AQ = AQ \text{ Purchased}$	Here $AQ = AQ \text{ Used}$

Note:

Direct material has valued as an inventory of Direct material. It can be used at a later time, and it should keep its value between the time of acquisition and the time of usage

EXAMPLE

Particulars
Fewer total units of materials were used than were "allowed" to be used for actual production. If two or more types of material or labor are used, the total quantity (or efficiency) variance can be broken down into mix and yield variances. The material yield variance arises when the total units of materials used differs from the total units "allowed" to be used for actual production. If the total units used are less than the total units "allowed" to be used, the materials yield variance is favorable as this indicates that less is spent on materials than expected.

LABOUR COST VARIANCE

Labour Cost Variance
 $(SHSR) - (AHAR)$

Rate Variance $(SR - AR)AH$

Efficiency Variance
 $(SH - AH)SR$

Mix Variance $(RSH - AH)SR$

Sub efficiency Variance
 $(SH - RSH)SR$

$SH = \text{Standard Labor hours that should have been used to produce the actual production} = AQ \times \text{Standard hours per unit}$

IN CASE OF MULTIPLE PRODUCTS

SH	AH	Standard Ratio	RSH (AH x St Ratio)
10,000	12,000		
8,000	7,000		
18,000	19,000		

EXAMPLE

Particulars	
Budget	
Standard Hours	10,000 hours
Rate	15
Actuals	
Actual Hours	13,000
Rate	14
Calculate Labor Cost Variance, Labor Rate Variance, Labor efficiency Variance	

SOLUTION:

T
A
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y

EXAMPLE

Particulars	Product-A	Product-B
Budgets		
Standard Hours	12,000	8,000
Standard Rate	13	16
Actuals		
Labours Hours	13,000	10,000
Actual Price	15	15

Calculate (i) Labour Cost Variance (ii) Labour Rate Variance, (iii) Labour Efficiency Variance, (iv) Labour Mix Variance (v) Labour sub efficiency Variance

SOLUTION:

EXAMPLE

Company sells two type of products A and B

Labour hours		Actuals	
		Raw Material Quantity	
A	11,000 Hours	A	13,000
B	9,000 Hours	B	7,400
Rate		Price	
A	13 PU	A	10 PU
B	22 PU	B	19 PU

Calculate Labour mix variance for A & B Products

SOLUTION:

VARIABLE OVER HEAD VARIANCE

Variable Over Head Variance

It is manufacturing Overhead that varies as the level of activity varies.

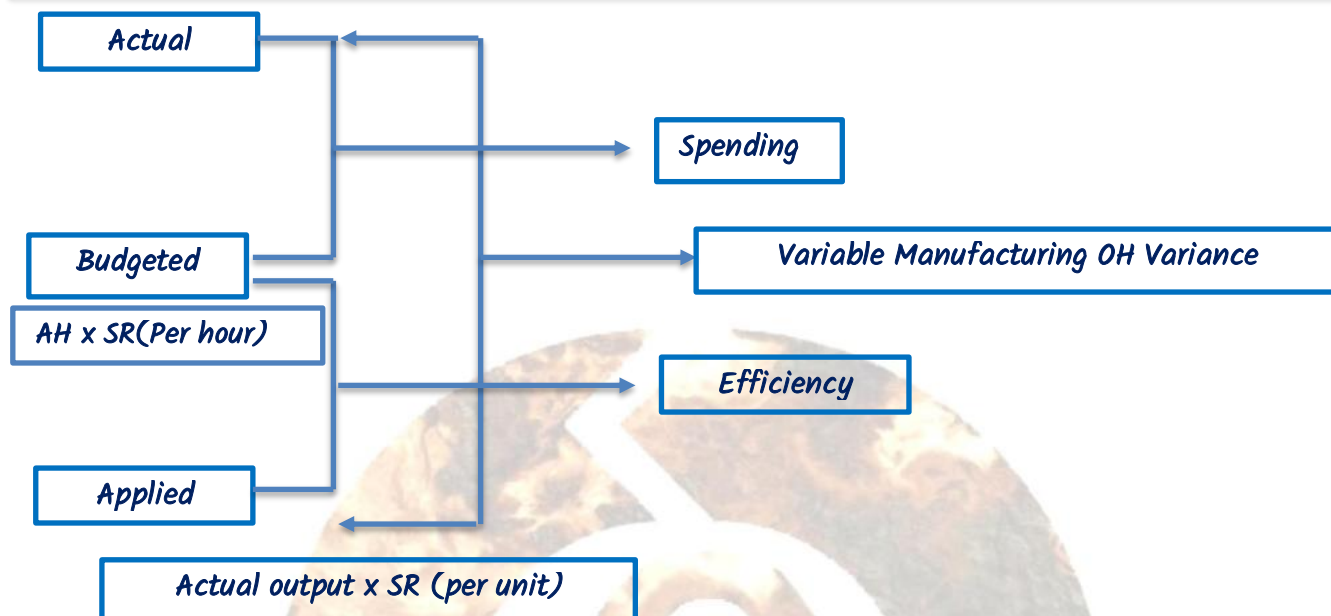
Here H indicates the Hours (if hours are taken as cost driver)

Variable Overhead cost Variance (SHSR)-AHAR)

Spending Variance (SR-AR)AH

Efficiency Variance (SH-AH)SR

VARIANCE MANUFACTURING OH VARIANCE



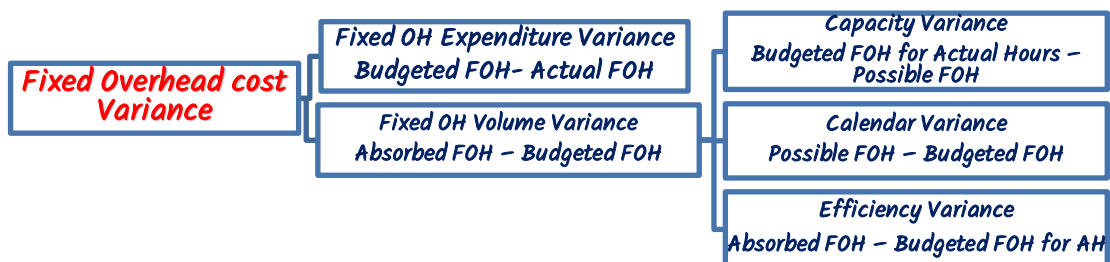
EXAMPLE

Particulars	
Budget	
Standard Hours	12,000 hours
Rate	14
Actuals	
Actual Hours	10,000
Rate	18
Calculate Variable OH Cost Variance, Spending Variance, Efficiency Variance	

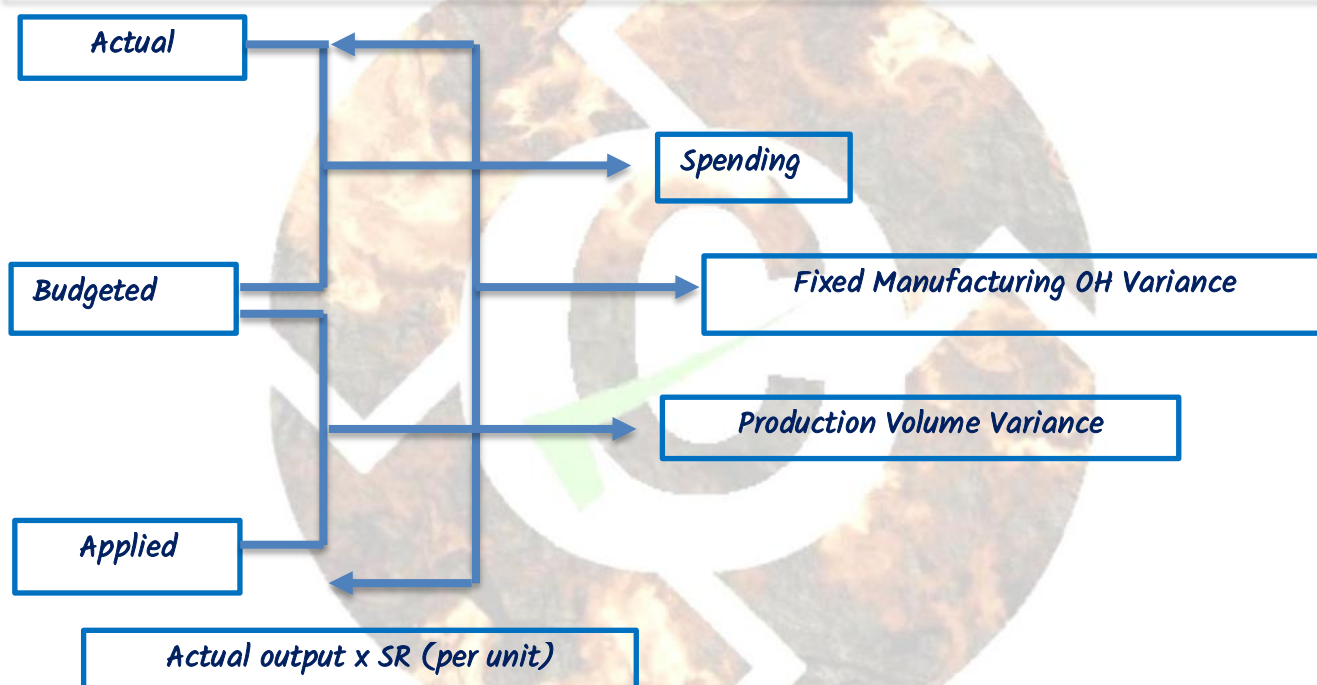
SOLUTION:

TARGET
Academy

FIXED MANUFACTURING OVERHEAD VARIANCE



FIXED MANUFACTURING OH VARIANCE



Fixed manufacturing Overhead Variance

It is easy to compute, because fixed cost are not expected to vary with changes in the level of activity within the relevant range

Spending Variance

Production Volume variance

Comparison of actual spending to fixed overhead budgeted

Comparison of Budgeted with Applied cost

EXAMPLE

Particulars	
Budgeted Fixed Expenses	3,00,000
Budgeted units	30,000
Budgeted Rate per Unit	
Fixed OH rate per DLH	5 per DLH
Actual Fixed Over Head expenses	2,94,000

Actual units	24,000
Fixed over head observed/applied in to inventory	$24,000 \times 10 = 2,40,000$
Calculate Fixed over head cost variance, Fixed OH spending variance, Production volume variance	

Note:

Production volume variance appears only in absorption costing. This variance is not a measure of any individual's or department performance

If actual level of activity is lower than denominated level of activity, then the production volume variance will be unfavorable. The unfavorable variance can be avoidable by producing more number of units, but may leads to more inventory

SOLUTION:

EXAMPLE

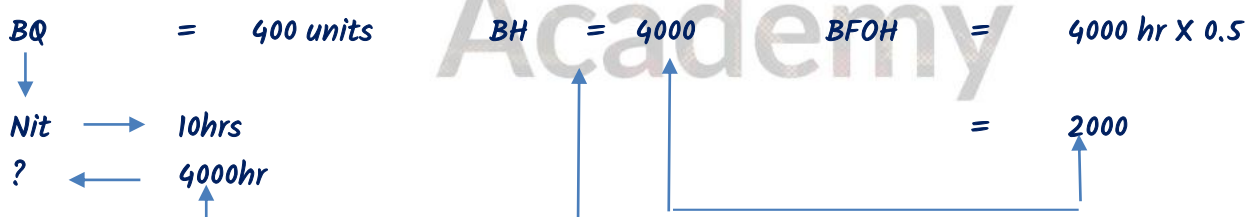
A manufacturing co. operates a costing system and showed the following data in respect of themonth of November.

Actual no. of working days	22
Actual man hours worked during the month	4,300
No. of Products Produced	425
Actual overhead incurred	₹ 1,800

Relevant information from the company's budget and standard cost data is as follows:

Budgeted no. of working days per month	20
Budgeted man hours per month	4,000
Standard man hours per product	10
Standard overhead rate per month per hour	50 p.

You are required to calculate the overhead variances for the month of November.



$$SH (\text{For unit}) = \frac{4000}{400} = 10$$

$$SR = \frac{BFOH}{BH} = \frac{2000}{4000} = 0.5$$

$$SH \text{ for actual output} = (S.H \text{ for unit} \times Aq)$$

$$= 10 \times 425$$

$$= 4250$$

2.

1. BFOH = 4000 x 0.5 = 2000

2. AFOH = 18000

3. Above FOH = S.H x SR = 4250 x 0.5 = 2125
(for ac of)

4. Budgeted FOH for a dual hours = A.H x SR = 4000 x 0.5 = 250

5. Possible FOH = Budgeted FOH x $\frac{\text{Actual days}}{\text{Budgeted days}}$ = 2000 $\frac{22}{22}$ = 2200

Fixed OH variance Absorbed FOH -
Actual FOH 2125-1800 = 305 (F)

FOH exp variance
Budgeted FOH -
Actual FOH
2000-1800 +200 (F)

FOH Volume Vairance
Absorbed 2125-2000 =
215 (F)

Capacity Variance FOH for
AH - Possible FOH 2150 -
2200 = 50 (A)

Calender variance Possible
FOH - Budgeted FOH 2200 -
2000 + 200 (f)

FOH Efficiency variance absorbed
FOH - Budgeted FOH for AC POH
2125 - 2150 = 25 (A)

TARGET
Academy

THE END



TARGET
Academy

AUDITING

CONTACT: 90595 29540, 90106 76997.

CONCEPT-I

➤ Nature, Scope and Significance of Auditing

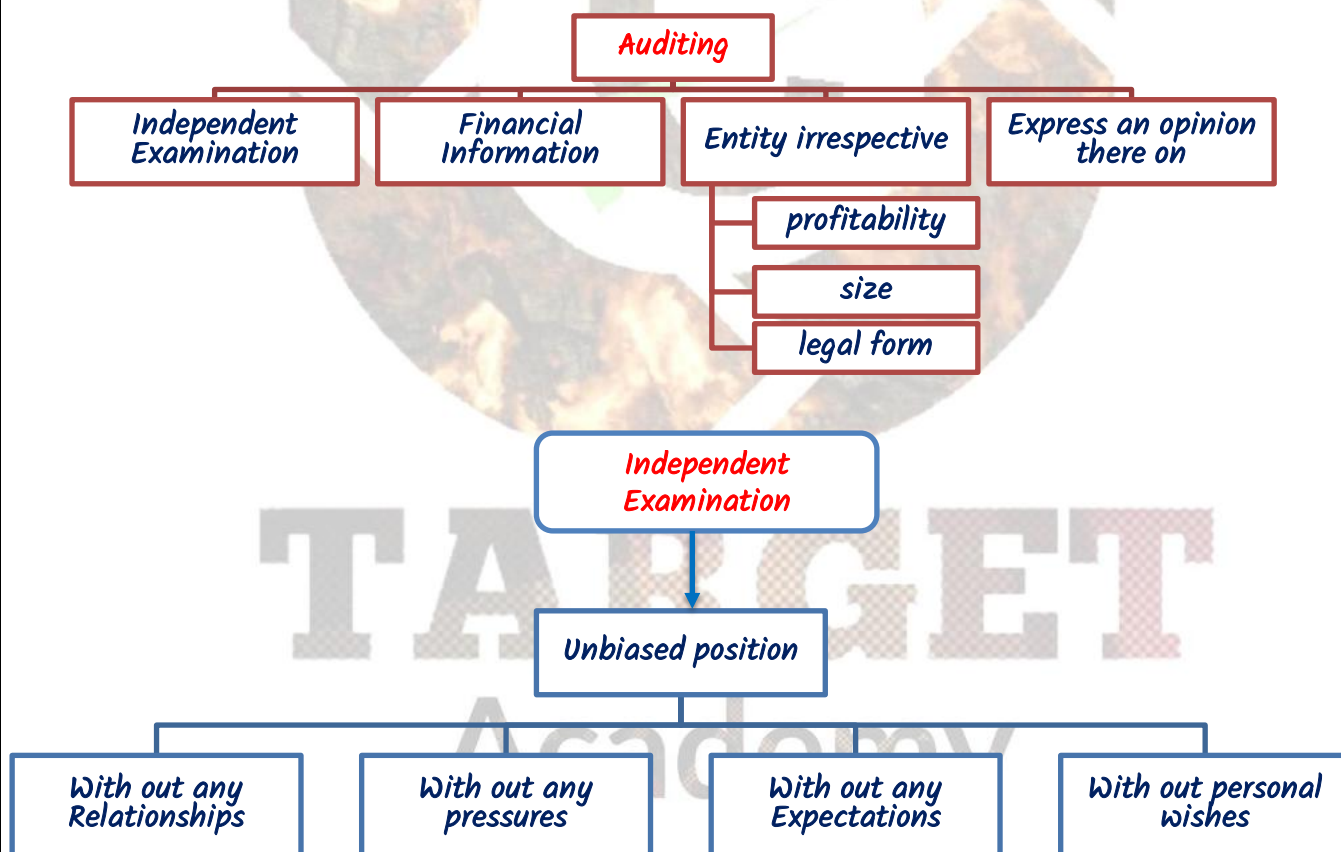
The word "Auditing" is derived from the Latin word "Audire" – which means to hear

BACK GROUND OF AUDITING

- S-1:- 16th & 17th century – Honesty.
- S-2:- 18th century – Financial Information.
- S-3 :- 19th century – Independence of Auditor.
- S-4 :- 20th century – Statutory recognition.
- S-5 :- 21st century – Developments in Auditing (like SA, Guidance notes)

AUDITING- DEFINITION

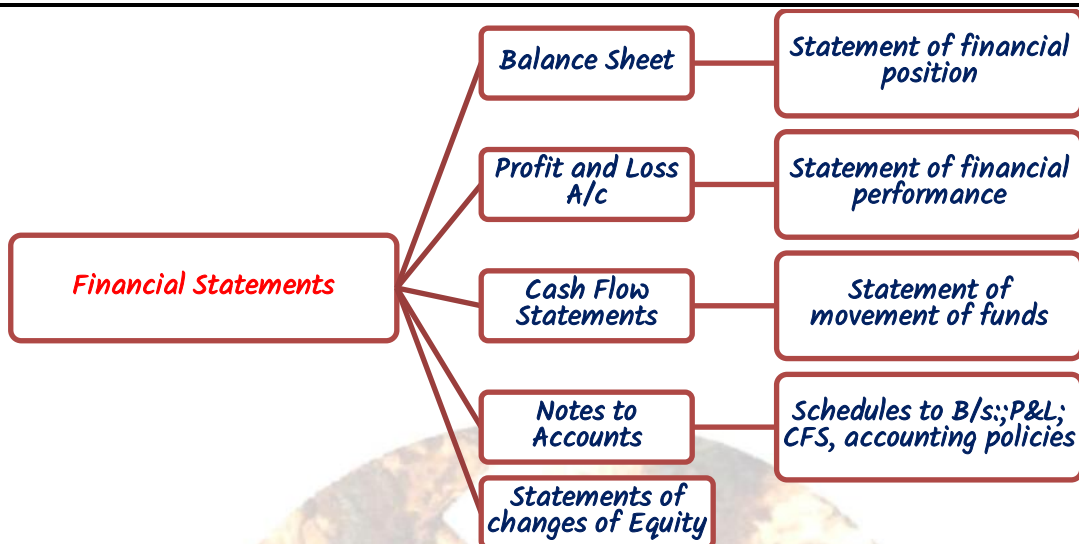
Auditing is an independent examination of financial information of any entity, whether profits oriented or not, and irrespective of its size or legal form, when such examination is conducted with a view to express an opinion there on.



Accounting	Auditing
i) Analyze events and transactions	Review client's internal control system
i) Record and summarize data in accounting records	Obtain and evaluate evidence on statement assertions
i) Make financial statement assertions	Determine fairness of statements in conformity with recognized accounting principles

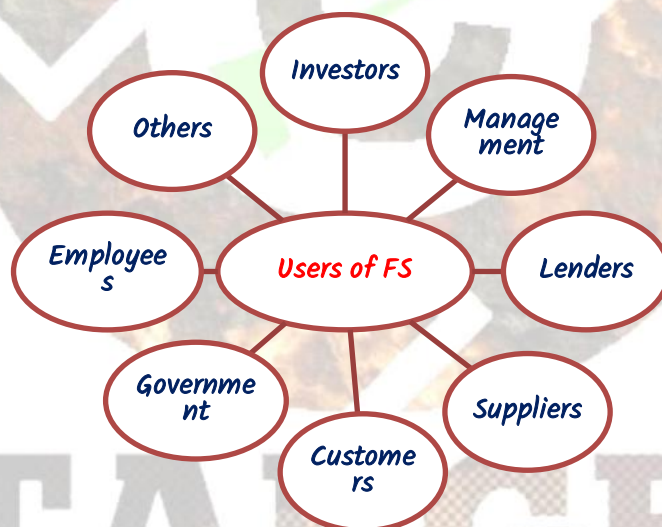
i) Prepare financial statements as per recognized accounting principles	Prepare audit report on finding
i) Distribute Financial statements and Auditor's report to shareholders	Deliver audit report to client
i) Accounting is first & after it is done auditing starts	Auditing starts where accounting ends
Accounting	Auditing
It is the collection, classification and summarization of data for preparation of books of accounts, and to make financial statements.	Auditing is an analytical and critical examination of books of accounts, financial records and the financial Statements prepared thereon.
It is the recording of transactions at the time of occurrence.	It is the post Transactions. Morn examination of recorded
It measures the business events in monetary terms, records them, and communicates the financial results through Financial Statements.	Auditing reviews financial records to form an opinion on the authenticity of Financial Statements.
The primary responsibility is of the management towards the shareholders/ owners, to maintain the financial records in such a manner that Financial Statements can be prepared from the records.	The auditor is an independent person appointed by the business entity to review the Financial Statements and to give his opinion thereon.
An accountant is not expected to review/ report on the Financial Statement but to report the Compilation of records to the management.	An auditor is required to submit a report with his opinion on 'true and fair' assertions made in the Financial Statements to the owners.
An accountant works for/ under the management.	The auditor is an independent person answerable/ liable to the owners/ shareholders and not just to the management.
No such liability	In certain circumstances, the auditor could be held liable to third parties also.
Maintenance of accounts may not be mandatory for small individuals or partnership firms, e. g. under section 44AA of the Income Tax Act, but could be mandatory under other laws, e. g. for companies under the Companies Act.	Audit could be exempt for various individuals or small partnerships, e. g. under section 44AB of the Income tax Act, and even in case where maintaining books of accounts is a statutory requirement under section 44AA, but may be mandatory under other laws e. g. for Companies under the companies Act.
Accounting is done as per the principles set by Indian Accounting standards (Indians)	Auditing is done as per the principal set in standards on auditing.

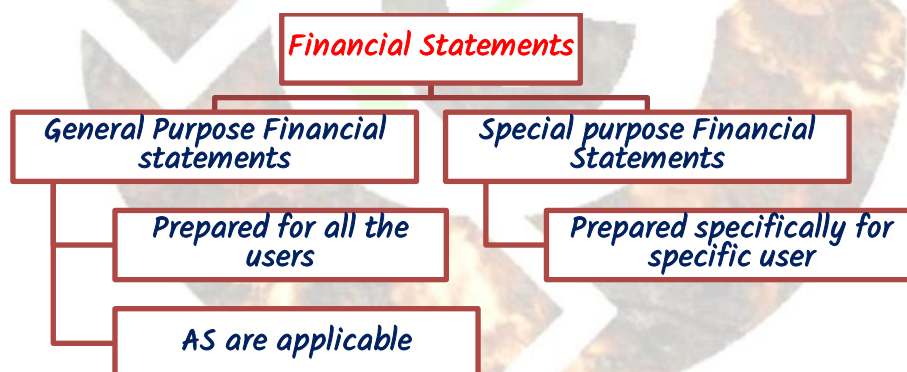
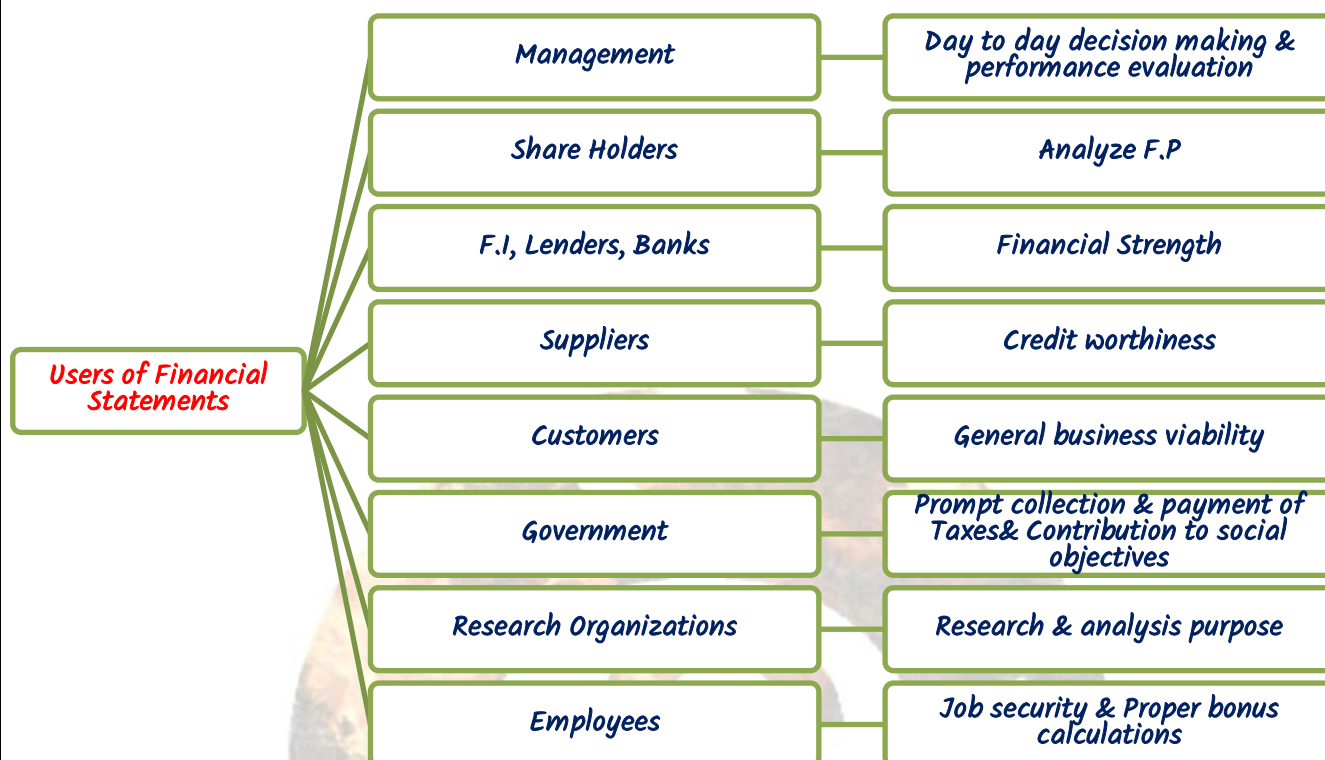
$$\text{FINANCIAL INFORMATION} = \text{BOA} + \text{FS}$$



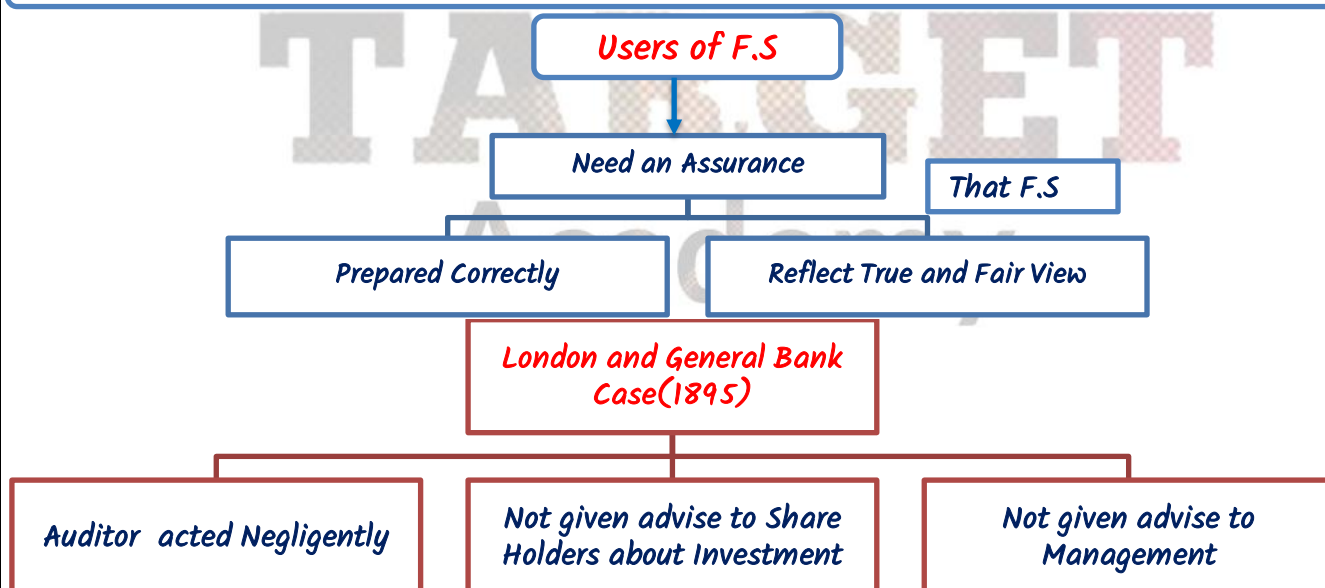
Annual Report

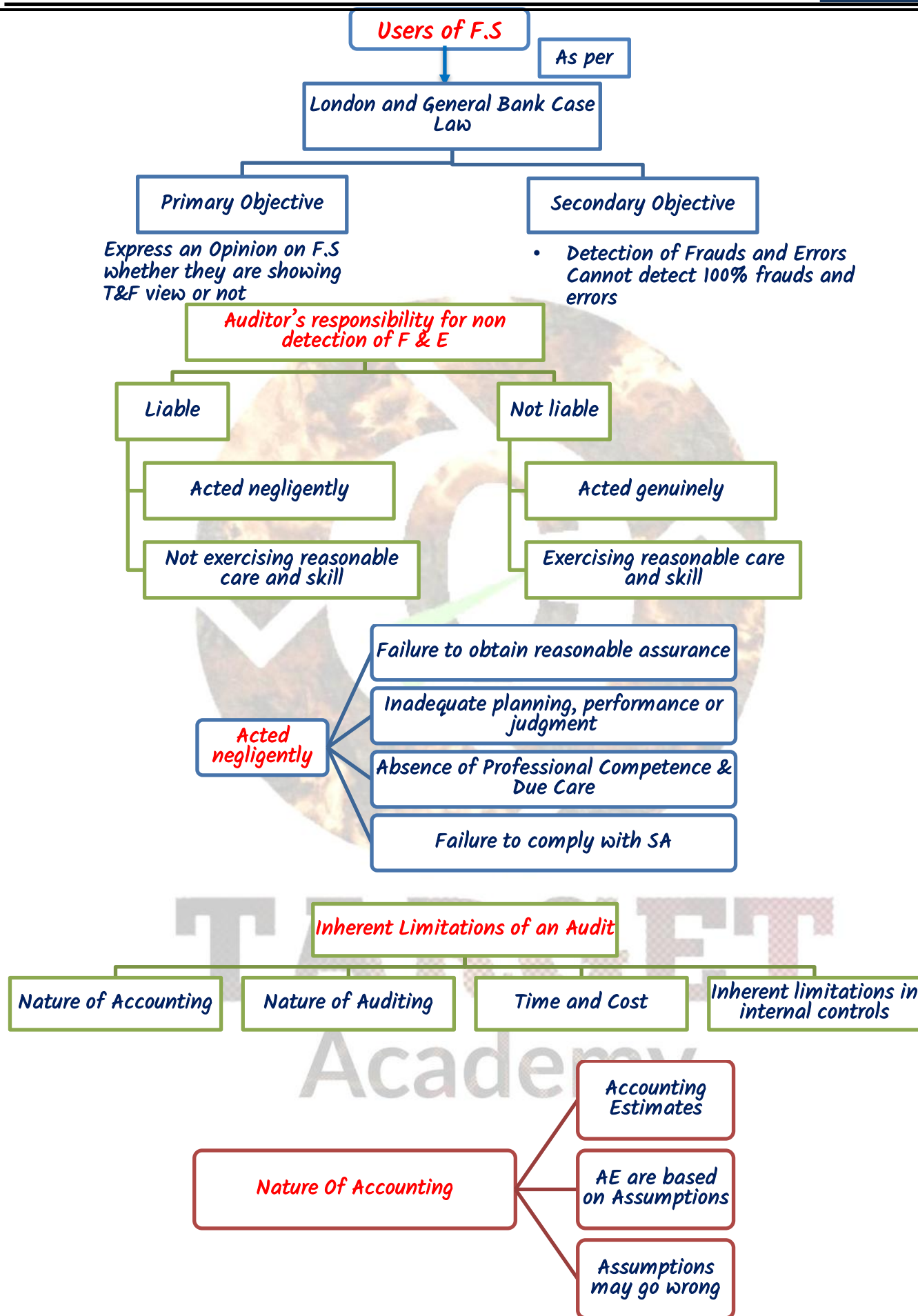
F.S + Board's Report + Chairman's Report + Analysis by management + other similar items

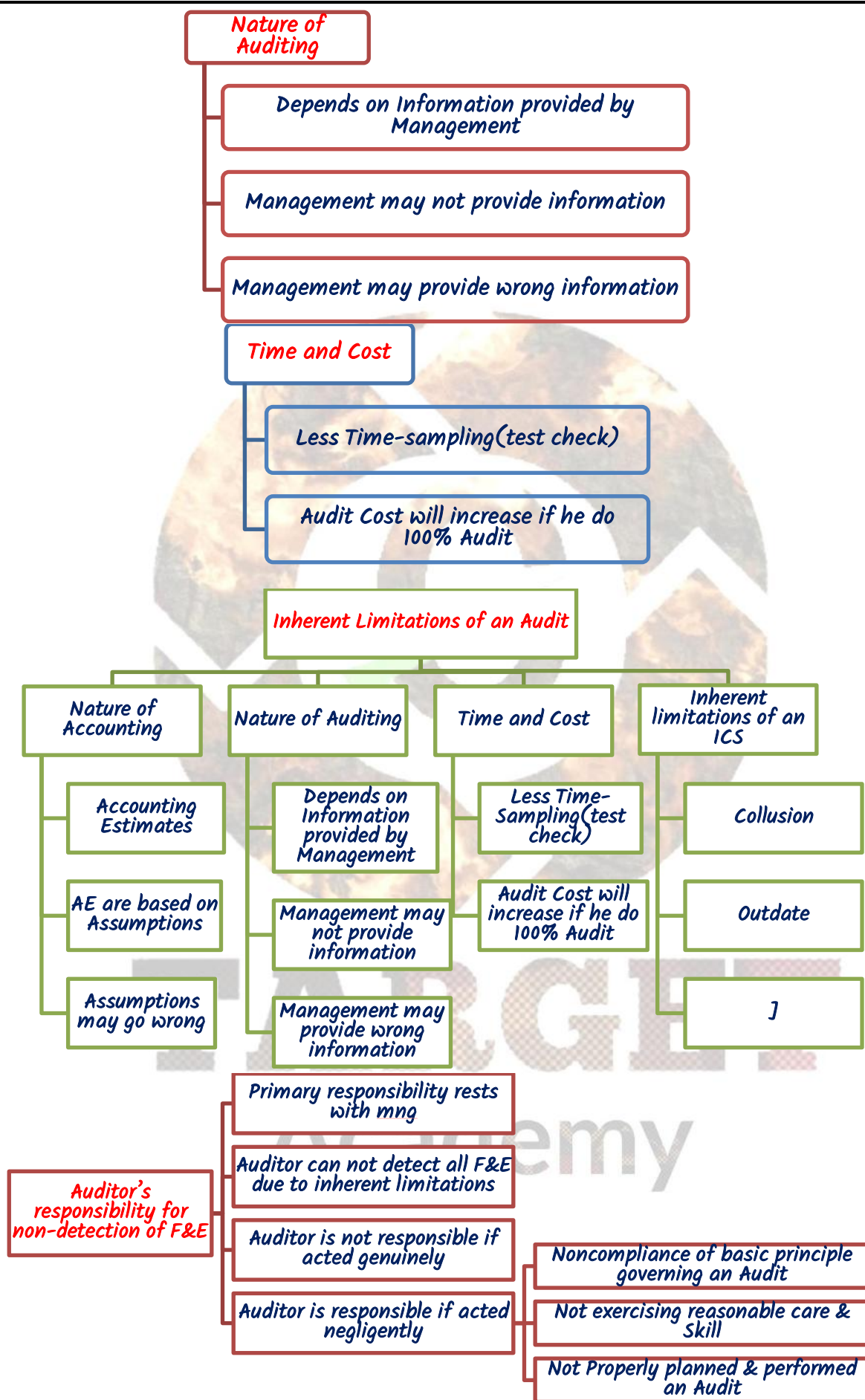




NEED OF AUDIT

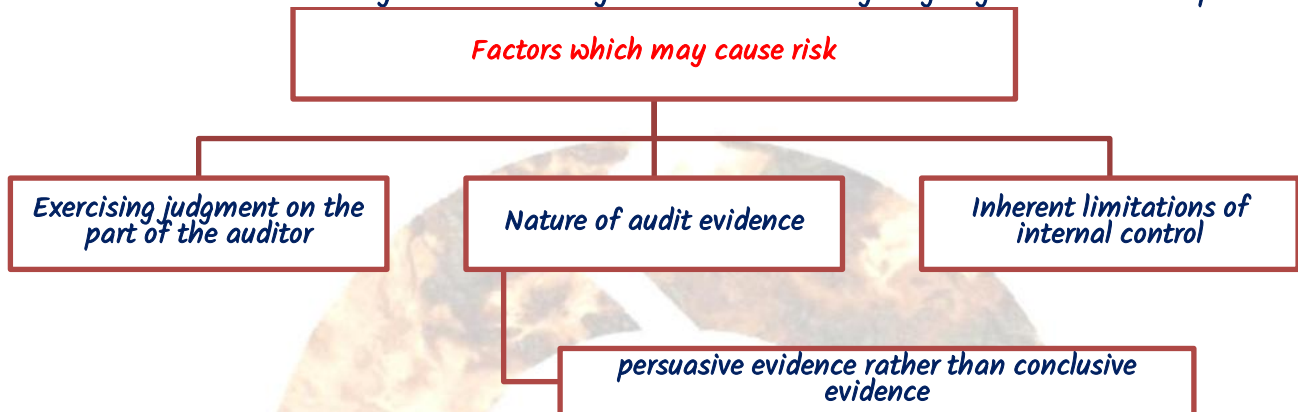






OTHER MATTERS THAT AFFECTS THE LIMITATIONS OF AN AUDIT

- *Fraud*
- *Related party transactions.*
- *Noncompliance with laws and regulations.*
- *Future events that may cause an entity to cease continuity of going concern assumption.*



TARGET
Academy

CONCEPT-2

Misstatements=Mistakes

Unintentional

Intentional

Errors

Frauds

Types of errors

Error of omission

Error of Commission

Compensating errors

Error of Principle

Procedural Errors

Partial omission

Complete omission

Wrong posting of amount

Posting on wrong side

Posting in wrong A/c

Error of duplications

Error of carry forward

Error of extraction of balances

Self - revealing errors

Becomes apparent in the process of compilation of BOA

Partial omission

Wrong totaling

Posting in wrong account

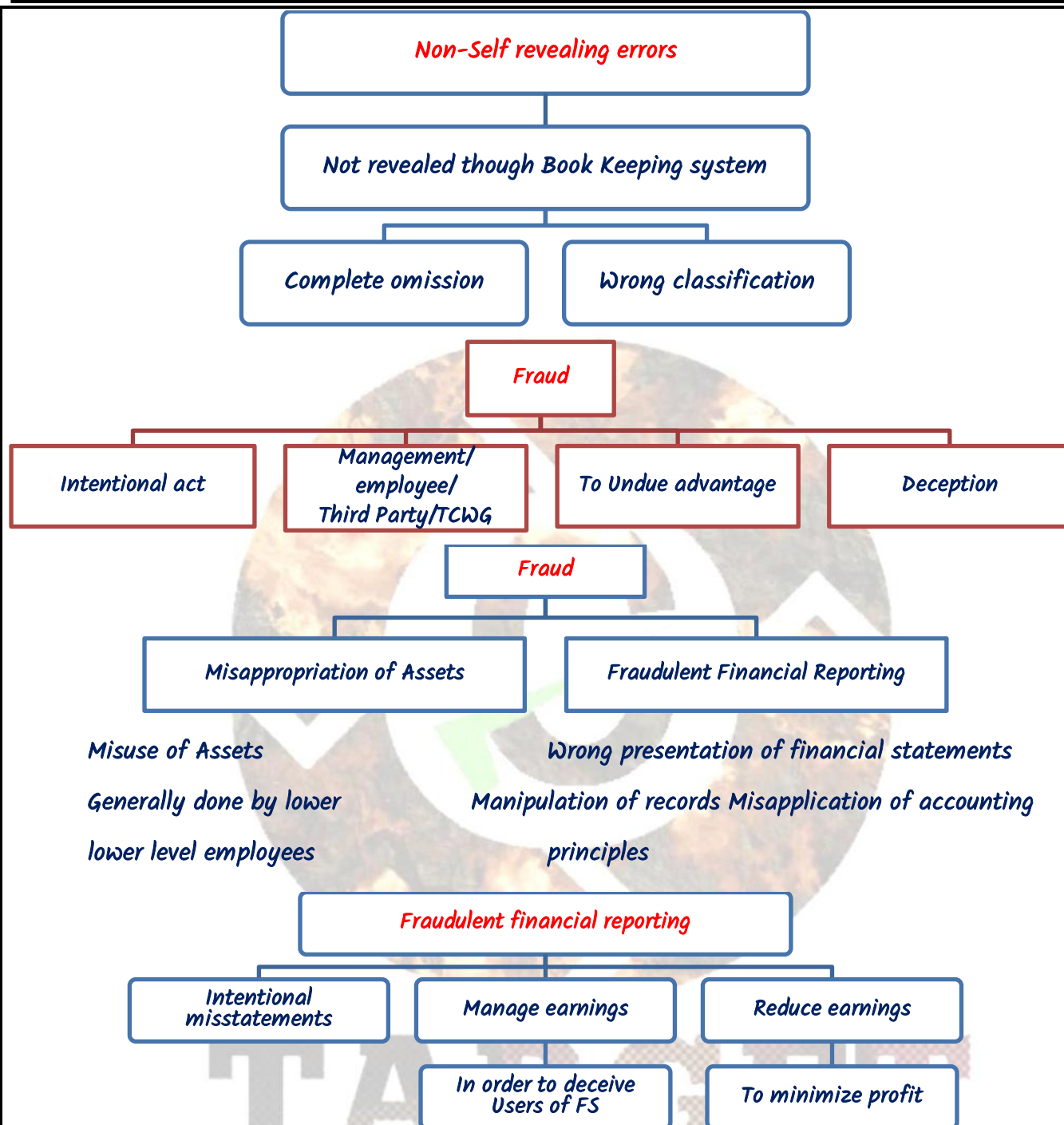
Posting on wrong side

Trial bal will not agree

Control a/c bal & personal ledger A/c will not agree

Statement of Accounts will reveal

Trial bal will not agree



FRAUDULENT FINANCIAL REPORTING

Manipulation of records.

Misrepresentation.

Misapplication of Accounting principals(intentionally)

FRAUDULENT FINANCIAL REPORTING

High degree of competition

Significant decrease in customer demand.

High vulnerability of rapid changes.

Accounting estimates.

Significant related party transactions.

Transaction with tax heavens.

Doubt about integrity of mng.

Excessive interest by management in increasing share prices.

Volatility of laws and regulations

MISAPPROPRIATION OF ASSETS

Know or anticipated future employee lay off.

Promotions & compensations inconsistent with expectations.

Easily convertible assets.

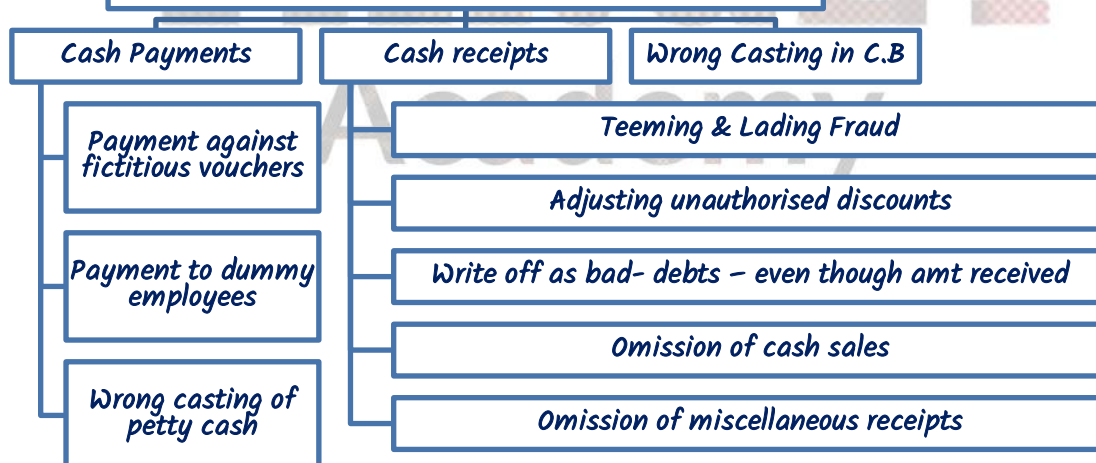
Assets of smaller size.

Lack of ICS.

Behavior indicating dissatisfaction.

Tolerance of petty thefts.

Misappropriation /Embezzlement/Defalcation of Cash



CHECKING MISAPPROPRIATION OF CASH

Existence of internal check system is quite essential

separation of duties and incompatible functions

· No single person is responsible for entire activity

Cross checking cash receipts with counter file

· But the issue of receipts with counterfoils in respect of amounts collected by itself would not ensure that all the amounts collected have been fully accounted for or have been correctly adjusted

Checking of date of each receipt in counterfoil w.r.t Date at cash book

· If there is a time lag between them, it is possible that the person who had misappropriated the cash for that mean time

Verify cash sales with carbon copies of cash memos

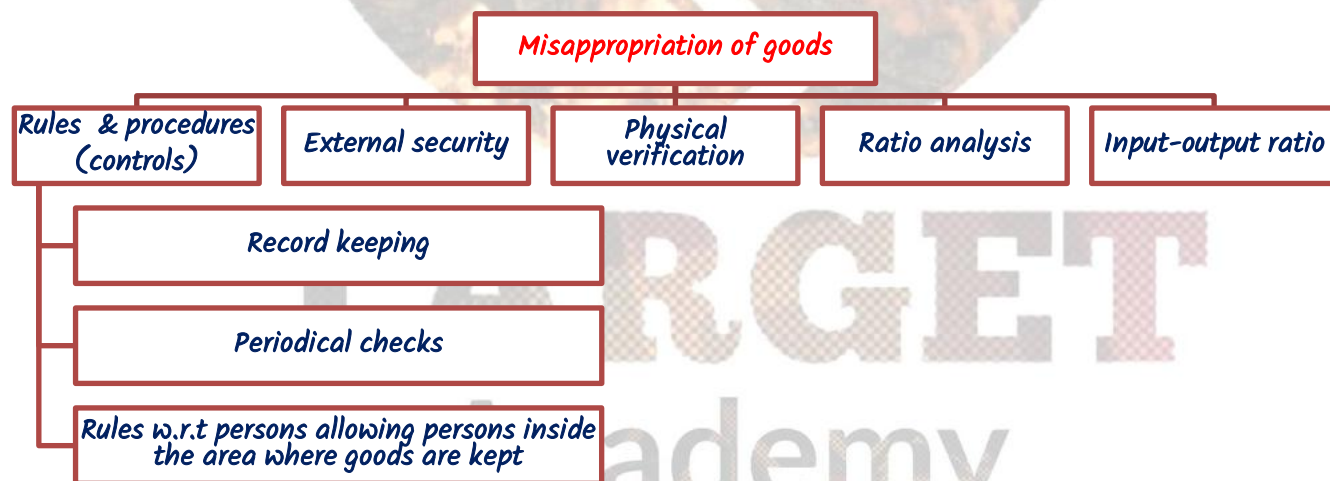
· If sales are quite voluminous then a Cash Sales Summary Book is maintained and the cash memos are traced into it

Check receipt of cash with the counterfoils

· If not --- enquire reasons

Amounts deposited in the bank account

· Pay-in-Slip Book
· If mismatched-collected were not deposited as soon as these were received.



Auditor's ability to detect fraud



Fraud Risk Factors

Faults in Internal Controls

Doubt about integrity of management

Unusual Pressures

Unusual Transactions

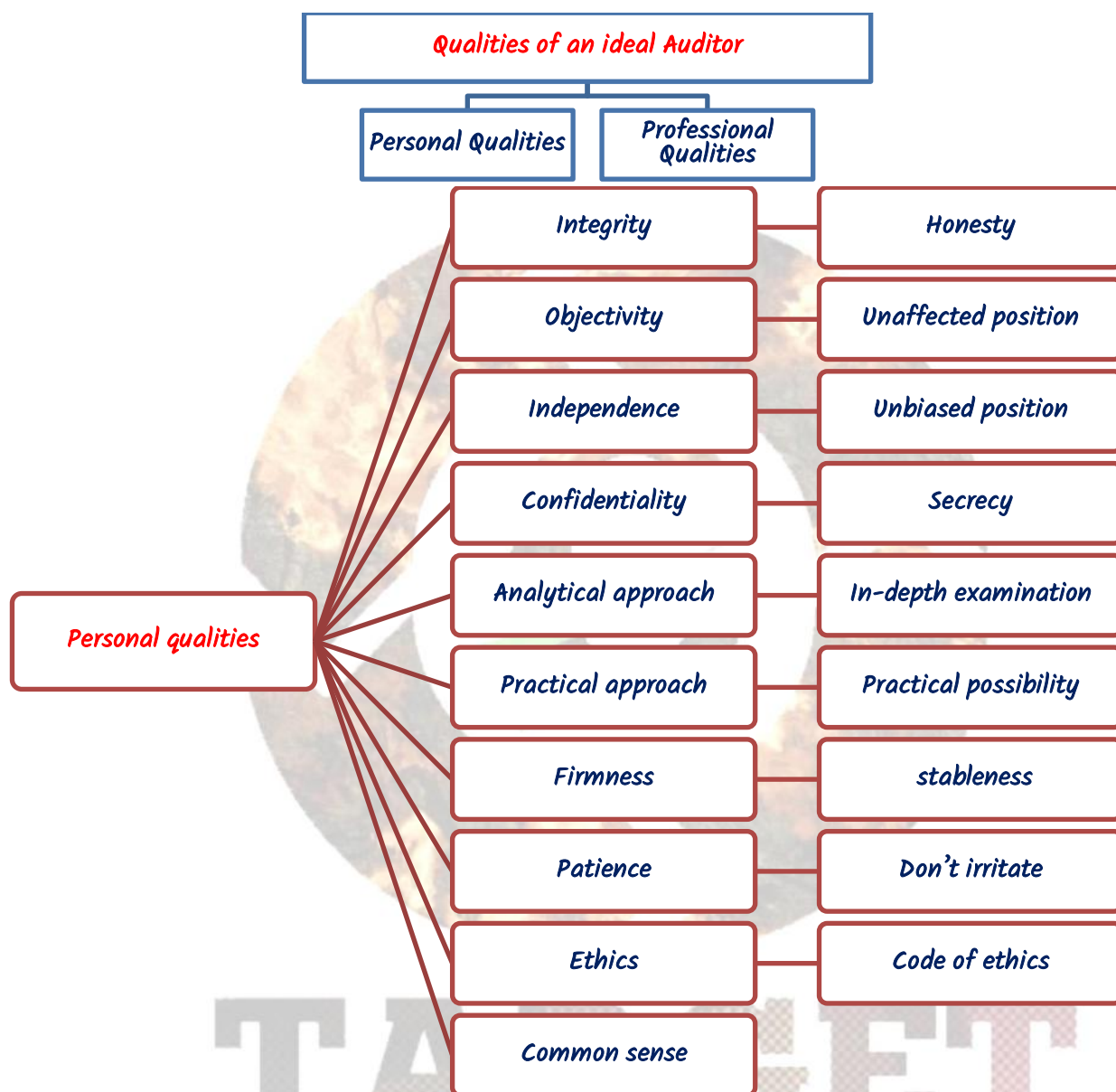
Unable to obtain audit Evidence

BASIS	AUDIT	INVESTIGATION
Meaning	Auditing is an independent and systematic examination of the evidence underlying the accounting or other data in accordance with the generally accepted auditing practices to ascertain the true and fair view of the financial statements of an enterprise.	An investigation may be defined as an examination of accounts and records with a view to ascertain any fact for some special purpose which varies from assignment to assignment.
Scope	The audit has a wide scope. In statutory audit, the scope is determined by the relevant law and in case of a private audit (e.g. management audit) by a client.	The scope of investigations, on the other hand, is limited as regards the period or areas to be covered.
Objective	In audit, the accounts and records are verified as to their truth and fairness.	Investigation is for special purpose (e.g. investigation on the behalf of incoming partner)
Audit Procedure	The audit is conducted in accordance with the generally accepted auditing principle.	Investigations involve an extended auditing procedure.
Evidence	An auditor will evaluate the accounting records predominantly based on persuasive evidence.	An investigator can draw his conclusions only on the basis of substantial or sometimes conclusive evidence.
Approach	Auditor is skeptical and not suspicious.	Whereas an investigator starts with suspicion and collects evidence to either confirm or dispel that suspicion.
Periodicity	Auditing is a routine exercise (normally conducted annually).	Investigation may spread over a gap period longer than one year.

TARGET
Academy

CONCEPT - 3

QUALITIES OF AN IDEAL AUDITOR



CONFIDENTIALITY

- The auditor should not leak information collection by him, during the course of his professional work, to any third party
- Exception
 - Client permits.
 - When there is any legal obligation.

Professional qualities

Expert Knowledge in Accounting

Expert Knowledge in Auditing

Knowledge about business transactions

Knowledge of the required acts

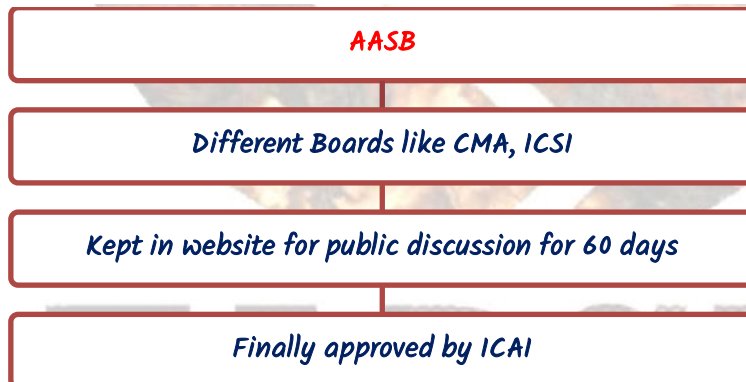
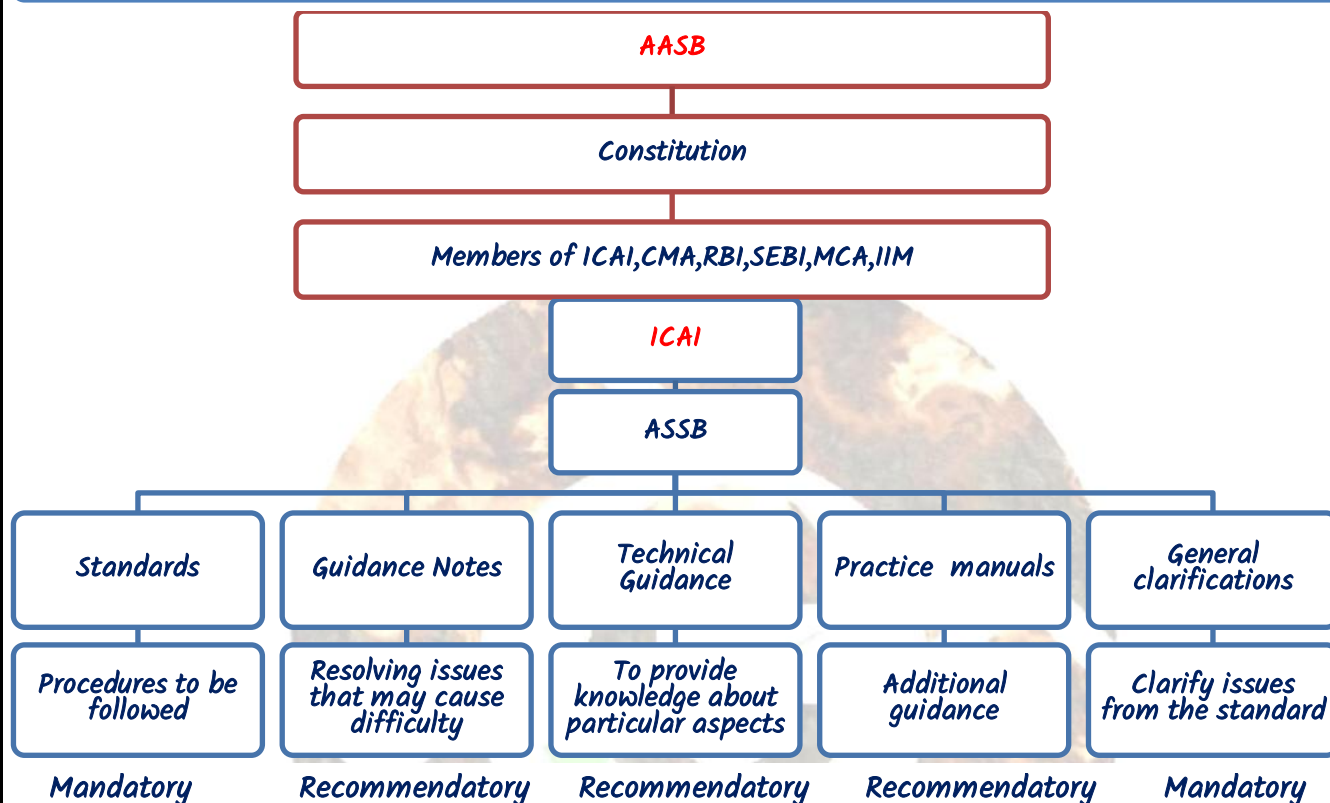
Knowledge of latest amendments



TARGET
Academy

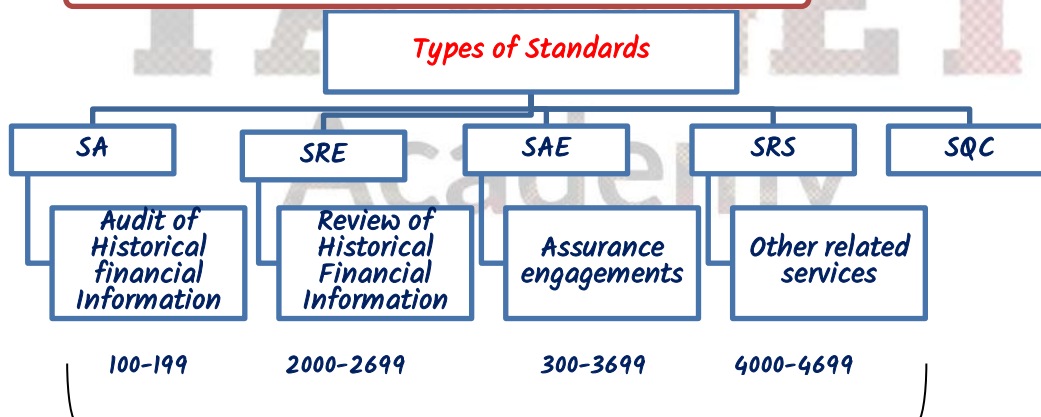
CONCEPT-4

STANDARDS INTRODUCTION



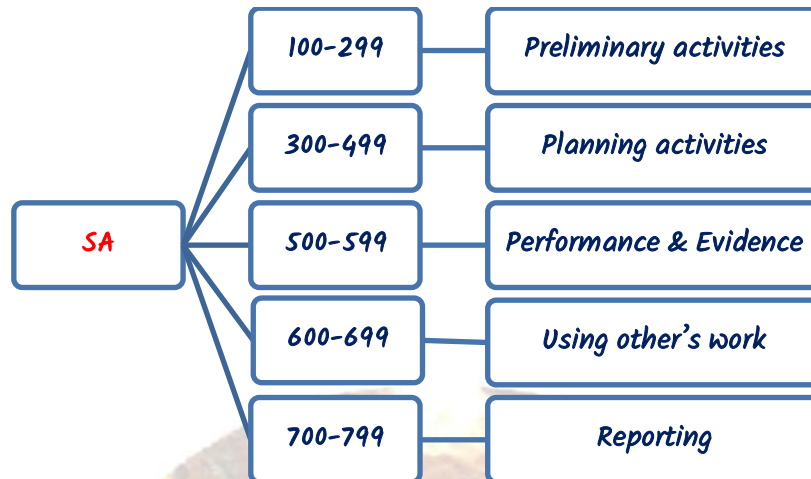
For comments & mistakes from different Boards

- again refer to AASB for rectification



Engagement standards

- Up 2002 SAP
- 2003 to 2007 AAS
- From 2008 SA



- SA-200:- Overall Objectives of an Independent Auditor and Conduct of an Audit in accordance with SA's



TARGET
Academy

CONCEPT-5

SA - 200

SA-200

Over all objective

How to achieve that objective

Obtain reasonable assurance that F.S are free from Material Misstatements

Express an opinion that F.S are prepared in accordance with FRFW

No future viability

No opinion on efficiency & effectiveness on Management

Report on Specific matters

Ethical Requirements

Professional Skepticism

Professional Judgment

Obtain S&A A.E

Compliance of SA

1.

Obtain reasonable Assurance

F.S are free from Material Misstatements

2.

Express an opinion

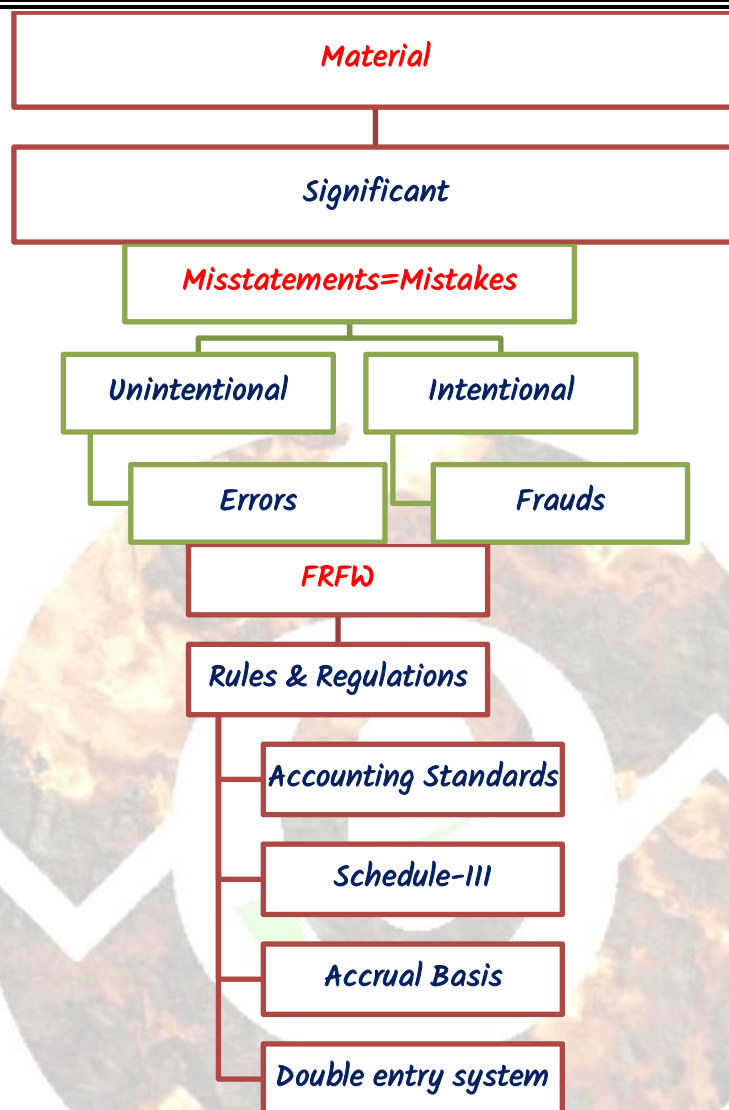
F.S are prepared in accordance with FRFW

Reasonable

High Level

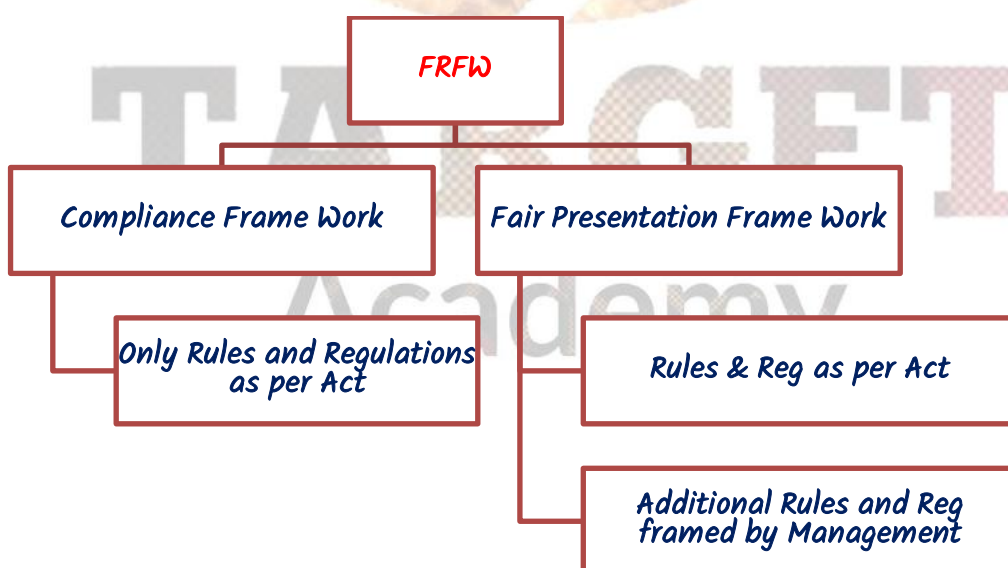
Not 100%

99.9%



Who are responsible to Frame FRFW?

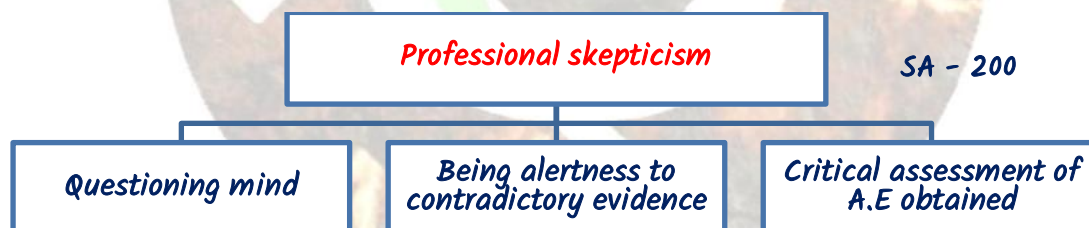
Responsibility to frame FRFW is on Management





• **What is Professional Skepticism?**

- It is Questioning Mind
- Auditor should has to maintain Professional Skepticism through the Audit.
- Being alertness to the contradictory evidence, Fraud risk factors
- Critical assessment of Audit evidence gathered.



Examples – FRF, ROMM

What is Professional Judgment?

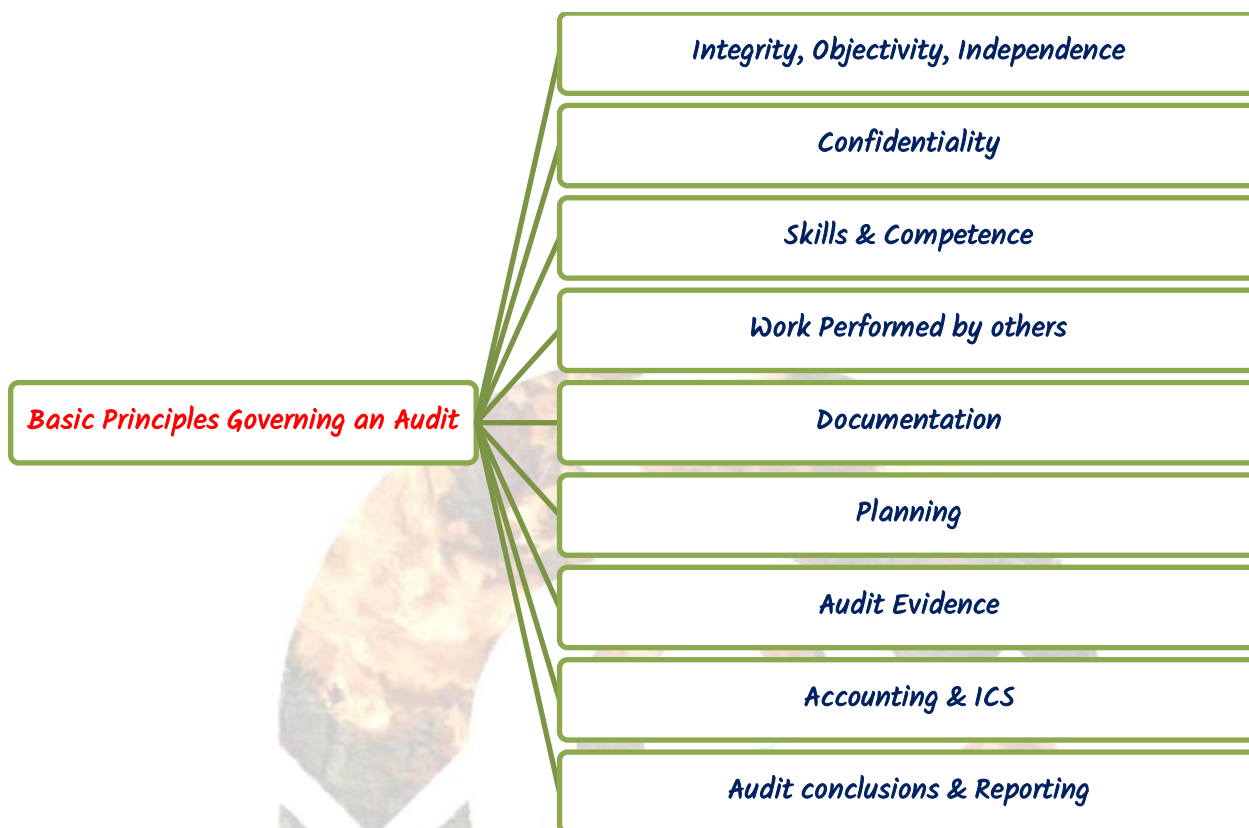
Taking Decisions by using his Knowledge, Experience & Training



SITUATION WHERE P.J IS USED

- Sampling
- Materiality.
- Audit Risk.
- NET of Audit Procedures.

- S & A of A.E.

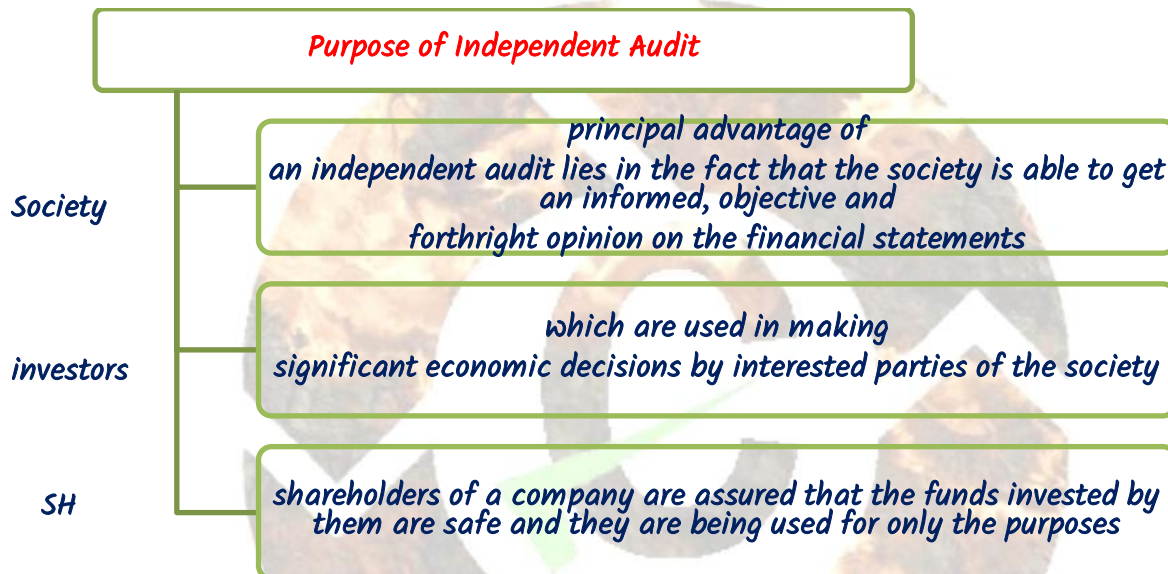


TARGET
Academy

CONCEPT-6

INDEPENDENT AUDIT

- Independent Audit
- Meaning:- The judgment of a person is not subordinate to the wishes and directions of other person
- It is one of the Basic principle governing an Audit as per SA-200



SH

- Reliable F.S for investment decisions
- Protects the interest of SH

Management

- For decision-making purposes.
- Moral check on client staff

Lenders & Creditors

- Rely on audited FS while issuing loans
- To establish the degree of safety of their money.

Government

- levies tax putting a prima facie reliance on the statements
- regulates the socio-economic state of affairs

Financial analysts

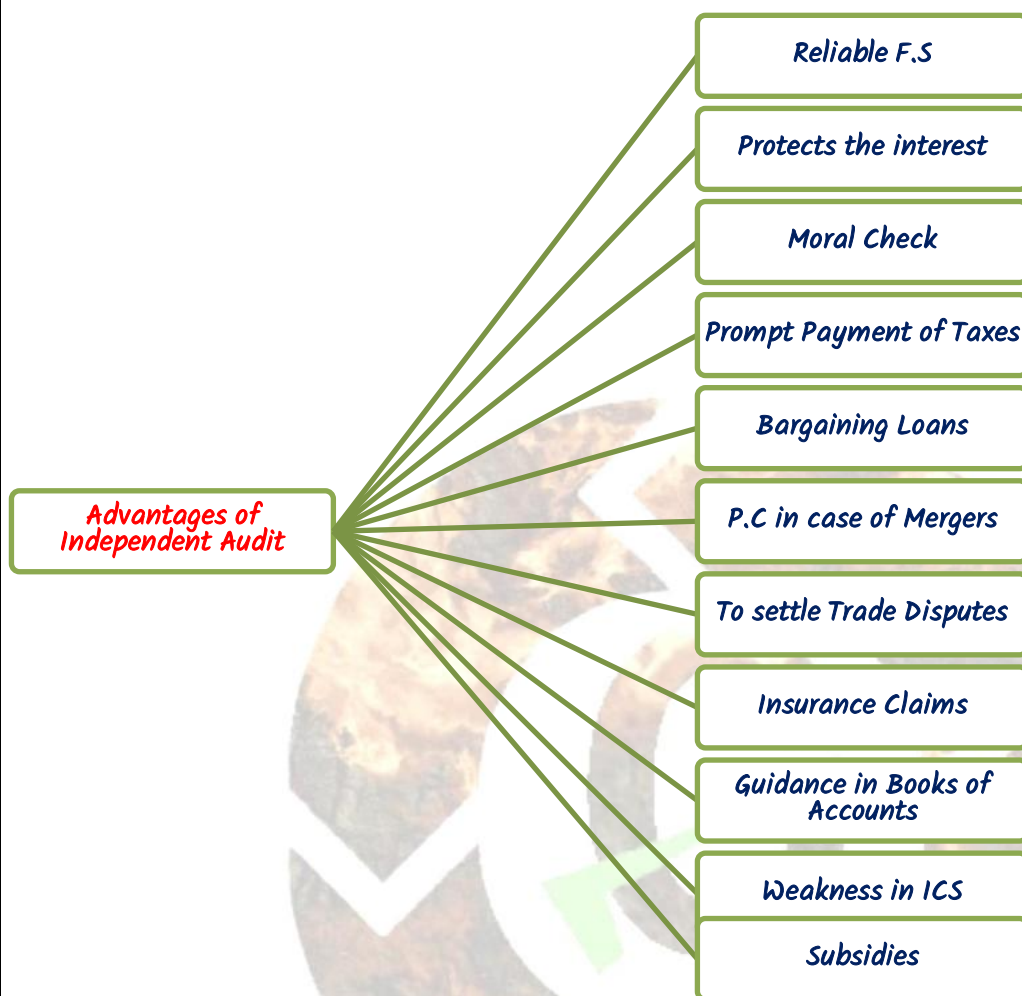
- To assess the performance of an entity.

Employees

- Proper payment of bonus
- To settle trade disputes

Partnership

- valuation of goodwill at the time of admission, retirement and death of a partner.

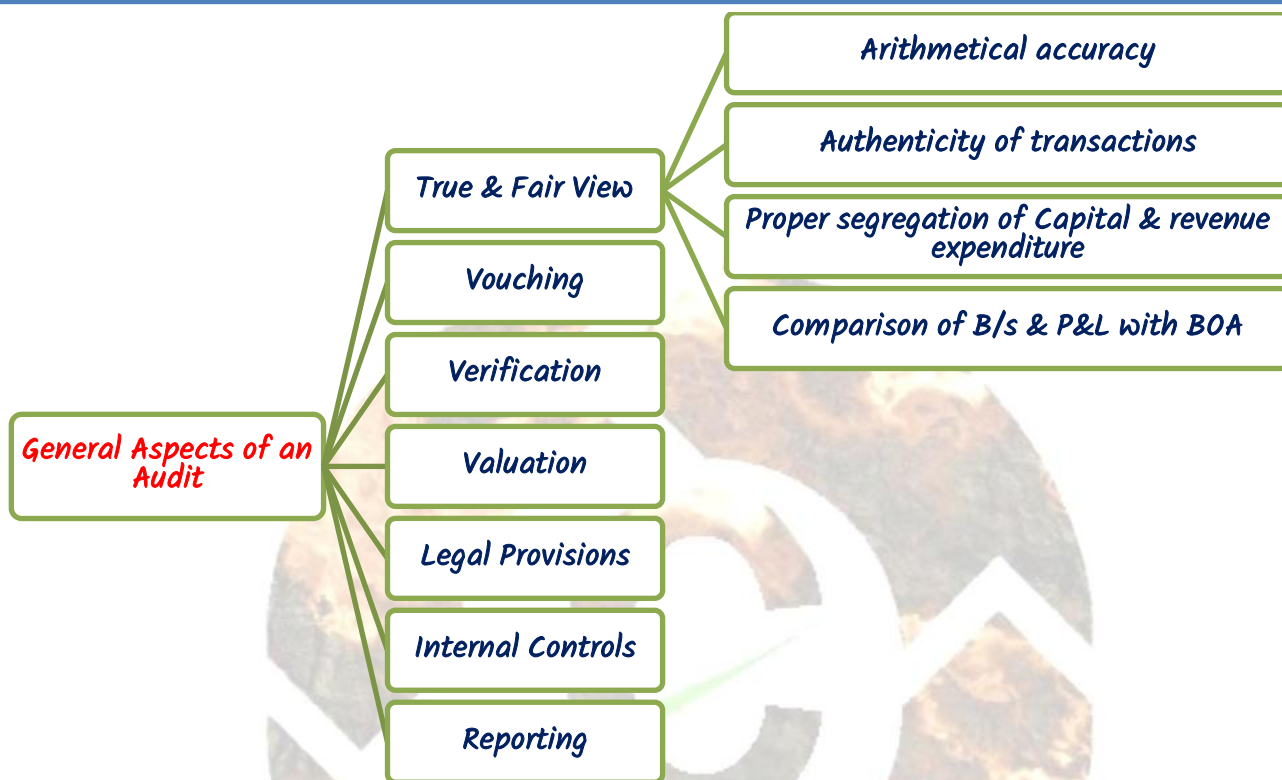


PRECAUTIONS TAKEN IN ACT TO PROTECT THE INDEPENDENCE OF AUDITOR



CONCEPT-7

GENERAL ASPECTS OF AN AUDIT

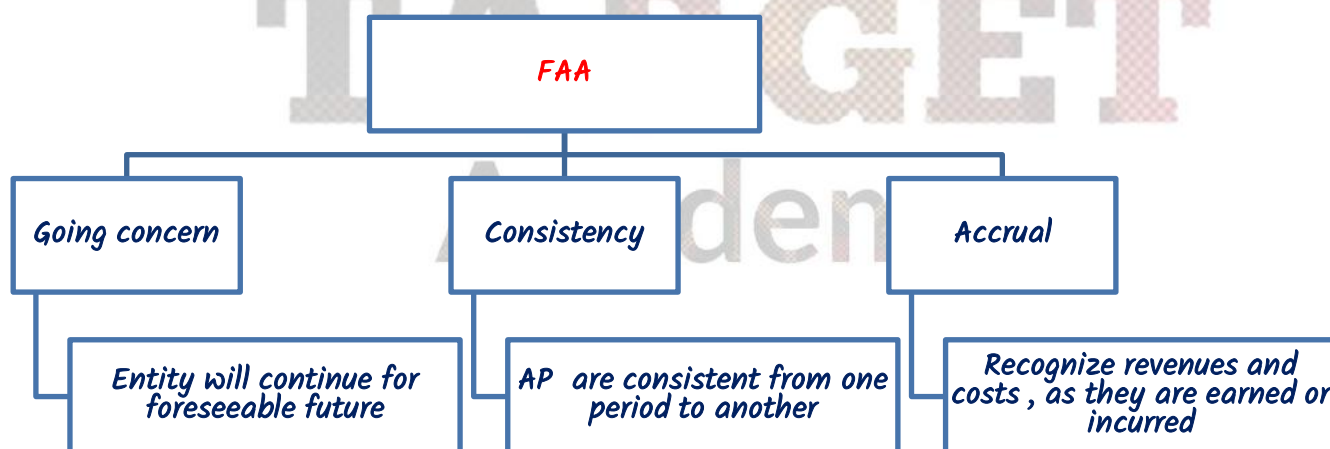
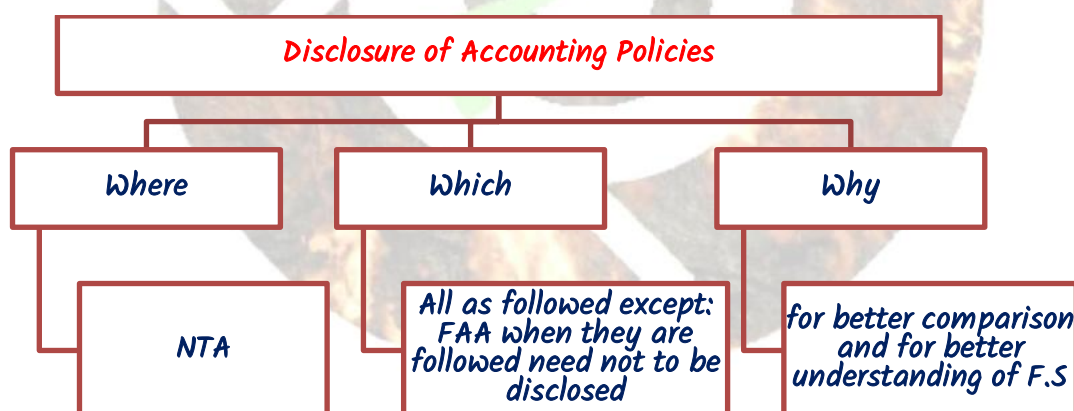
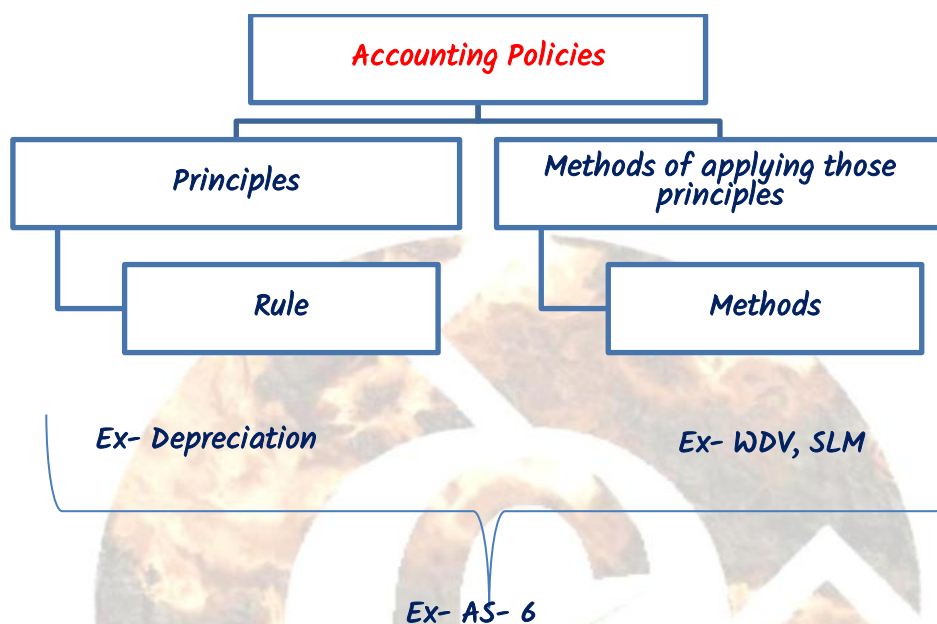


- Does the Audit of Financial Statements Relieves the management of its responsibilities.
- No Management responsibilities are much broader which in any case can not be reduced by audit.
- Management are responsible to shareholders to conduct business in efficient and effective manner.
(Refer management responsibilities chart)

TARGET
Academy

CONCEPT-8

ACCOUNTING POLICIES



CRITERIA FOR SELECTING ACCOUNTING POLICIES

- Substance over Form
- Materiality
- Prudence



Ex- Vehicle Purchased on 28.03.2014 and total consideration paid and asset taken in position but registration completed on 5.04.2014

MATERIALITY

All material items should be disclosed separately

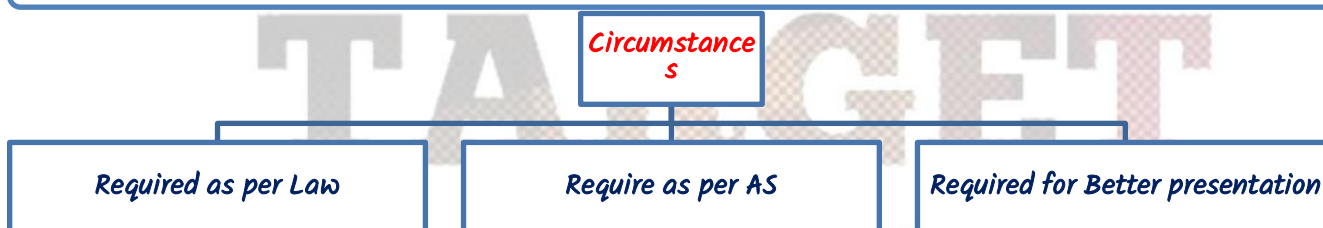
PRUDENCE

Recognise and anticipate for known loses but not gains

CONSISTENCY

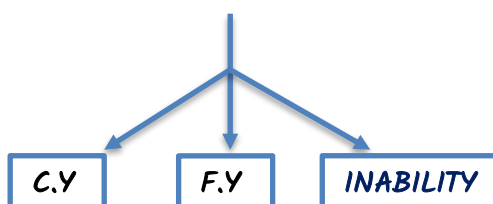
- AS policies should be followed consistently for year to year
- Generally changes to AS are not allowed
- But in the following case changes to AS are allowed

CIRCUMSTANCES WHEN CHANGES TO AS IS ALLOWED



DISCLOSURE REQUIREMENTS WHEN THERE IS CHANGES TO AS

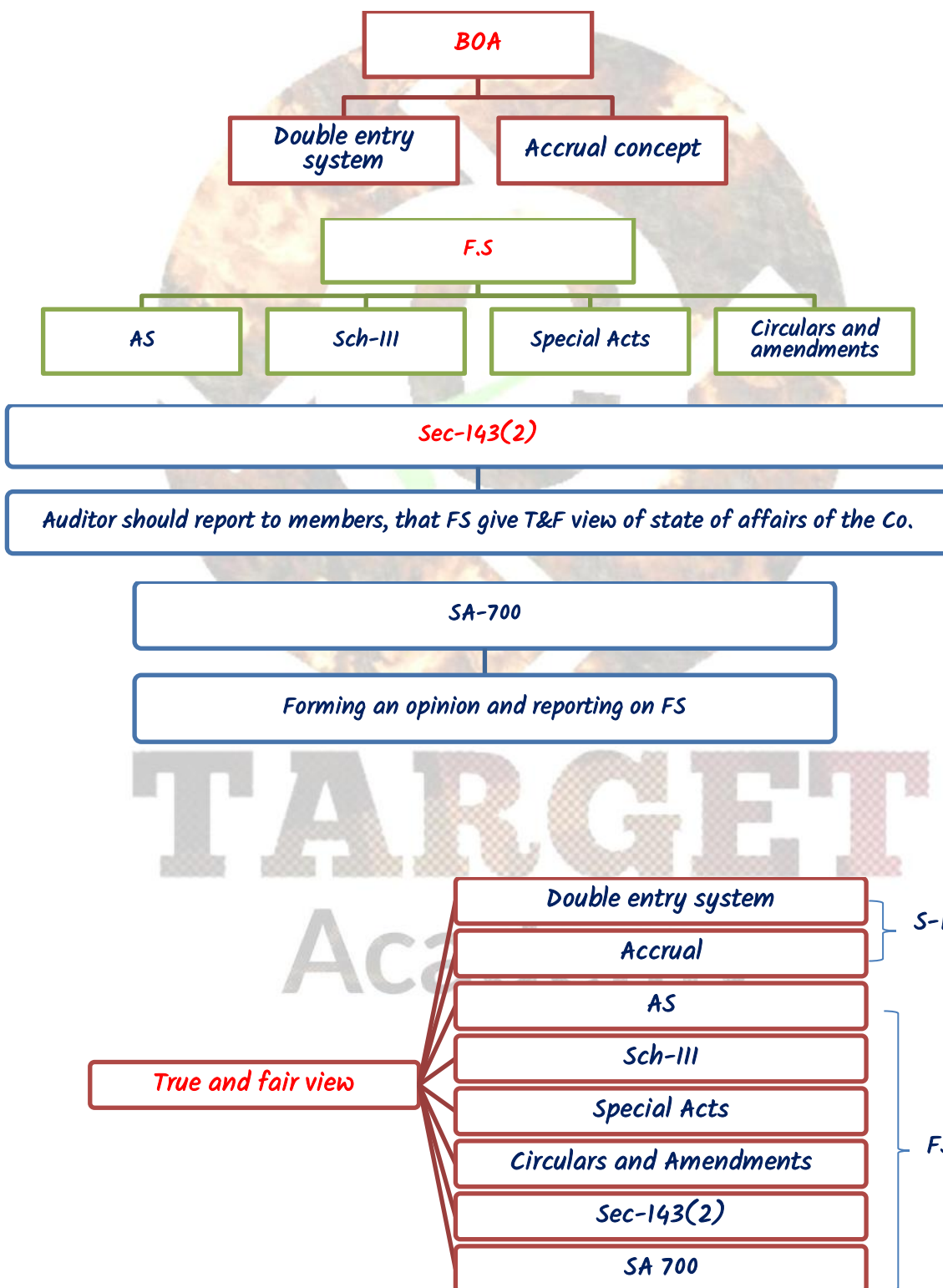
- Fact of consistency not followed
- Reasons of deviation
- Impact on FS due to such deviation



CONCEPT-9

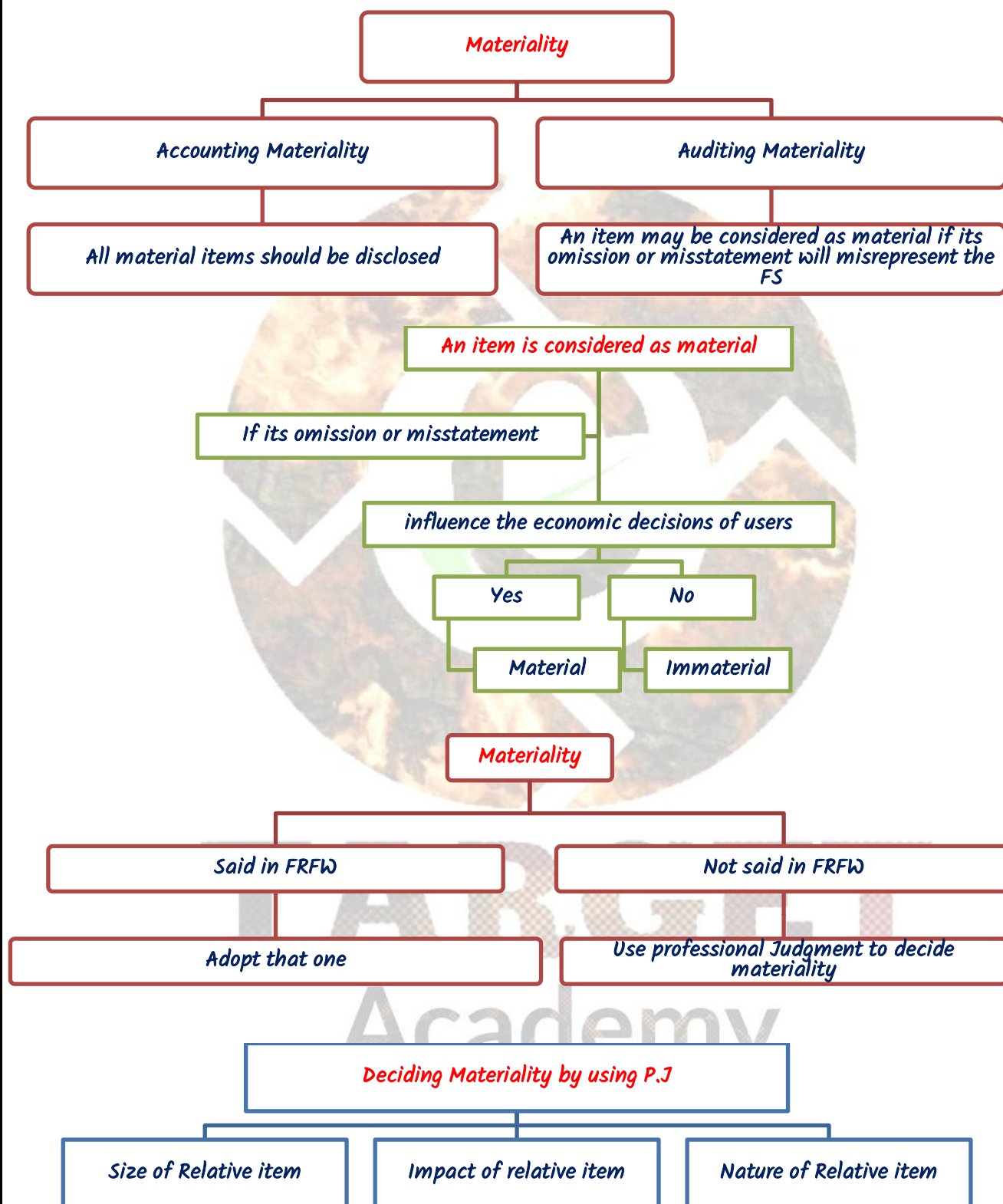
TRUE & FAIR VIEW

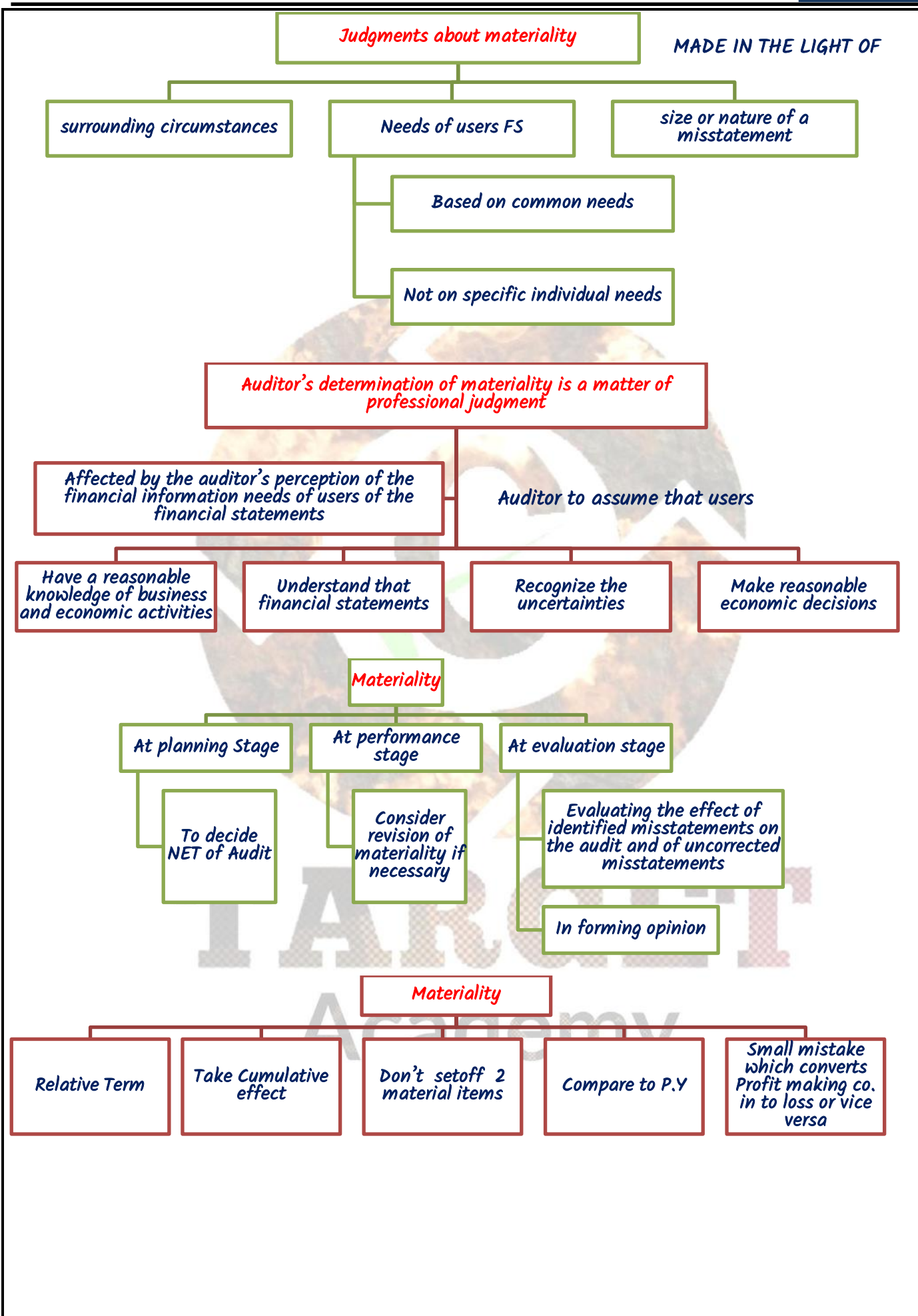
- True and Fair View
- It is not defined in any Act.
- But is defined in negative way in some sections

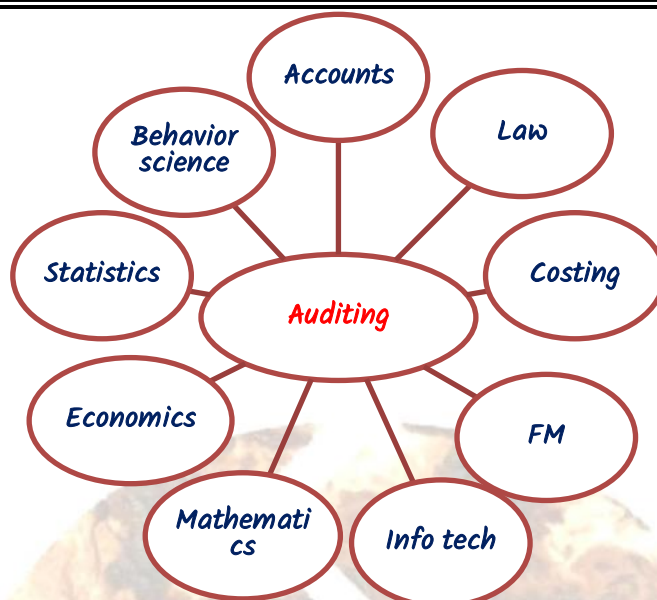


CONCEPT-10

MATERIALITY







The discipline of behavioural science is closely linked with the subject of auditing.

Knowledge about other fields

- The function of audit can be performed if and only if the person also possesses a good knowledge about the fields in respect of which he is conducting such a review.

Closely linked

- The discipline of behavioural science is closely linked with the subject of auditing

Interactions with people

- required to interact with a lot of people in the organisation

Basic element in ICS

- One of the basic elements in designing the internal control system is personnel

Efficiency of ICS

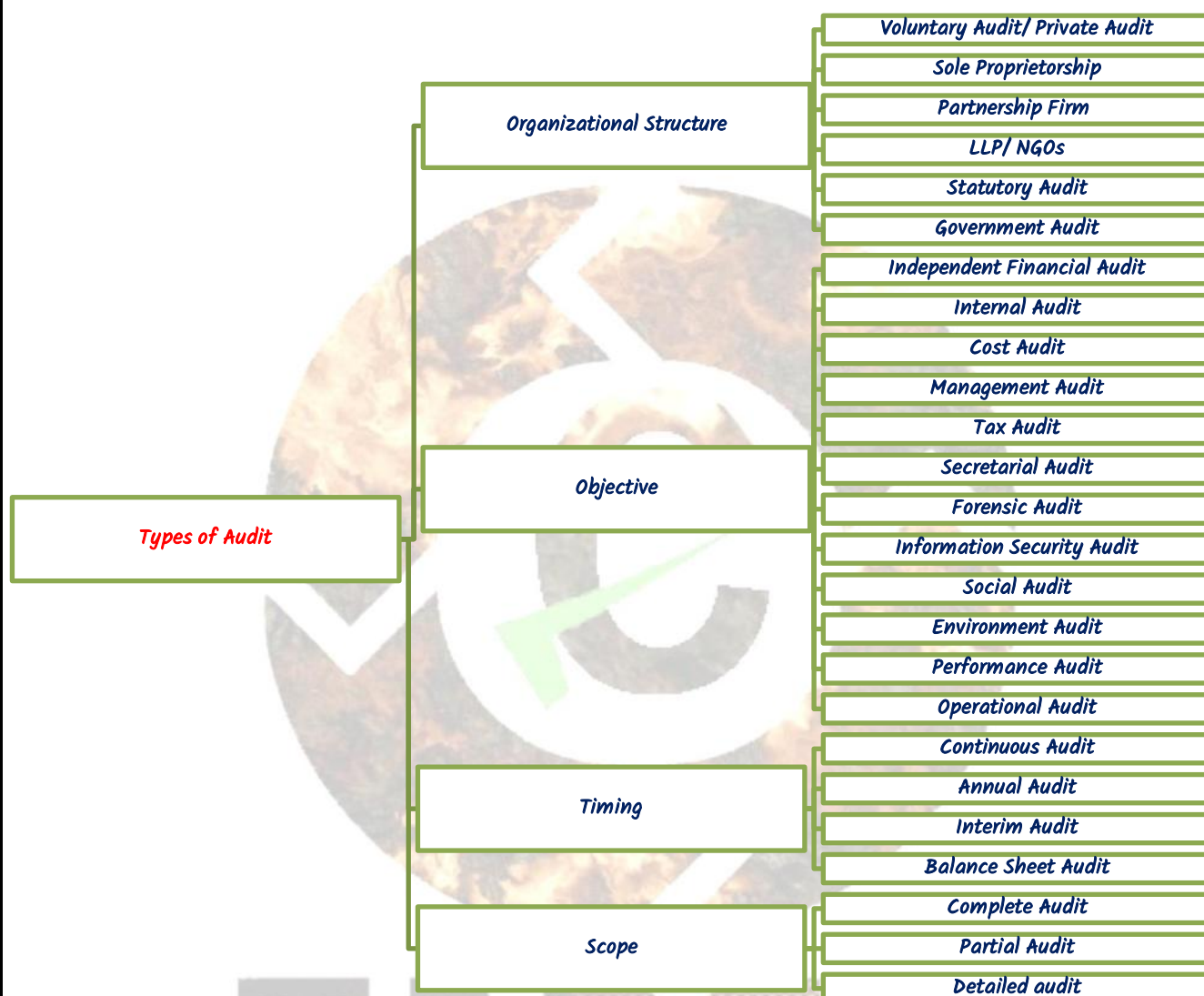
- ICS cannot work until and unless the people who are working in the organization are competent and honest.

Knowledge is essential

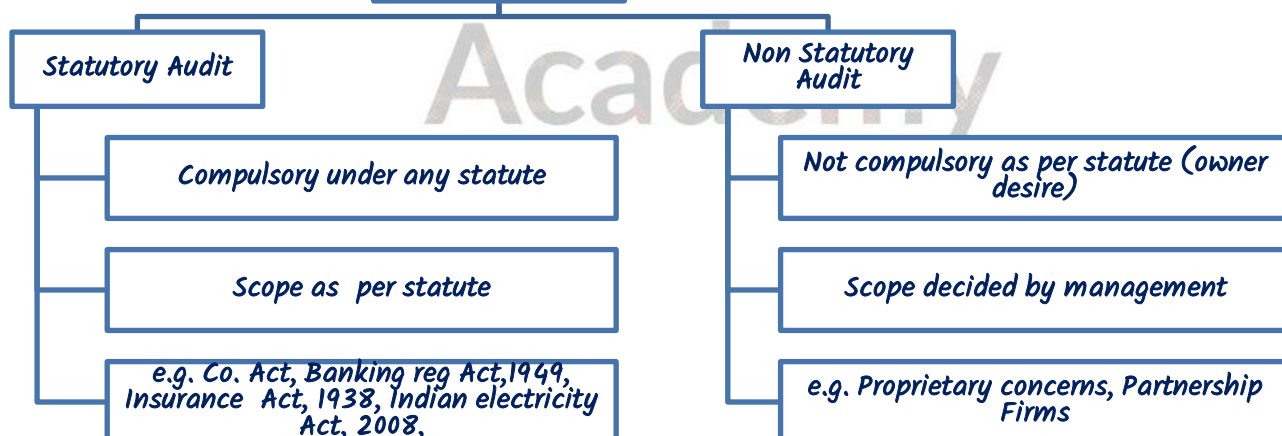
- The knowledge of human behaviour is indeed very essential for an auditor so as to effectively discharge his duties.

CONCEPT-II

TYPES OF AUDITS



Types of Audit



LSL No.	Basic	Statutory Audit	Government Audit
i.	Applicability	Applicable to a) All private companies b) All co-operative societies c) Proprietorship and partnership concerns in some cases. E.g. Tax audit under section 44AB of the Income Tax Act, 1961.	Applicable to a) Government departments b) Statutory corporations c) Government companies
ii.	Appointing Authority	a) In case of private companies: share - holders. b) In case of sole proprietor and partner - ship: proprietor or partners. c) In case of trust: trustee or Managing Committee. d) In case of co-operative societies: Man - aging Committee with prior approval of the Registrar.	e) In case of government departments Comptroller and Auditor General f) In case of statutory corporation: as per the provisions of the special statute for that corporation. g) In case of government company: Company Law Board, on the advice of the Comptroller and Auditor General.
iii.	Report	Report is submitted to the owners/ share - holders in a format prescribed by the Companies Act, 2013, in the case of Companies.	Report is submitted to the shareholders and a copy is given to the Comptroller and Auditor General in a format prescribed by the CA G.

PERIODICITY WISE CLASSIFICATION OF AUDIT:

PERIODICAL (OR) FINAL AUDIT (OR) ANNUAL AUDIT:

- Final audit is conducted at the end of the accounting year, after the BOA have been closed
- Auditor may use statical sampling methods and techniques which lead to time effectiveness.

Advantage:

- It does not interrupt with the regular functioning of the clients accounting (or) operation.
- The possibility of tempering with the books of accounting is considerably reduced.

Disadvantages (or) limitations:

- Reduces the possibility if detection of frauds and errors.
- It delays the presentation of audited F.S to the S/H's

Interim audit:

- It is the audit conducted between two annual audits.
- It may be conducted for specific period, such as quarterly or half yearly

Objective:

- Ascertainment of interim profit (or) loss and declaration of interim dividend.
- Change in the structure of P.S firm.
- Determining goodwill & net worth of any business for acquisition purpose.
- Investigation of any suspected fraud
- Obtaining loans from F.I's
- Valuation of shares on certain date in case of mergers.

Continuous audit:

The examination and verification of firms transactions and their supporting documents continuously throughout the year, at regular or irregular basis.

Basic features:

- It is a process conducted throughout the year
- It focuses on testing 100% of transactions
- Technology is important to enable it.
- Surprise visits by audit are involved.

Necessity:

- Where I.C's are inadequate.
- Transactions run in large numbers
- Better management of resources

Advantages:

- Early location of errors and frauds
- Quick rectification
- Continuous guidance to client
- Finalizations of accounts completion in time.
- Improves statutory auditors focus.

Demerits:

- Possibility of tempering with the BoA after the audit is over.
- Frequent visits made by the auditor may cause inconvenience of work.
- It is more expensive, because the auditor has to devote more time to this audit

LIMITED REVIEW:

- As per clause 33 of SEBI regulations, 2015 a company shall submit its quarterly, year to date and annual financial results to the stock exchange in the prescribed manner.
- According a company has an option to submit audited or unaudited quarterly year to date financial results to the S.E within 45 days from the end of each quarter.
- The auditor finds little time to conduct thorough examination, so instead of a full-fledged audit, the auditor has to make restricted study of book and other documents.
- This system of review is called L.R audit.

OBJECTIVE WISE:**Cost audit:**

- It involves an examination of cost books, cost accounts, cost statements with a view that these represent true and fair view of the cost of production.
- It acts as a tool of control in the hands of manager enabling it to identify the areas of inefficiency and wastage

Management audit:

- Management audit is a comprehensive and critical review of each and every aspect of the managing process
- Tool of management control, which helps in improving the efficiency of the management.

Operational audit:

- It involves examination of all the operations and activities of the entity under audit.
- The examination of the control structure of the entity, the relation of department control to general policies and its relation with control of other department.
- Internal audit focuses on accounting operations of the entity but operational audit has a wider scope of working and cover all other operations, such as production and marketing also.
- The operational audit is also one of the tools used in large or geographically vast entities to control the operation at first stage and to fill up the gaps of information provided by department heads through period reports.

Eg:

- whether operating standards are followed
- Whether the overall target capacity utilization is met.

FORENSIC AUDIT :-

- The objective is to determine and True B. Value has been reflected in F.S. the facts behind any suspected fraud / Embezzlement.
- Focus is to find the depth of the suspected fraud, and Report.

Eg :- * Amount of fraud involved

* People involved

* Legal implications

EFFICIENCY CUM PERFORMANCE AUDIT :

- Evaluation of financial and operational Performance
- Identification of opportunities
- Removal of weaknesses

Scope :

Economy Audit : Resources Procured at Min. Cost.

Efficiency Audit : Relation b/w input and outputs (utilization of resources)

Effectiveness : Appraisal of performance with reference to targeted objectives

Propriety Audit :

- It is not just concerned with truthfulness and fairness of the financial statement
- Business practices and activities undertaken are not against public interest
- It is essential element of a govt. audit
- Audit done by the CAG

Social Audit :

- Social Audit is away of measuring, understanding, reporting and improving an organization's performance towards meeting its social and ethical objectives.

Objectives :

- Assessing social needs
- Spreading awareness
- Increasing CSR efficiency
- Scrutiny of policy decisions

Advantages :

- Encourage Community participation
- Shared responsibility (Collective decision making)
- Environmental protection
- Customer satisfaction and Trust
- Develops Human resources

Information Systems Audit :

- It evaluates IT asset safeguarding, data integrity, system effectiveness and system efficiency in computer based information systems.

Need :

- Risk of losing the data resources
- The Possibility of misallocating resources.
- The Possibility of computer abuse
- High value of computer hardware, software and personnel
- High cost of computer error.
- Need to maintain the privacy of individual persons.

Environmental Audit :

- It is the examination of accounts of revenues and cost of environmental and natural resources, their estimates, and values recorded in the BOA.

Scope & Objective :

- To Check emissions to air, land and water
- To ensure compliance with legal constraints
- It provides expert opinion on hazards in the environment
- To analyse effects on surroundings
- To verify the public perception
- Measures to controls of risks.

D/F Steps of an environmental audit.**(a) Pre-audit Activities**

- Selecting and scheduling of facility to audit
- Selection of audit team
- Contact with facility
- Planning of an audit

Site activities:

- Understanding the internal Controls.
- Assessment of internal controls.
- Gathering of audit evidence.
- Evaluation of audit findings.
- Report of finding to facility.

Post- audit activities:-

- Production. of a draft & Report.
- Production of a final report.
- Preparation & implementation of an action Plan.

SECRETARIAL AUDIT:-

- To be recognized with growing Complexities the corporate Laws.
- Failure to comply with corporate laws may invite heavy Penalty and/or even Imprisonment.
- It assures the corporate body that the legal requirements have been duly complied with and in time.
- Rectifies the situation with much Lesser problems and costs.

AS PER SCOPE**COMPLETE AUDIT:**

- Scope is not confined to specific limits.
- Check all possible aspects
- Covers accounting, operational, administrative and all other arrears.
- Practically not possible

PARTIAL AUDIT:

- Scope restricted to specific aspects.
- Not allowed to obtain other info.
- Ex: TO check cash Sales during Diwali

DETAILED AUDIT:

- Audit-in-Depth
- Check selected transactions in depth.
- From recording till disposal (all Stags)

INTERNAL AUDIT

- continuous and critical appraisal of the functioning of entity with a view to suggest improvements
- It points out irregularities, non-compliances timely and not after year end as in case of Statutory Audit. It believes that "prevention is better than cure".

FORENSIC AUDIT

- involves examination of legalities by blending the techniques of propriety audit, regularity, investigative and financial audits
- objective is to find out whether or not true business value has been reflected in the Financial Statements

SOCIAL AUDIT

- A social audit is a way of measuring, understanding, reporting and improving an organization's performance towards meeting its social and ethical objectives.
- Scrutiny of policy decisions, keeping in view the interests of stakeholders.

ENVIRONMENTAL AUDIT

- environmental audit may be defined as a systematic, documented, periodic and objective review by a regulated entity of facility operations and practices related to meeting environmental requirements.

EFFICIENCY - CUM- PERFORMANCE AUDIT

- It is an examination of the financial and operational performance of an entity. It includes identification of opportunities of greater economy as well as removal of weaknesses after evaluation.

PROPRIETY AUDIT

- A propriety audit is not just concerned with the truthfulness and fairness of the Financial Statements and books of accounts of the client, but also ensures that the transactions entered into by the client, business practices and activities undertaken are not against public interest
- It is an essential element of a Government Audit

OPERATIONAL AUDIT

- Operational Audit involves examination of all the operations and activities of the entity under audit.
- The examination of the control structure of the entity. The relation of department controls to general policies and its relation with control of other departments.

Final Audit

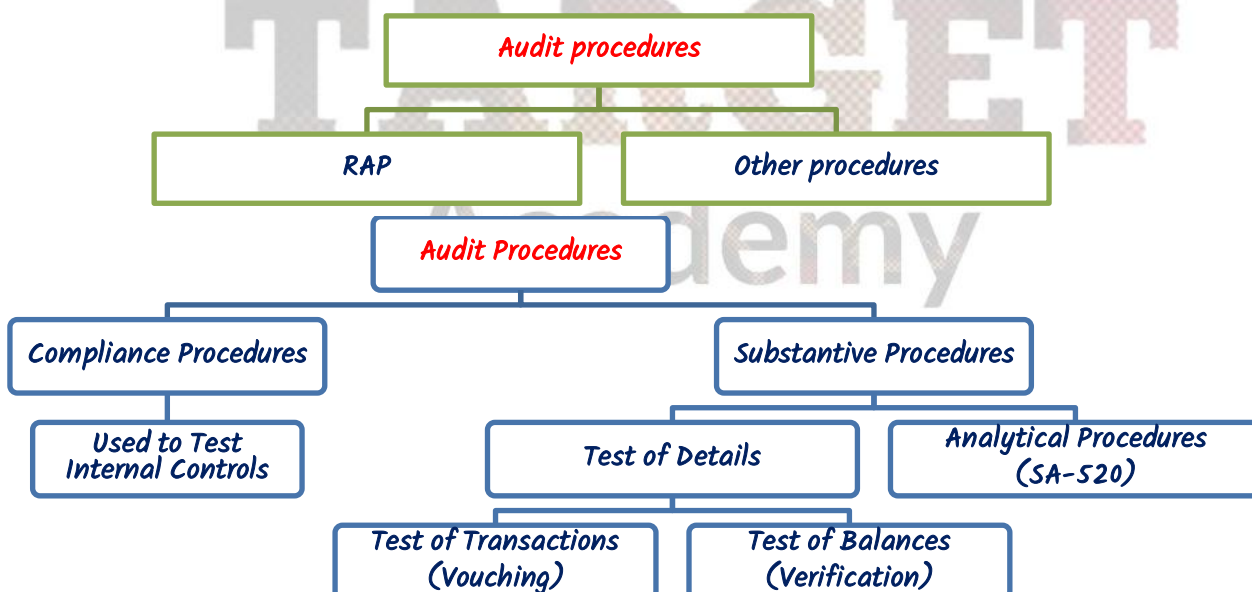
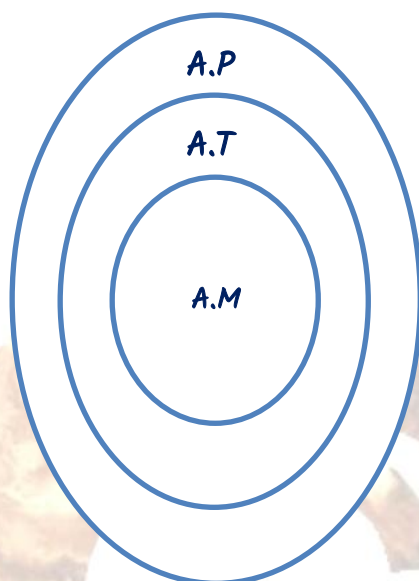
- Begins after the end of the year and continuous till the audit is completed
- All the Audit is done at one time

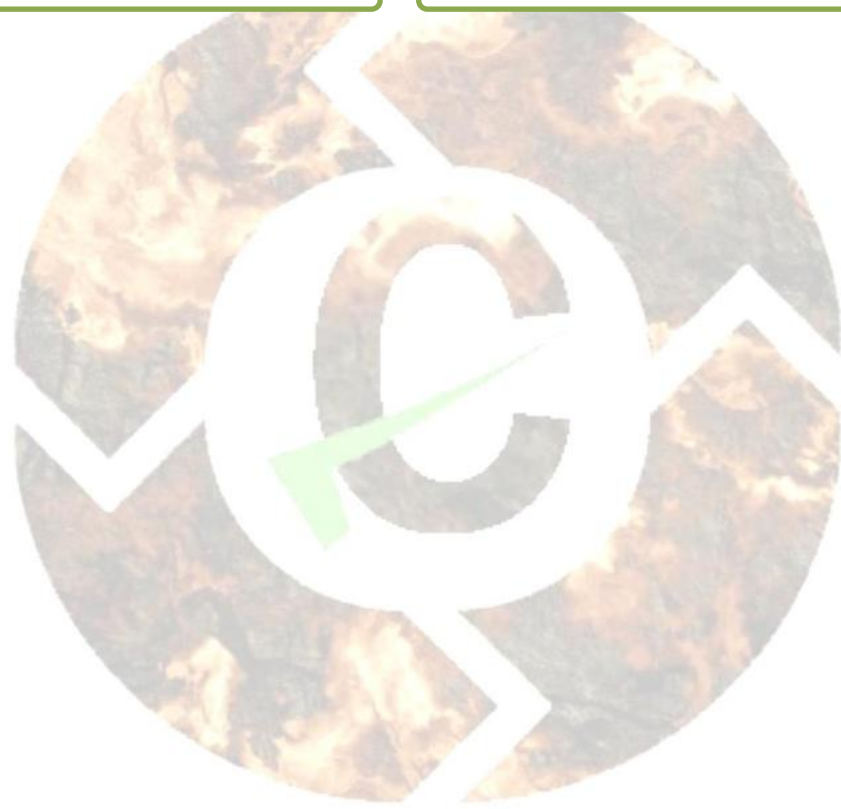
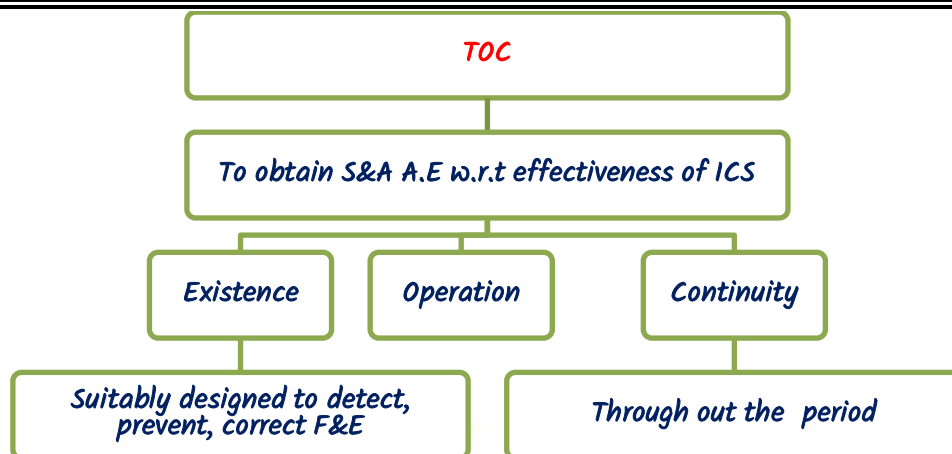
Continuous Audit

- Audit is conducted continuously like monthly quarterly etc.
- Auditor visits client place at regular intervals i.e. during the F.Y (not only at the end of the year)
- It is also known as Detailed Audit

CONCEPT-12

AUDIT PROCEDURES

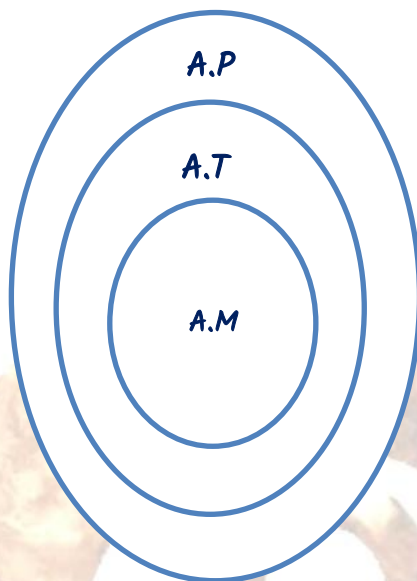




TARGET
Academy

CONCEPT-13

AUDIT TECHNIQUES



AUDIT TECHNIQUES: Tools adopted by the Auditor while performing Audit

SOME OF THE COMMON AUDIT TECHNIQUES

ROUTINE CHECKING:

- ❖ The routine Checking is a Part of vouching.
- ❖ Simple checking done in a routine manner can reveal the critical errors and frauds of very ordinary nature
- ❖ Thus, this routine checking ensures arithmetical accuracy and in the process detects the material misstatements.

TEST CHECKING:

- ❖ Checking a few transactions selected at random from a large number of transactions.
- ❖ It is also known as "Selective Verification or Sampling Process."
- ❖ Use of test checking depends much upon the system of Internal check and Auditor Judgment.

Precautions:

- ❖ Entries selected for test checking must be representative of all transactions and entries on random basis should be selected for checking
- ❖ Select the test independently with at regard to the suggestions of the client staff.
- ❖ Should not adopt test check while checking the entries of first and Last month of the year and all transactions should be checked.
- ❖ NOT recommended for
- Seasonal Industries

- Transactions of non-recurring nature
- Transactions of legal importance
- Accounting estimates
- Presentation & Disclosures.

AUDITING IN DEPTH

The Procedure where a few Selected transactions are meticulously examined from their beginning to their Conclusion.

STEPS:

1. The auditor first reviews the effectiveness of the I.C.S.
2. Then, Select a few material transactions from each Category.
3. Finally, Conduct critical examination.

CUT-OFF EXAMINATION:

- Focuses on ensuring that transactions are recording in the correct accounting year
- Verify that transactions and events occurring near period are the end of a financial Period included (or) Excluded from that Period's F.S.
- This is essential to eliminate any Scope of manipulation of accounts.

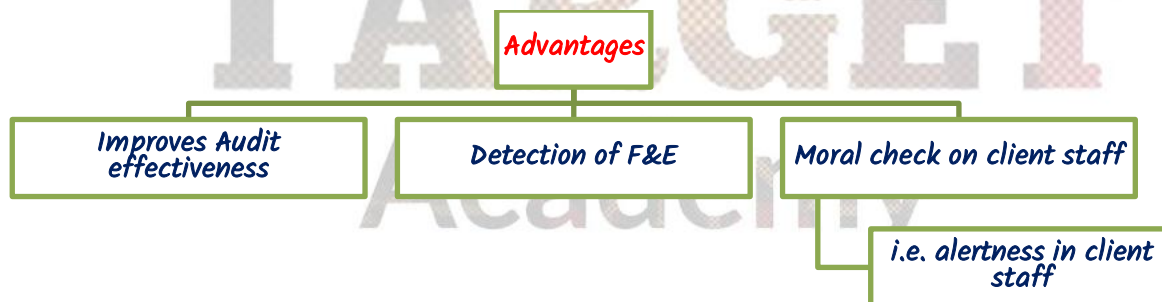
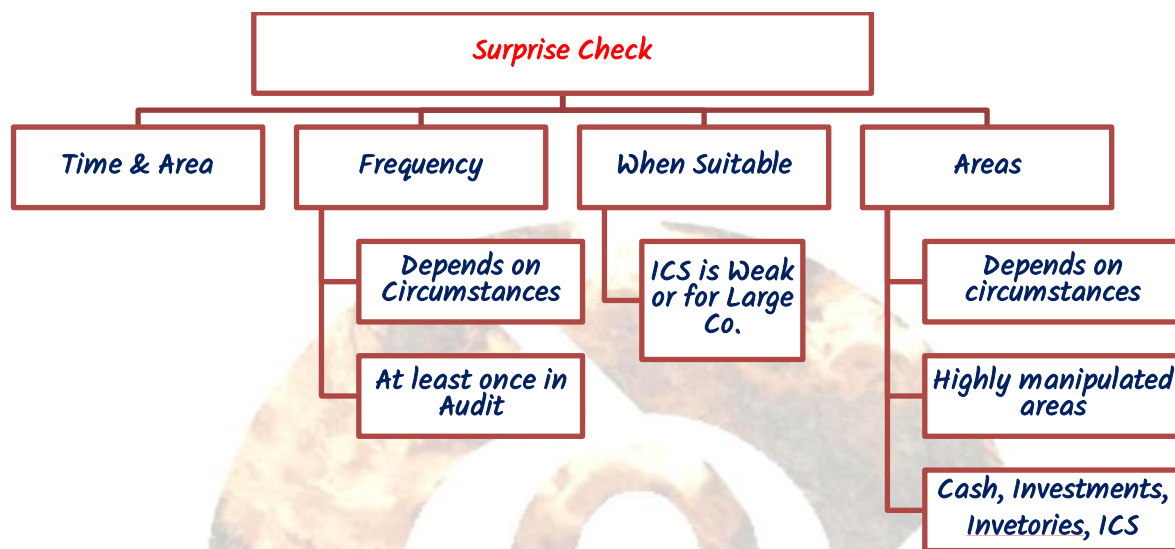
WALK THROUGH TEST:

- Tracing one or more transactions through accounting System and observing how it is actually Passed through the internal Control System.
- Verify few Selected transactions only.
- If, test reveals serious weakness of the Internal control system, the auditor may opt for verifying.

E.g. The auditor may decide to trace a purchase transaction from its initiation to its Completion and recording

SURPRISE CHECK:

- It means surprise visit by the Auditor with out any prior intimation
- Generally in Surprise check areas of vulnerable are concentrated Ex :- Cash, stock, ICP etc.

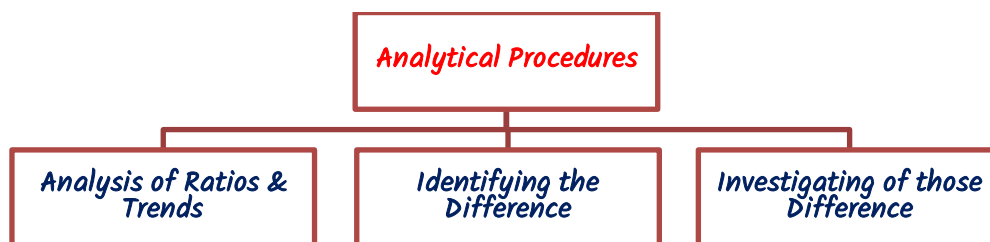




TARGET
Academy

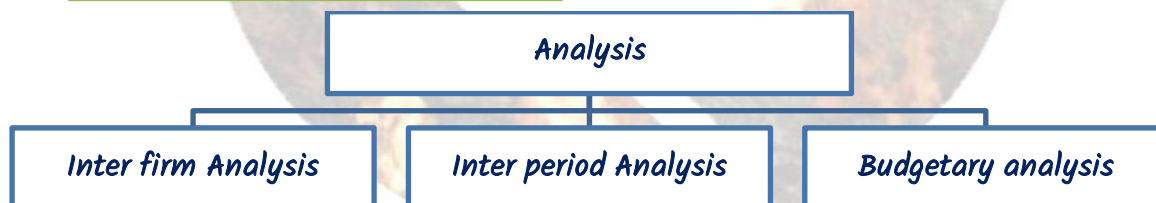
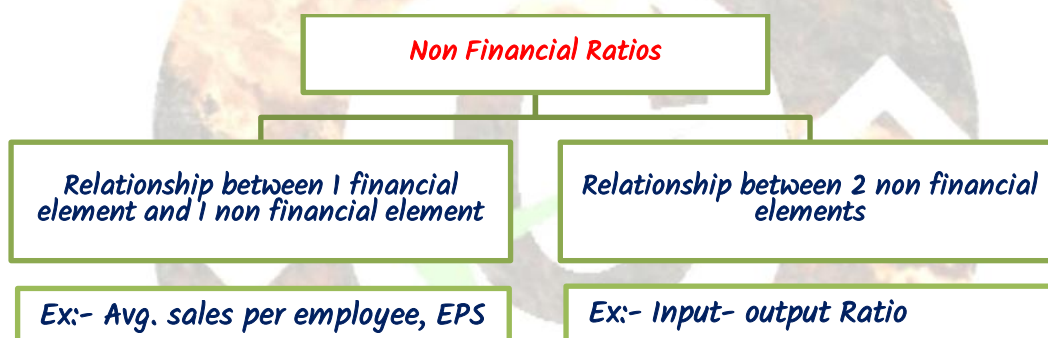
CONCEPT-14

ANALYTICAL PROCEDURES



FINANCIAL RATIOS

- Financial Ratios are the Relationship between two Financial elements
- Example:- $GP\ Ratio = \frac{G.P}{Sales} * 100$



- Due to Analytical procedures we can identify only areas where misstatement are present but we don't know that misstatement
- We have to do Test of Details to identify such misstatements

TOOLS AND TECHNIQUES OF ANALYTICAL PROCEDURES

As per SA-520, analytical procedures include application of the following tools and techniques:

a. Trend Analysis: Under this method, analysis is done for to assess fluctuation of the amount of any item over the year or years.

b. Testing of Reasonableness: This is done by comparing certain items or account balances with other accounts or balances. Some examples are as follows;

(i) Raw material consumption to production (quantity)

(ii) Percentage of wastage and scrap against production and raw material consumption

(iii) Work-in-progress based on material issued

c. Ratio Analysis: This technique calculates different ratios between various items of financial statements in order to study their relationships. Some common ratios include:

(i) Gross Profit Ratio

(ii) Receivable Turnover Ratio

(iii) Inventory Turnover Ratio

d. Sources of Information: Analytical procedures also require analysing the following sources of information.

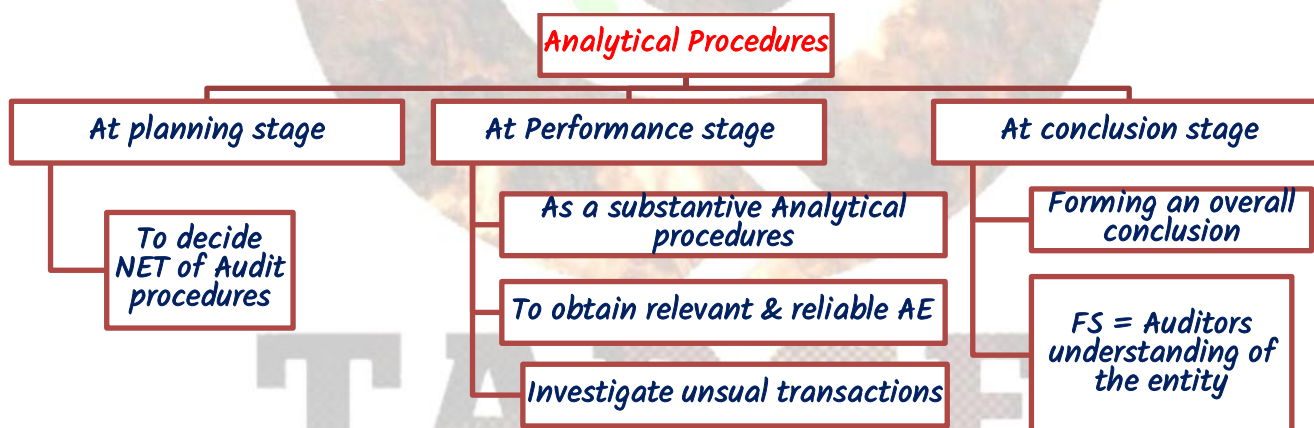
(i) Interim financial information

(ii) Budgets

(iii) Management Accounts

(iv) Non-financial information etc.

APPLICATION OF ANALYTICAL PROCEDURE:



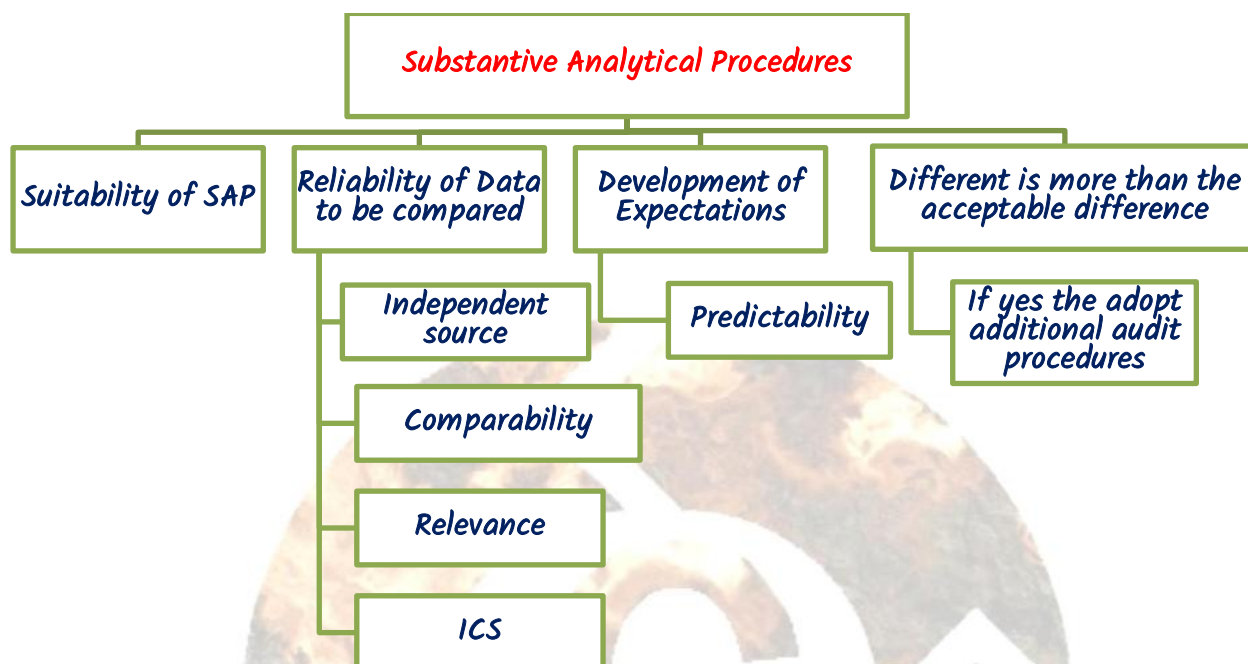
AT PLANNING STAGE

- To decide NET
- N = Nature = which Audit Procedure has to be adopted.
- E = Extent = Up to what extent we has to verify (Ex:- 20% or 80% or 100% etc.)
- T = Timing = When we have to verify that item

SUBSTANTIVE ANALYTICAL PROCEDURES

- SAP means Analytical Procedures used as Substantive Procedures (i.e. Test of Details)

- Example :- While verifying Cash Sales of entity comparing of receipt of Cash in Cash Book and Deposit amount in Bank Statement



Analytical Procedures at conclusion stage

To conclude whether FS = His understanding of entity

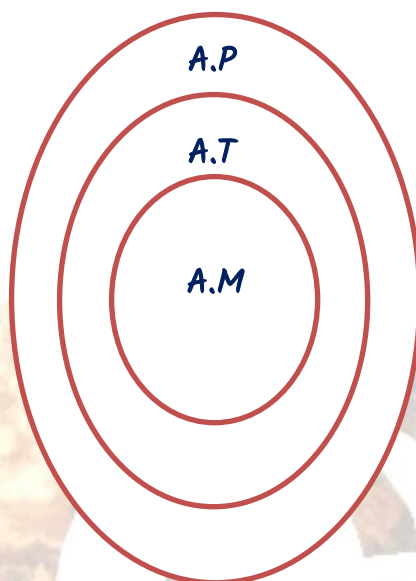
Helps to forming an opinion

TARGET
Academy

		ANALYTIC PROC	OAP
ICS	Strong	✓	✗
	Weak	✓	✓
Material	Yes	✓	✓
	No	✓	✗
Prediction	Accurate	✓	✗
	Not Accurate	✓	✓
Risky	Yes	✓	✓
	No	✓	✗
Time & Cost	No restriction	✓	✓
	Restriction	✓	✗

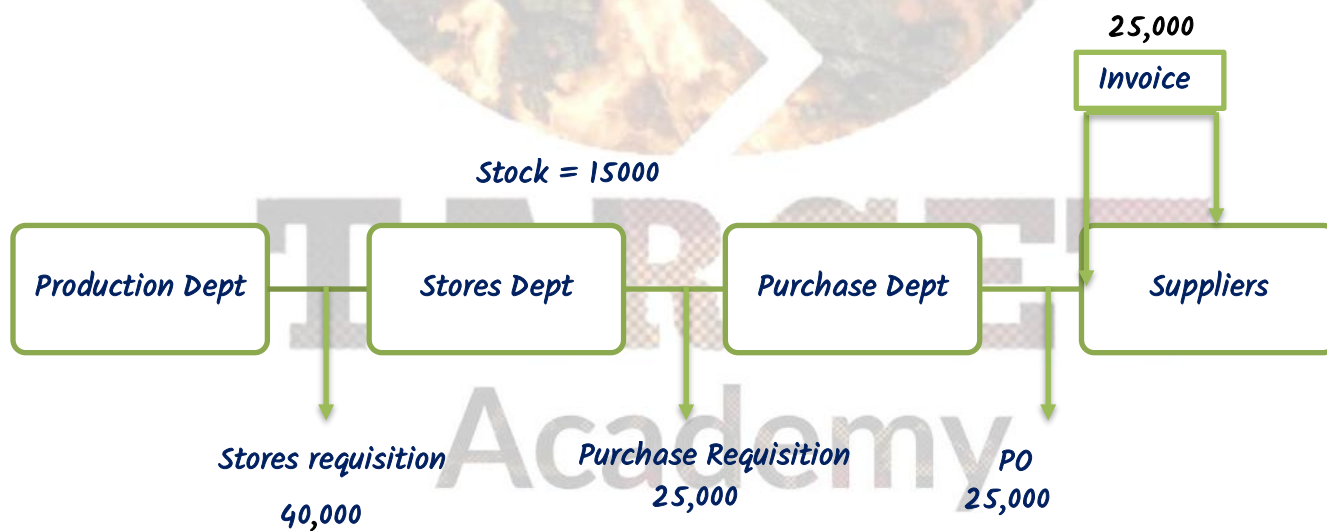
TARGET
Academy

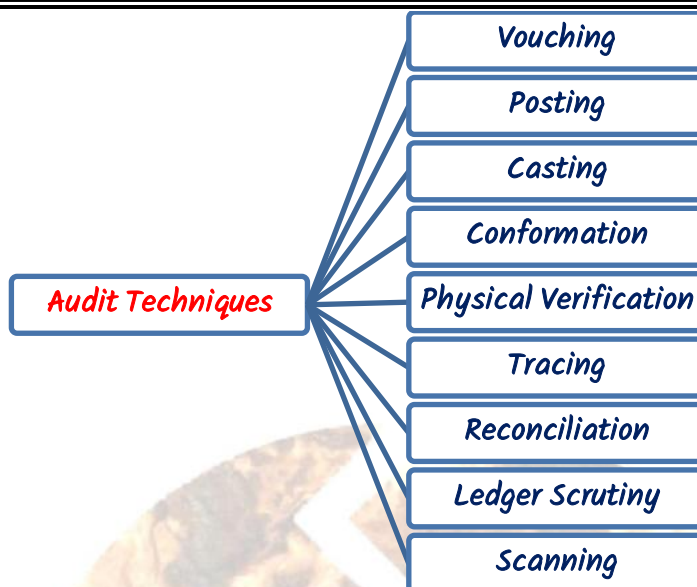
AUDIT TECHNIQUES



VOUCHING

- Verification of Accounting entry with voucher
- Voucher: means the internally generated document which contains all details of transaction





<i>Audit Principles</i>	<i>Audit Techniques</i>
<i>They are fundamental rules followed by the Auditor while doing the Audit</i>	<i>They are Tools adopted by the Auditor while doing the Audit</i>
<i>Audit Principle are the Basic principles Governing an Audit as per SA- 200</i>	<i>Audit Techniques are the part of Audit Procedures</i>
<i>Common: Audit Principles are constant for Audit to Audit common for every Auditor</i>	<i>Varies:- audit Techniques changes from Auditor to Auditor and Organisation to organisation</i>

<i>Audit procedures</i>	<i>Audit techniques</i>
<i>Broad frame of manner of handling of Audit work, procedures includes techniques</i>	<i>Techniques refers to methods employed to carry out the procedures</i>
<i>Compliance, Substantive procedures</i>	<i>Combination of techniques applied in a particular procedure</i>

TARGET
Academy

CONCEPT-16

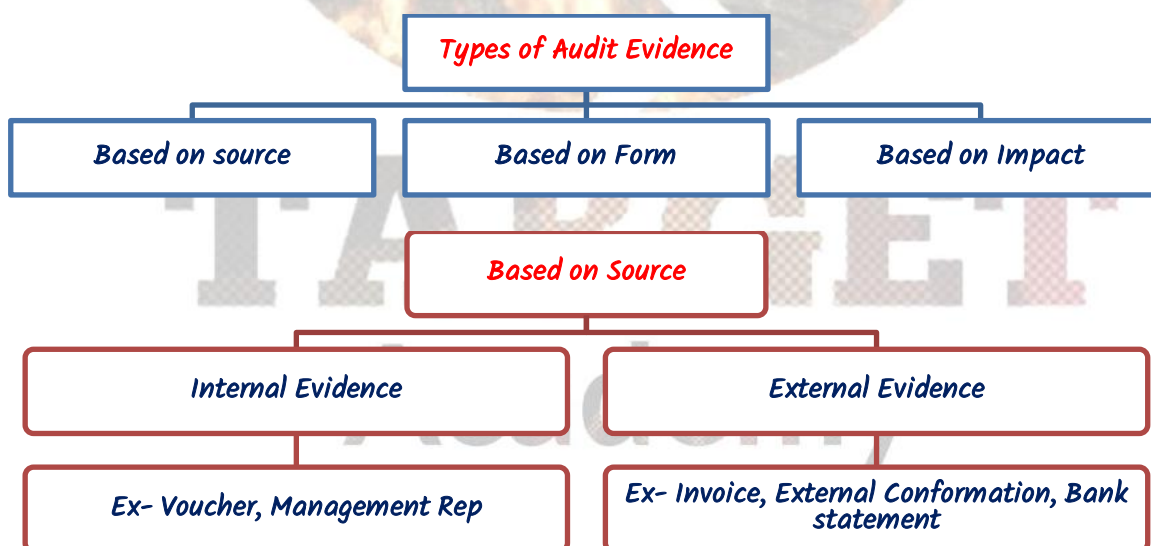
AUDIT EVIDENCE



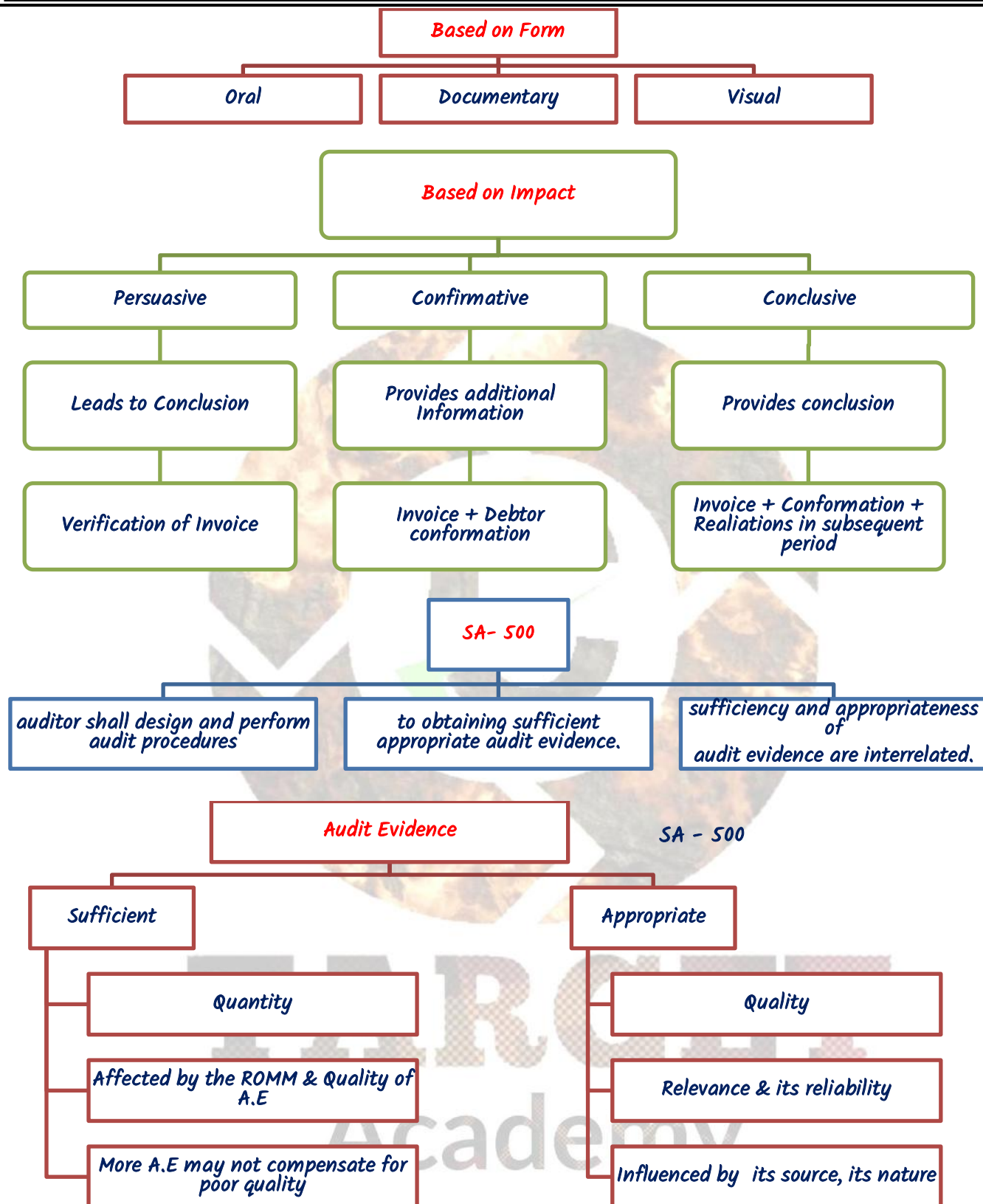
Audit Evidence is the information received by the Auditor either from client and others.

It is the basis for conclusions.

As per SA-200 it is one of the Basic principle Governing an Audit



More reliable



SA - 330

Whether sufficient appropriate audit evidence has been obtained to reduce audit risk to an acceptably low level

thereby enable the auditor to draw reasonable conclusions on which to base the auditor's opinion

It is a matter of professional judgment.

AS per SA- 200

Auditor should obtain S&A A.E

It is the PJ of Auditor

RIN SURF

Factors effecting Auditors PJ as to S&A A.E

ROMM

ICS

Nature & Size of entity

Unusual influence on Mng

FP of entity

Materiality

Past experience

Results of Audit procedures

Type of info available

Trend indicated by accounting ratios and analysis

SA 500 Audit Evidence

Appropriateness--Reliability

It influenced by its source, its nature & circumstances like ICS

RELIABLE STANDARDS

- External Evidence is more reliable than Internal Evidence
- Internal Evidence is more reliable when ICS is strong
- Documentary evidence V/s Oral Evidence
- Original V/s Photo copies
- Self generated V/s Taken from others
- Consistent V/s Inconsistent

Reliability depends on

- Certified to be true copies by IT dept
- Certificate from the mng

Confirmation from TP

- Balances

Inspection

- Tangible assets

If he is unable to obtain S&A A.E

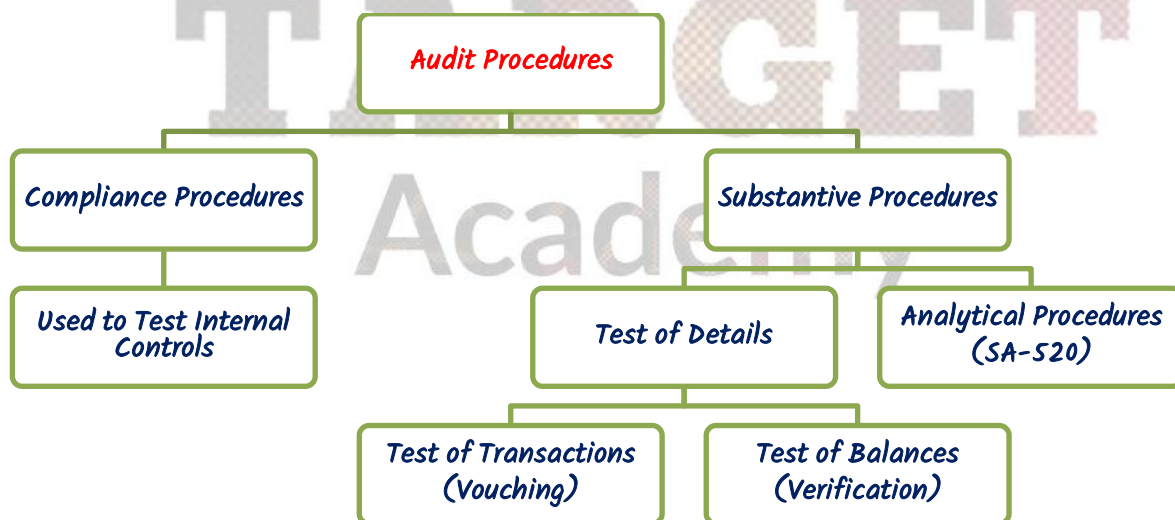
- Modify his report & bring this fact to the notice of SH

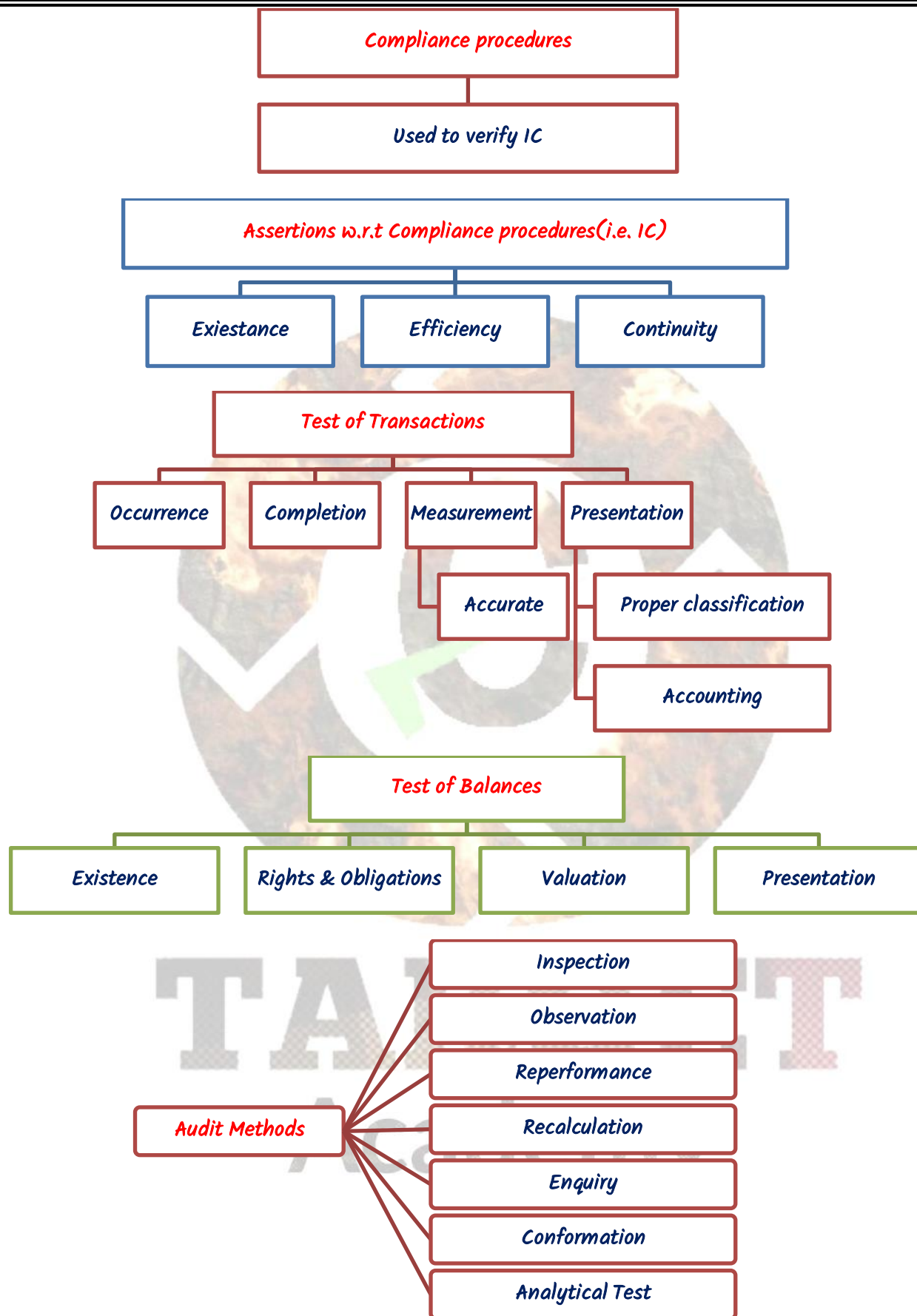
If he fails to establish reliability

- Disclaimer of opinion

ASSERTIONS

- Assertions are the strong statements made by the management w.r.t to amounts in F.S





Inspection

- Documents
- Tangible assets—provide S&A A.E w.r.t existence

Observation

- looking at a process or procedure being performed by others

Reperformance

- auditor's independent execution of procedures or controls that were originally performed as part of the entity's internal control.

Recalculation

- checking the mathematical accuracy of documents or records.

Inquiry

- Inquiry consists of seeking information of knowledgeable persons

External Confirmation

- An external confirmation represents audit evidence obtained by the auditor as a direct written response to the auditor from a third party

Analytical procedures

- evaluations of financial information
- Analysis of ratios and trends.
- Investigation of identified fluctuations.

Inspection

Documents

Tangible Assets

Internally generated & given to External Party

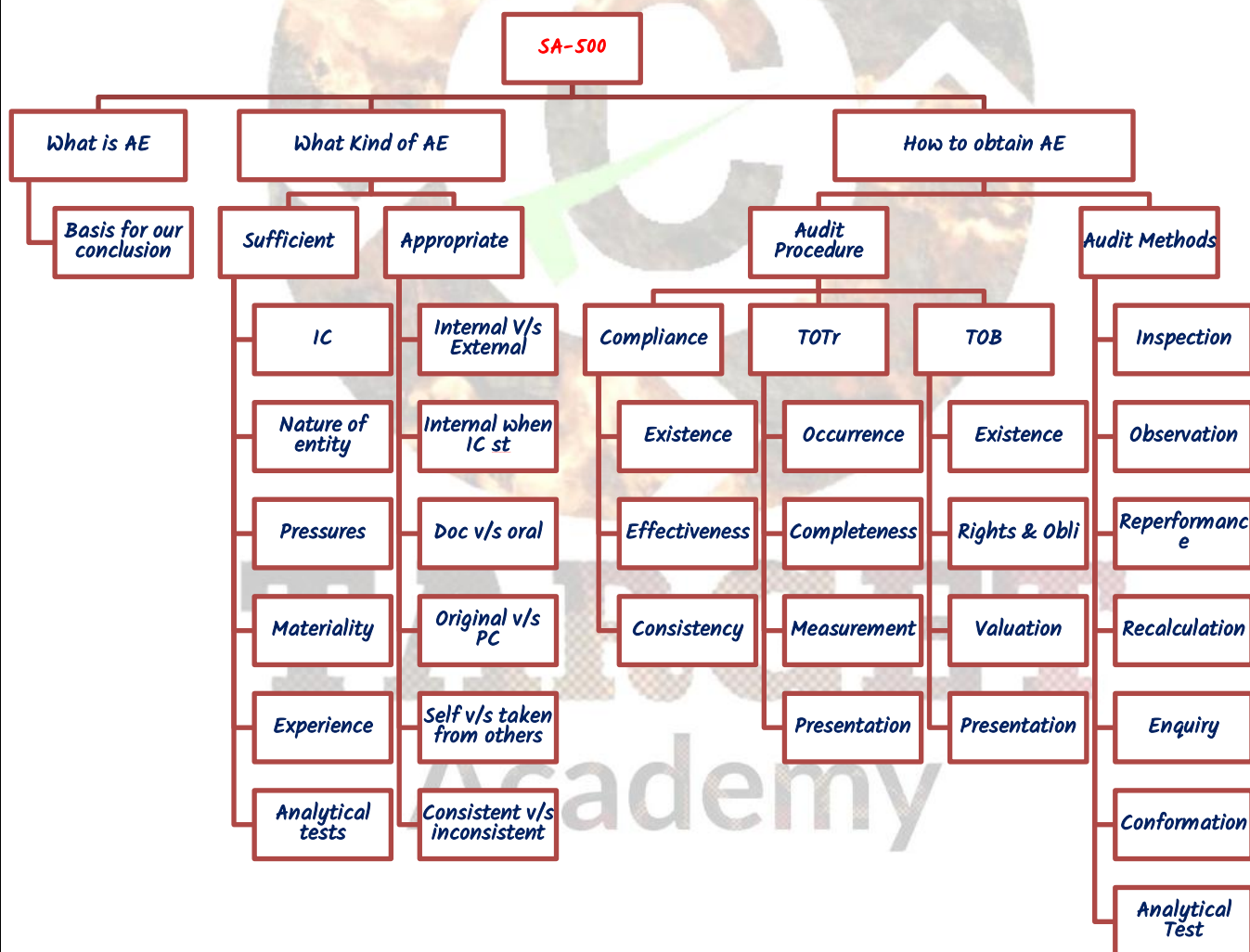
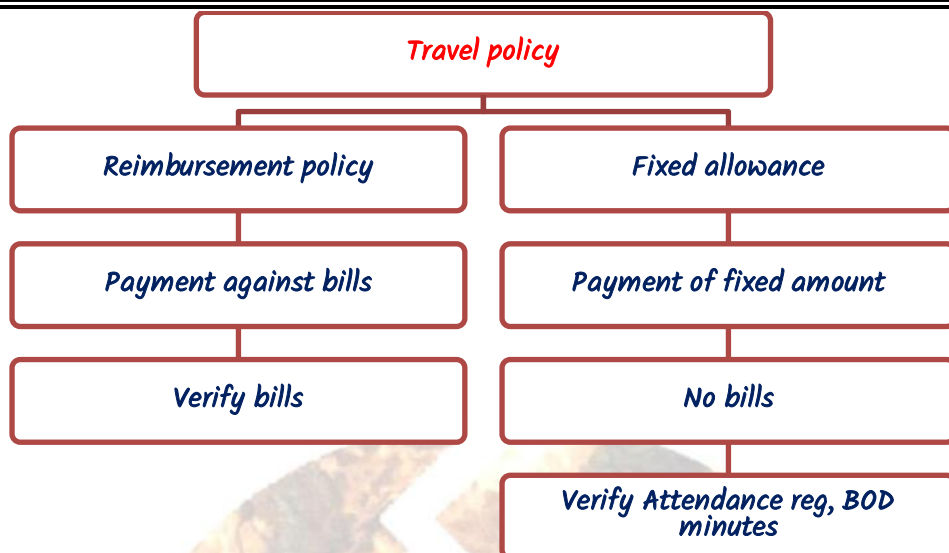
Ex :- Sale Invoice

Internally generated & used for internal purpose

Ex :- Stock Requisition

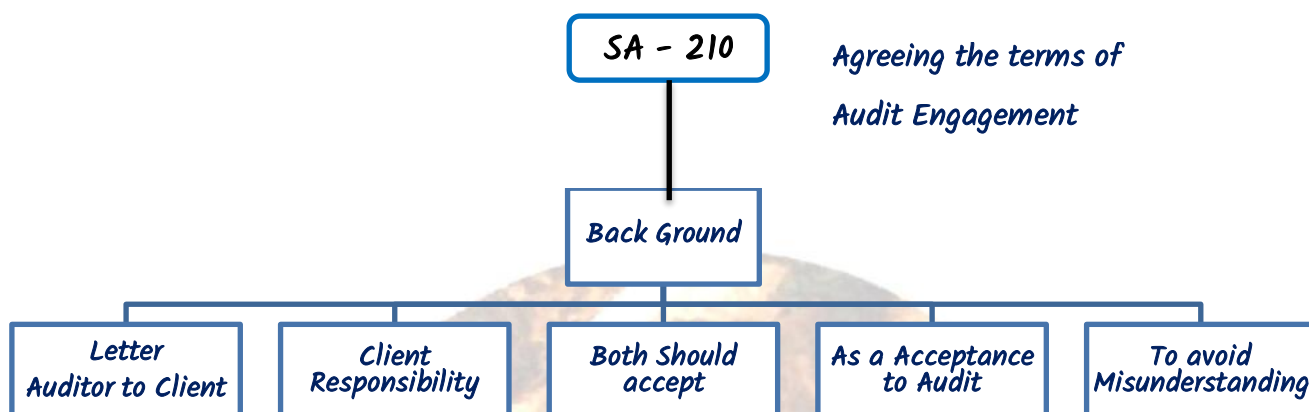
Externally generated & used for internal purpose

Ex :- Purchase Invoice



CONCEPT-17

LETTER OF ENGAGEMENT

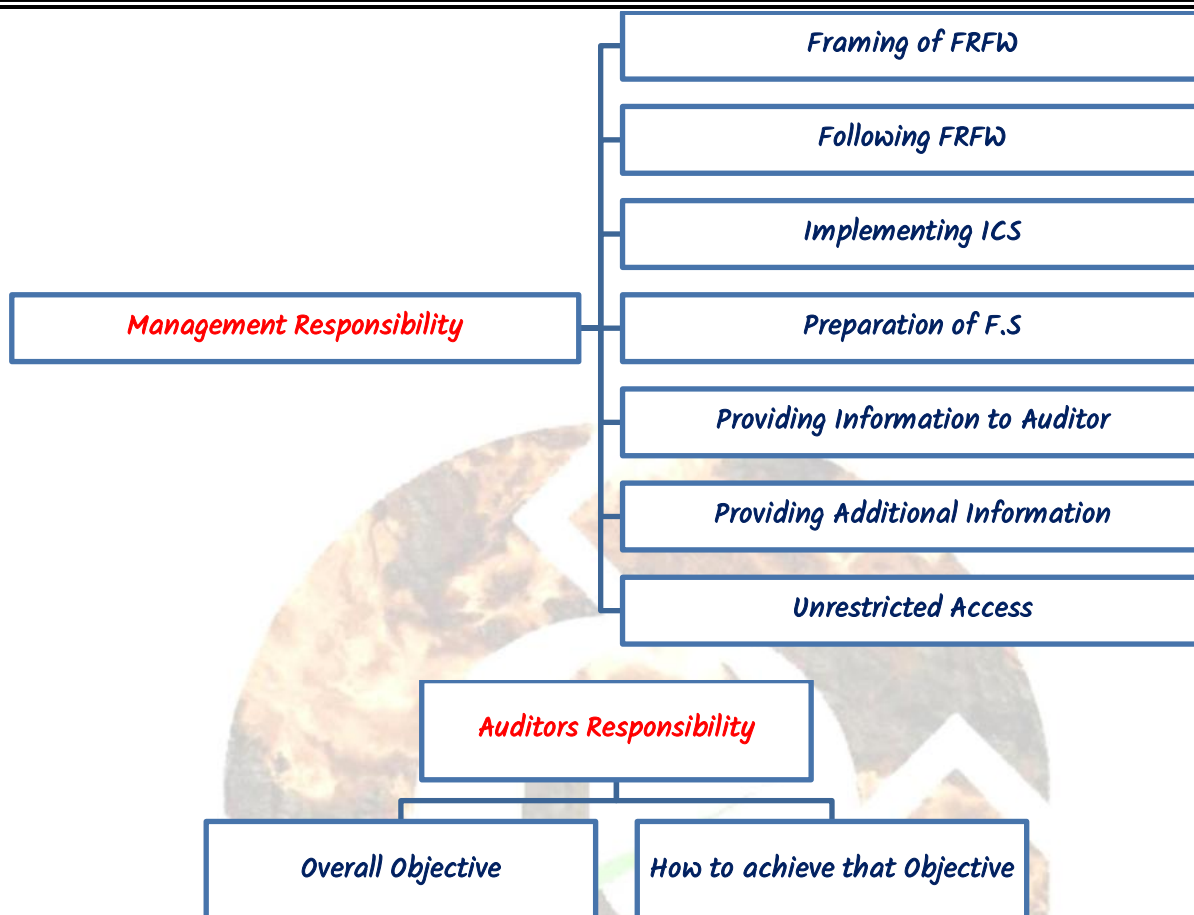


PURPOSE OF LOE

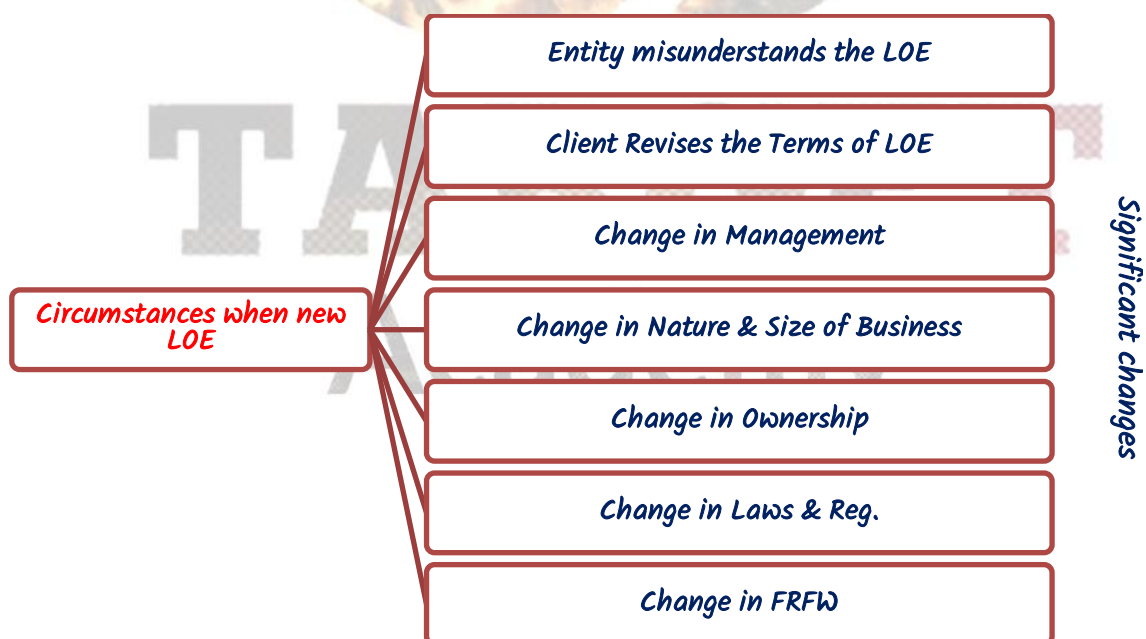
	Statutory Audit	Non statutory Audit
Scope	Decided by Statute	Decided by Management

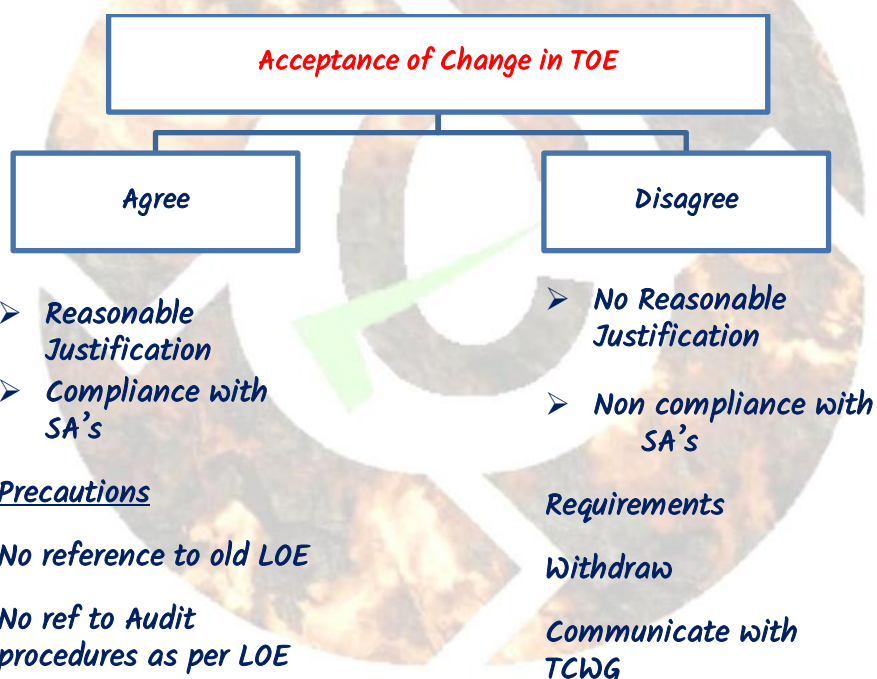
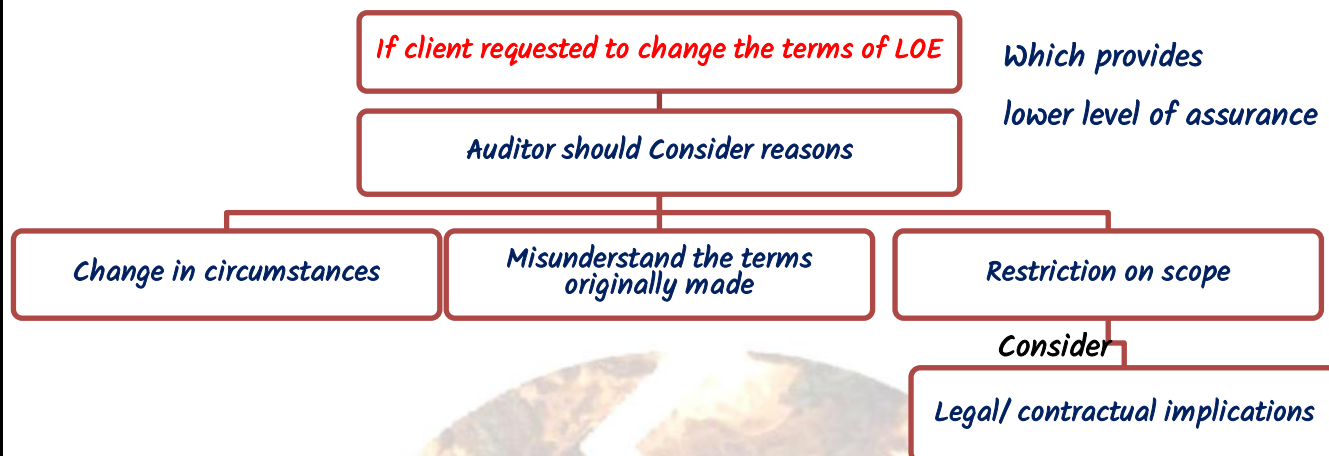
As per SA-210, Agreeing the Terms of Audit Engagements, every engagement letter as per should contain the following:

- Objective & scope of engagement
- Management responsibility
- Existence of inherent limitations
- Need for use of Internal Auditor
- Management confirmation letter
- Restrictions & limitations of Auditor liabilities
- Basis of computation of Audit fees
- Billing arrangement
- Form of report & Other communications of engagement
- Validity of report
- Limits on submission of report to other authorities

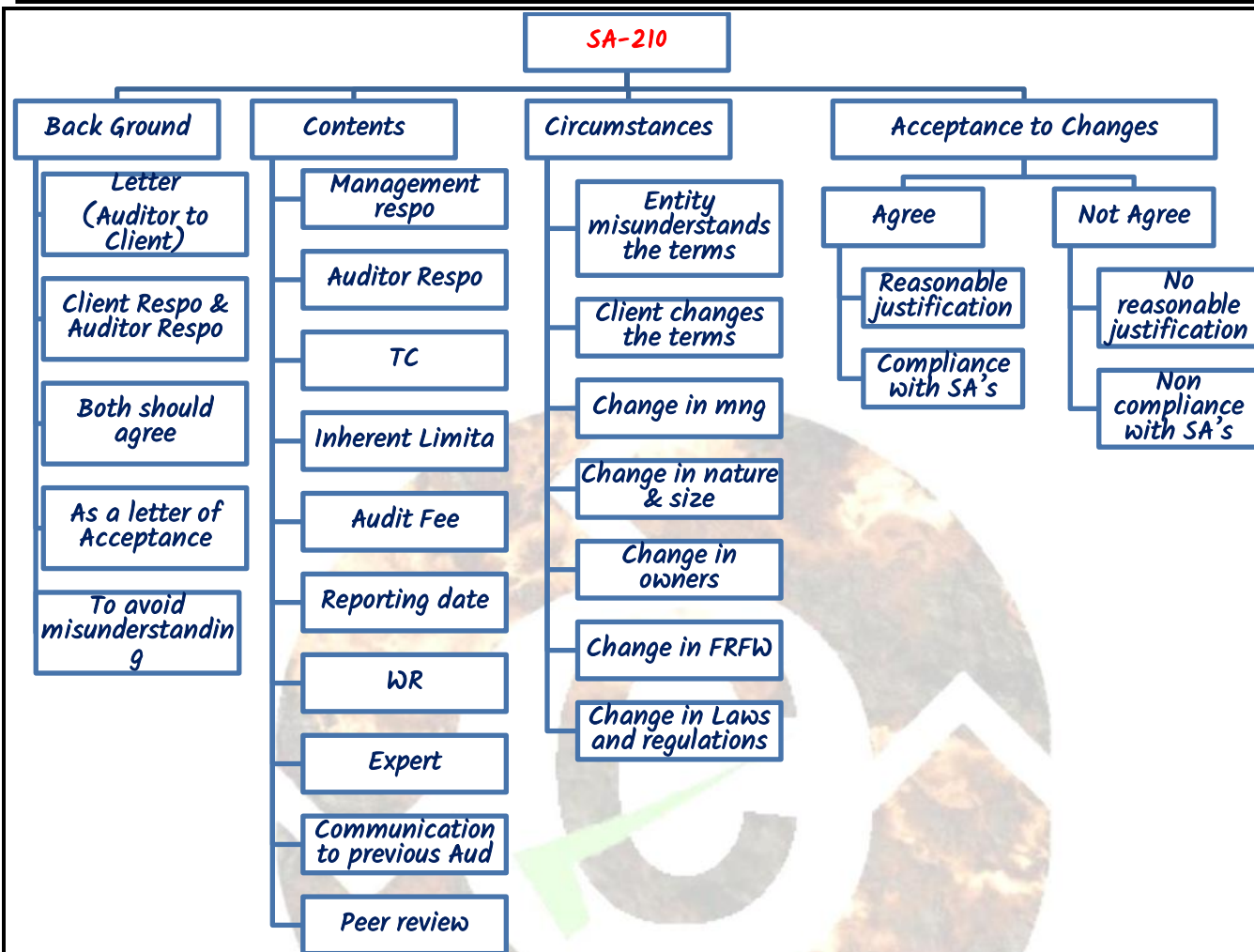


- If auditor is continuing for next coming years also then whether the new LOE is required for every year or not ?
 - Generally not required in case of Recurring Audits in normal circumstances
 - But in the following circumstances New LOE is required





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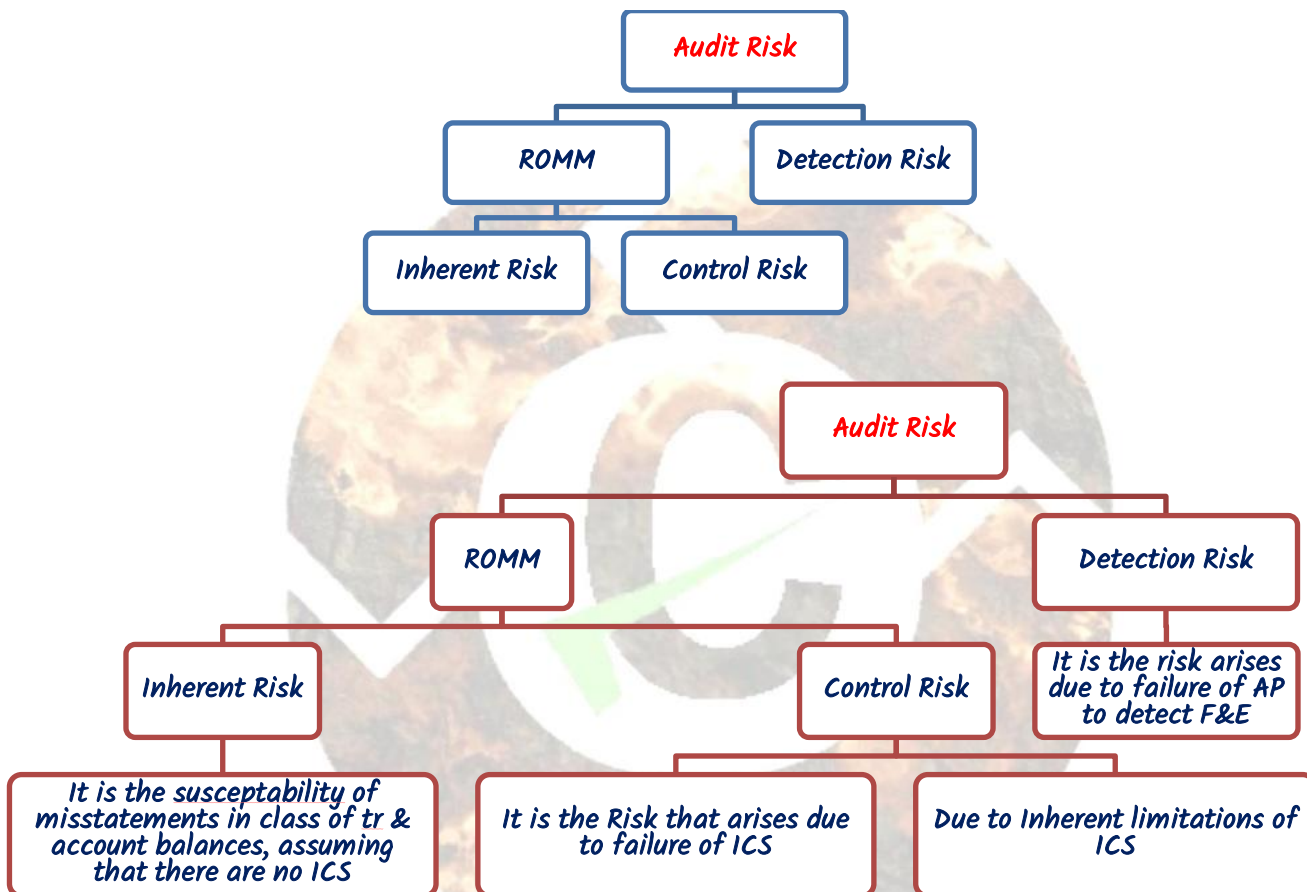


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CONCEPT-18

AUDIT RISK

- Audit Risk is the risk that Auditor may express an inappropriate opinion when F.S are Materially Misstated



INHERENT RISK

- It is the susceptibility of misstatement in account balances & class of transitions (i.e. F.S) assuming that there were no Internal controls.

CONTROL RISK

- It is the Risk that arises due to failure of Internal control System.
- ICS may fail due to inherent limitations of ICS

DETECTION RISK

- It is the risk that arises due to failure of Audit Procedures

AUDITORS ABILITY TO REDUCE RISK

- ROMM is also known as Management risk because that exist in F.S before starting of Audit.
- Auditor can not reduce such risk, he can only detect that risk.

- Where as in case of Detection risk Auditor can reduce that Risk by using additional Audit Procedures.
- Auditor can not eliminate Audit Risk to Zero level. He can only reduce it to acceptable level.



INDIVIDUAL AREA LEVEL

- Abnormal areas
- Complex areas.
- Accounting estimates.

FS LEVEL

- No integrity of owners.
- Unusual pressures on entity.
- Nature of entity business.
- Competition on entity.
- There exist an inverse relationship b/w ROMM & detection risk.

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CONCEPT-19

FINAL AUDIT & CONTINUOUS AUDIT

FINAL AUDIT:

- Begins after the end of the year and continuous till the audit is completed.
- All the Audit is done at one time

CONTINUOUS AUDIT:

- Audit is conducted continuously like monthly quarterly etc.
- Auditor visits client place at regular intervals i.e. during the F.Y (not only at the end of the year)
- It is also known as Detailed Audit
- A continuous audit is one in which the auditor's staff is engaged continuously in checking the accounts of the client, during the whole year round or when for the purpose, the staff attends at quite frequent intervals say weekly basis during the financial period.

Earlier detection of F&E

- It possible for the management to exercise a stricter control over the accounts

Moral check

- The frequent attendance by the staff deters persons so inclined, from committing a fraud.

Up to date BOA

- The accounting staff of the client is motivated to keep the books of account up-to date.

Discharge his duties more efficiently.

- constant association of the auditor with the accounts and the affairs of the client
- more detailed knowledge of the client's affairs

DISADVANTAGES

some of the transactions may escape audit scrutiny

- Due to the audit being carried out in several installments, the audit staff may fail to keep track of things

Tampered

- The books of account, after these have been checked, may be tampered by the client's staff.

Uneconomical for small entities

The audit may be uneconomic if the size of the concern is small since a great deal of time and effort would be wasted each time in preparing for the audit and in attending to the requirements of the audit party

Particulars	Continuous Audit	Final Audit
No. of Transactions	Adv	Disadv
Cost	Disadv	Adv
Comfortness of client	Disadv	Adv
Informal Relationship	Disadv	Adv
Frauds and Errors	Adv	Disadv
Moral Check	Adv	Disadv
Thorough Audit	Disadv	Adv
Continuity of Work	Disadv	Adv
Alteration	Disadv	Adv

Disadvantage	Precaution
No continuity of work	Complete up to definite stage to avoid loose ends
Alteration	At the end of each visit imp balances should be noted down & compare at the time of next visit.
Through Audit	Nominal accounts should be checked only at the time of final closing
Informal relationships	Visit should be at irregular intervals
Alteration	Instructions not to alter, special form of ticks

Audit plan	Broad frame work for conducting the work
Examination of ICS	Efficacy of ICS
NET of Audit procedures	Based on ICS
Extent of test checking	Based on ICS
Arithmetical accuracy	Of BOA - casting
Examination of transactions	Vouching- documentary evidence
Examination of Assets & Liabilities	Verification - existence, ownership, value
Compliance of legal requirements	Scrutiny of the accounts
Overall check	Results of overall check consistent with findings already made
Ratio analysis(analytical procedures)	To locate the areas showing departure from expected state of affairs

MATTERS TO BE CONSIDERED WHILE DEVELOPING OVERALL AUDIT PLAN

- Terms of engagement (LOE)
- Nature & timing of reports or other communication.
- Legal & statutory requirements.
- Accounting policies adopted by client.

- *Effect of new accounting & auditing pronouncements.*
- *Significant audit areas.*
- *Materiality levels.*
- *Conditions increase risk of fraud.*
- *Related party transactions.*
- *ICS.*
- *Nature & extent of Audit evidence.*
- *Using the work of others like internal auditor, branch auditor, expert.*
- *Allocation of work between joint auditors.*
- *Audit staff requirements.*



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CONCEPT-20

AUDIT PROGRAMME

Meaning

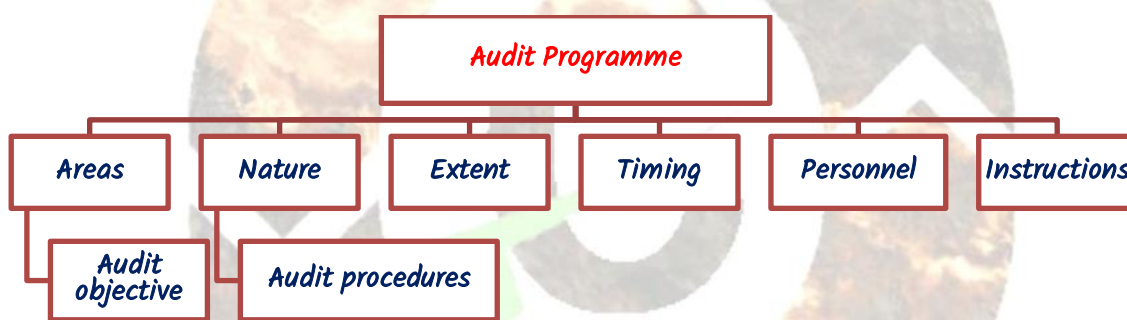
· It is a detailed plan of applying the audit procedure in the given circumstances with instructions for the appropriate techniques to be adopted for accomplishing the audit objectives

Framing based on

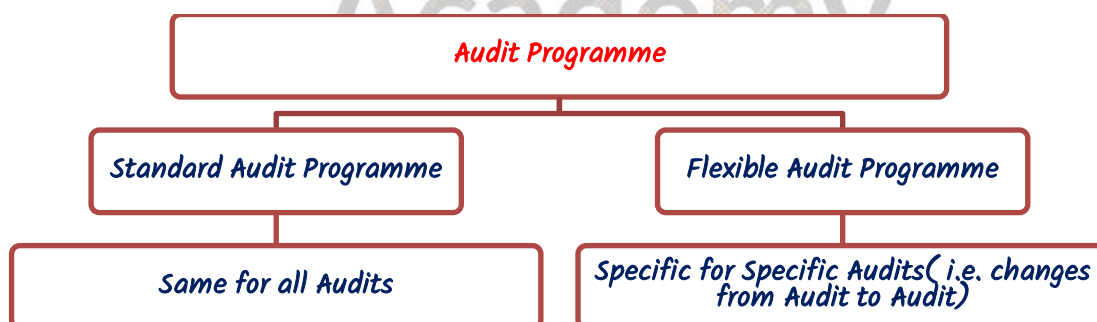
· Nature, Size, Composition of business
· ICS, scope of work

Purpose

· set of instructions to the audit team
· proper execution of the work
· Coverage of all areas



AREA	NATURE	EXTENT	TIMING	PERSONAL	INSTRUCTIONS
PURCHASE	VOUCHING	50%	08/04	A	RP Purchases Compare with
SALARIES	VOUCHING	80%	08/04	B	Attendance Leave Adj
FIXED ASSETS	PHYSICAL VER	80%	11/04	B	Attendance Leave Adj



Advantages of Audit Programme

Individual Responsibility

Division of Work

Supervision

Guidance

Time Saving

Continuity of Work

Evidence in the Court of Law

Effective utilization of staff

Used to create next year Audit Programme

Limitations

Mechanical for
Article
Assistants

Incomplete

Changes in
Business

Not Suitable

Easy way out

PRECAUTIONS

Consultation
during planning

Review IC

Inquire
Management

Flexible Audit
Programme

Article
Assistants
Meeting

AUDIT PROGRAMME HELP TO PLAN & PERFORM THE AUDIT

List down the areas

· The audit programme lists down areas of audit before commencement.

schedule of audit plan

· The audit timing is built therein; thereby it becomes a schedule of audit plan.

Selecting Team members

· The staff who are entrusted with the audit assignment is also specified. It is a plan of resource allocation of the firm.

Specifies the procedures

- It specifies the procedures to be checked during the audit.

Check list

- As the audit work is split into various elements of procedures to be performed, the audit programme acts as a guiding chart or check list during the performance of audit.

extracts the responsibility

- Since the staff in charge of each work is specified and they sign the programme, it extracts the responsibility from the audit assistants.

Evaluation of the performance

- working papers of the audit staff can be reviewed against the audit programme
- base of reference for evaluation of the performance before reporting
- on the financial statements.

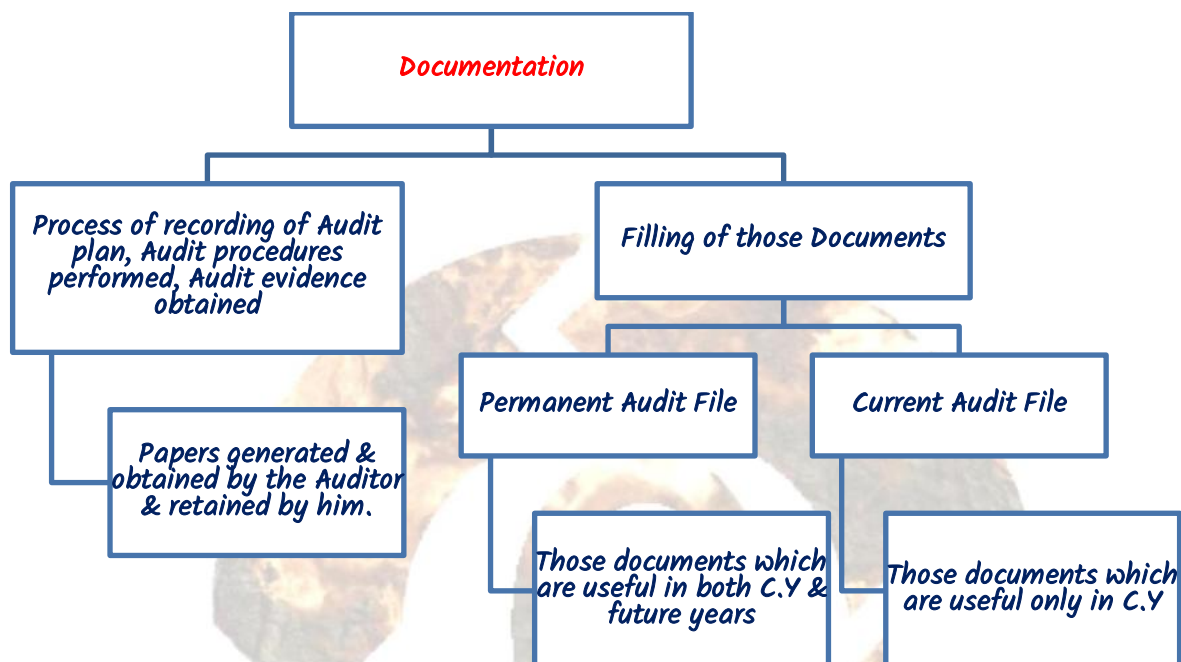
Diary of the performance and plan

- base for billing the clients

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CONCEPT-21

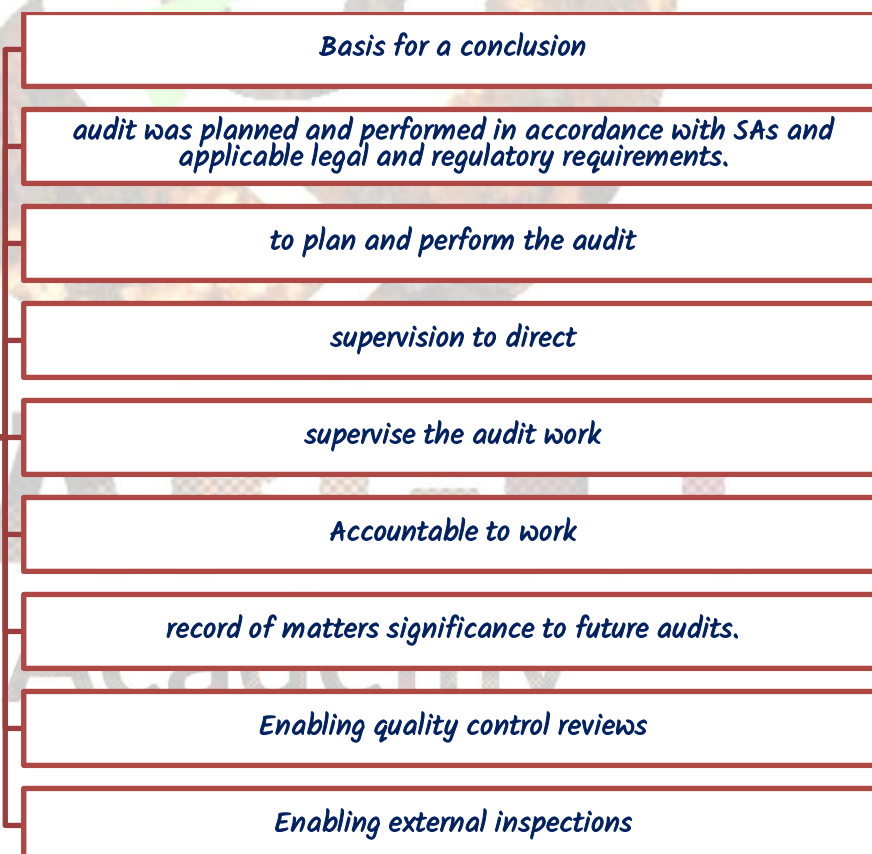
DOCUMENTATION OR WORKING PAPERS



SFI RACE P

Assisting

Purpose of Working papers



Access to Working Papers

Client

Third Party

Regulatory
Authorities

ACCESS TO CLIENT

- As per SA-230 Audit Workings are the property of the Auditor
- Auditor at his own discretion may provide copies or extracts there off

ACCESS TO THIRD PARTY

- While providing access to third party, Auditor should observe the principle of confidentiality

ACCESS TO REGULATORY AUTHORITIES

- While providing access to Regulatory authorities, Auditor should also observe whether there is any legal obligation on him to provide such working papers

HOW MANY YEARS WE HAVE TO MAINTAIN WORKING PAPERS

- 7 Years from the date of Audit Report.

TIME LIMIT FOR MAKING PAF & CAF

- 60 Days from the date of signing of Audit Report

What does SA 230 says about utility, ownership, custody and retention of working papers?

Utility of Working Papers

- planning and performance
- supervision and review
- evidence of the audit work performed
- support the auditor's opinion.

Ownership of Working Papers

- property of the auditor
- At his discretion, make portions of or extracts to client

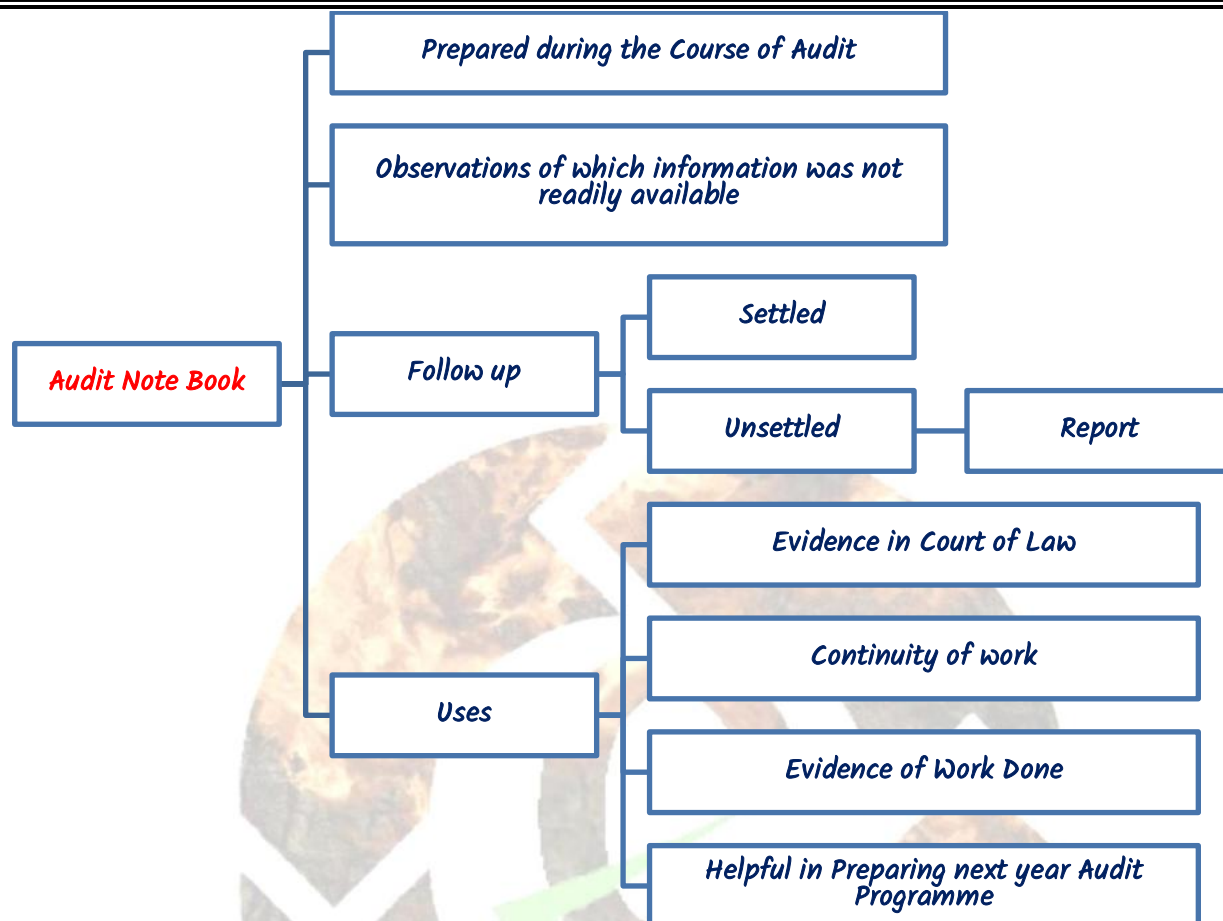
Custody of Working Papers

- safe custody and confidentiality

Retention of Working Papers

- Not shorter than 7 years (SQC I)

Write short notes on the following Audit Note-book



Contents of Audit Note Book

- a. Name of the business enterprise.
- b. Organisation structure.
- c. Important provisions of Memorandum of Association (MOA) and Articles of Association (AOA).
- d. Communication with the previous auditor, if any.
- e. Management representations and instructions.
- f. List of books of accounts maintained by the enterprise.
- g. Accounting methods, internal control systems followed by the enterprise, applicable laws etc.
- h. Key managerial personnel.
- i. Errors and fraud discovered.
- j. Matters requiring explanations or clarifications.
- k. Special points that need attention in the audit report.

Audit Completion Memorandum

Prepared after the Completion of Audit

All Major Observation s

Summary of Audit Documentation

Used to demonstrate work done by him

ACM V/S ANB

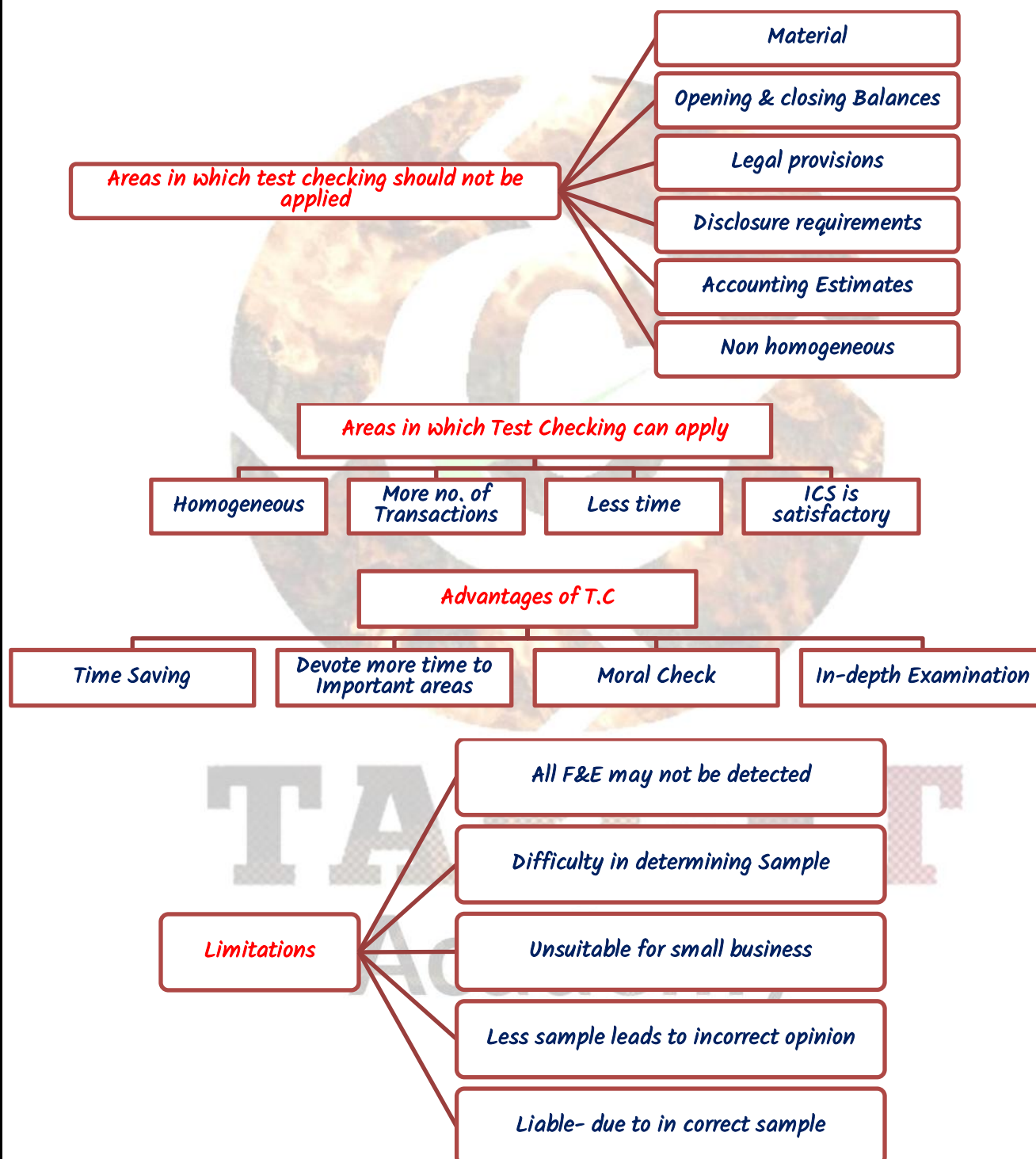
<i>Audit Completion Memorandum</i>	<i>Audit Note Book</i>
<i>After the Audit</i>	<i>During the Audit</i>
<i>Major observations</i>	<i>Only observations which information was readily not available</i>
<i>Summary of audit Documentation</i>	<i>This is not the summary of Audit Documentation. It is the part of Documentation</i>
<i>Used to Demonstrate work done by him</i>	<i>Used to prepare next year Audit Programme</i>

TARGET
Academy

CONCEPT-22

AUDIT SAMPLING-SA-530

- Sampling is also known as Test checking
- Sampling means applying Audit procedures for less than 100% of transactions



What precautions should be taken by an auditor while applying test check techniques?

Representative nature

- The transactions of the concern should be classified under appropriate heads and may be stratified in case of wide variations between the transactions of the same kind.

In-depth examination

- Authorisations, documentations, recording of the transactions should be studied right from the beginning to end.

ICS

- Evaluating the system of internal control for its efficiency, soundness and capability to produce reliable accounting and financial data.

Clear test check plan

- Preparation of test check plan with clear audit objective understood by the audit staff.

statistical methods

- Un-biased selection of the transactions with reference to the random number tables or other statistical methods.

No test checking

- Identification of the areas where test check may not be done.

No. of transactions should be predetermined

- Based on degree of reliance and the confidence level required in the audit, the number of transactions to be selected for each test plan should be pre-determined.

Further investigation

- Setting up criteria to judge what constitute material or immaterial errors. Further investigation of only material errors be carried out and all immaterial errors may be avoided.

Factors consider while determining sample size

Nature of transactions

ICS

Risk

Materiality

Past experience

SA-530

Step-1:- The Auditor should check effectiveness of ICS, time availability, Nature of transactions & Materiality in order to decide upon whether to go for sampling or not.

Step-2:- Decide the risk to be taken by the Auditor and based upon the Risk decide the sample size.

Step-3:- Pick the Sample by using sampling techniques.

Step-4:- Apply Audit Procedures to the selected Sample then we get results for that sample.

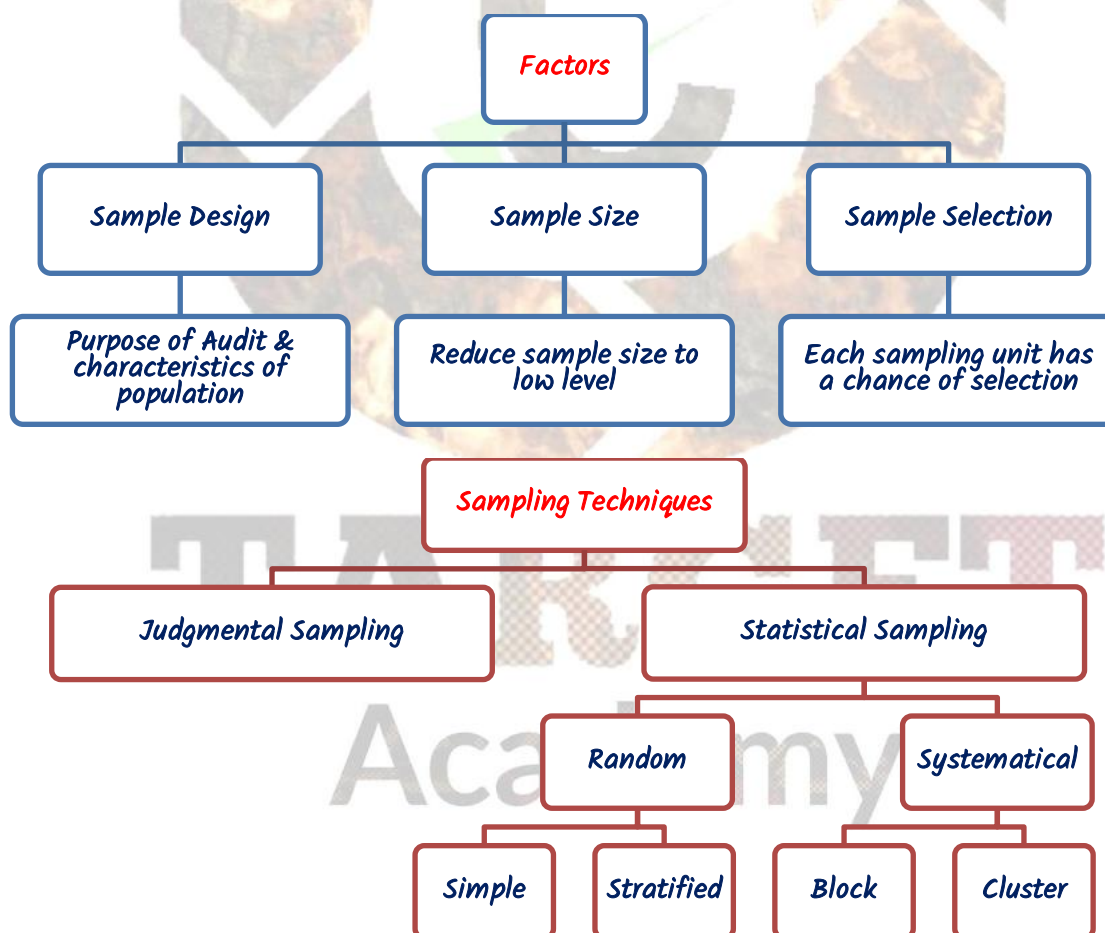
Step-5:- Decide the Overall Materiality level.

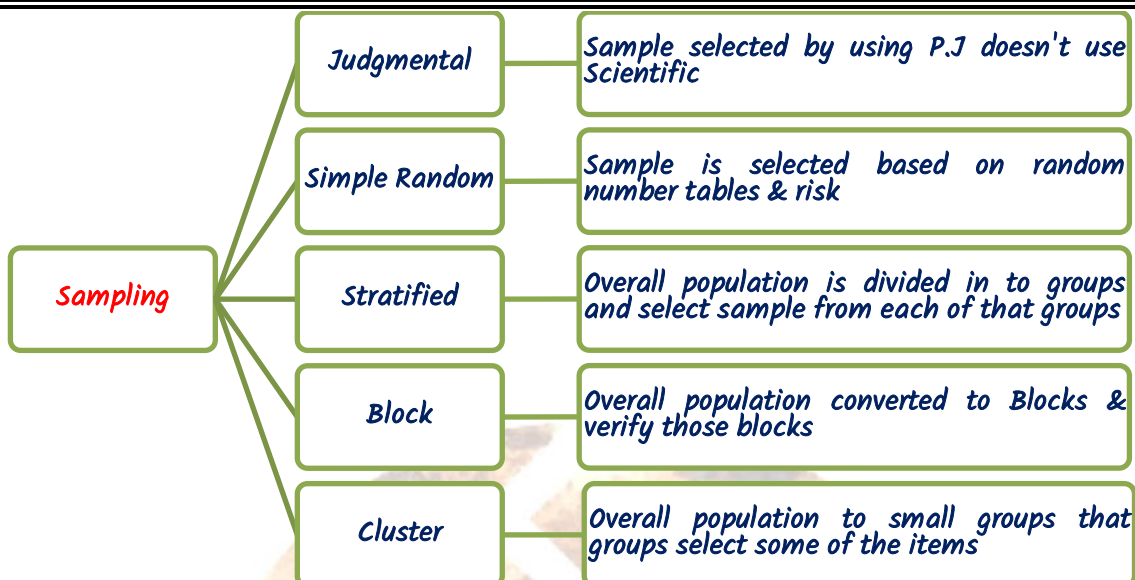
Step-6:- Adopt the results of Sample to Overall Population.

Step-7:- Compare the Overall population Results with Overall Materiality Level.

Step-8:- If overall population results are more than Overall Materiality level then the Auditor has to Reassess his Risk(i.e. increase the Sample Size).

Step-9:- continue the Process till the stage where Overall population results are less than Overall Materiality Level.





Random Selection

- Using random number tables
- Divides population in to groups called strata
- Selects population from those groups.

Systematic Selection

- population is divided by the sample size to give a sampling interval
- Using random number tables.
- sampling interval should not corresponds with a particular pattern in the population.

Monetary Unit Sampling

- value-weighted selection
- sample size, selection and evaluation results in a conclusion in monetary amounts.

Haphazard Selection

- no structured technique

Block Selection

- selection of a block(s) of contiguous items from within the population
- auditor intends to draw valid inferences about the entire population based on the sample.

Stratified Sampling

Dividing the whole population in to groups called strata

Taking a sample from each of group

highly diversified population

Simple random sampling

· Sample is selected by using random number tables

Stratified sampling

· Entire population is divided in to groups known as strata. Sample is selected from each group.

*Advantages of
Statistical Sampling*

Sample Size does not increase in proportionate to the increase in population

More objective in nature

Gives minimum sample size with a specified Risk and precision

Provides better description of Large mass of Data

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THE END

CONCEPT 23: AUDITING IN AN AUTOMATED ENVIRONMENT

- In many organisations, the processes, operations, accounting and even decisions are carried out by using computer systems – also known as Information Systems (IS) or Information Technology (IT) systems which makes the environment automated.
- In an automated environment, auditing also undergoes through significant changes as traditional auditing techniques may not be applicable in the same way.

Areas of Use of Computer in Auditing The following are certain areas where the use of computer in auditing may be useful: ‘

- a) Preparation of detailed audit programming.
- b) Preparation of audit planning, scheduling and assignment of available manpower to different assignments in hand.
- c) Checking of validity, consistency and reasonableness of entries.
- d) Reviewing the internal control of the system.
- e) Retrieving requires key information from the files for making comparison with the set of standard information.
- f) Doing arithmetical computations and checking the arithmetical computations.
- g) Doing analytical review of the data by way of comparison, ratio analysis, trend analysis, tests of reasonableness and so on.
- h) Selecting representatives for vouching, verification-debtors accounts may be planned to be listed if they comply with certain predetermined criteria.
- i) Preparation of flow- charts.
- j) Preparation of audit reports, documenting working papers and writing other communication, etc.

Controls in an Automated Environment:

(a) Application controls

Application controls are those controls (manual and computerised) that relate to the transaction and standing data pertaining to a computer-based accounting system. Application controls need to be ascertained, recorded and evaluated by the auditor as part of the process of determining the risk of material misstatement in the audit client's financial statements.

(b) Input controls

Control activities designed to ensure that input is authorised, complete, accurate and timely are referred to as input controls. The auditor needs to apply specific input validation checks to evaluate the same.

- i) *Range checks:* These ensure that information input is reasonable in line with expectations.
- ii) *Compatibility checks:* These ensure that data input from two or more fields is compatible. For example, a sales invoice value should be compatible with the amount of sales tax charged on the invoice.
- iii) *Validity checks:* These ensure that the data input is valid.
- iv) *Exception checks:* These ensure that an exception report is produced highlighting unusual situations that have arisen following the input of a specific item.
- v) *Sequence checks:* These facilitate completeness of processing by ensuring that documents processed out of sequence are rejected.
- vi) *Control totals:* These also facilitate completeness of processing by ensuring that pre-input, manually prepared control totals are compared to control totals input.
- vii) *Check digit verification:* This process uses algorithms to ensure that data input is accurate

(c) Processing controls

Processing controls exist to ensure that all data input is processed correctly and that data files are appropriately updated accurately in a timely manner. The processing controls for a specified application program should be designed and then tested prior to 'live' running with real data.

(d) Output controls

- Output controls exist to ensure that all data is processed and that output is distributed only to prescribed authorised users. While the degree of output controls will vary from one organisation to another common controls comprise use of batch control totals, exception reports etc.
- The auditor must ensure that output is kept confidential and available to authorized users only.

(e) Master file controls

- The purpose of master file controls is to ensure the ongoing integrity of the standing data contained in the master files. It is vitally important that stringent 'security' controls should be exercised over all master files.
- The auditor must ensure that master file controls are effective and adequate.

Auditor's Role & Testing Methods in an Automated Environment:

- Auditing in an automated environment requires an auditor to evaluate the same before applying the audit procedures.
- An auditor applies four types of tests to identify the reliability of controls and associated risks. These are inquiry, observation, inspection and reperformance.
- Some of the common testing in an automated environment include the following:

- a. Obtain an understanding of the processing of an automated transaction by doing a walkthrough of one end-to-end transaction using a combination of inquiry, observation and inspection.*
- b. Observe how a transaction is recorded by a user in different scenarios.*
- c. Inspect the configuration of an application control.*



CONCEPT 24: AUDIT TRAIL

- Audit trail may be defined as the documents, records relating to transactions that enables an auditor to trace the transactions from the source documents to the summarised total in accounting reports.
- It is an orderly, step-by-step record of transactions that serves as a proof of a transaction's history, right from recording to tracking all changes that may take place.
- In an automated environment accounting software provides the ideal example of audit trails.

For example: when a transaction is entered in the software, the software will maintain a record of it. Any further edits made to the details, such as a change in the name or amount will also be tracked by the software along with the user who made the changes and the time of change. Even if some transactions were to be deleted, the software will track that as well and keep the record of everything since the original entry was made.

Statutory Requirement:

- For the financial year commencing on or after the 1st day of April, 2022, every company which uses accounting software for maintaining its books of account, shall use only such accounting software which has a feature of recording audit trail of each and every transaction, creating an edit log of each change made in books of account along with the date when such changes were made and ensuring that the audit trail cannot be disabled.
- In simple words, the expectation is to maintain the edit log of every transition right from recording to tracking the changes that may take place.

Benefits of Audit Trail

A well-functioning audit trail offers the following benefits:

- User Accountability:** In an automated environment, a well-functioning audit trail system records the activities of every user. This promotes appropriate user behaviour because everyone is held accountable for their doings. Thus, introduction of virus to the system or unauthorised alteration of data can be prevented. Additionally, it helps to identify the intruders.
- Promotes Organisation's Data Security:** A well-functioning audit trail system ensures data security as it protects data from unauthorized access and fraudulent activities by staff and external parties.
- Allows Reconstruction of Events:** An excellent audit log system allows organisations to understand the operations of users, including cyber attackers. Data retrieval is also possible in some cases.
- Detection of System Interference and Errors:** A functioning audit trails system indicates upcoming system interference, failures, and errors. Such detections allow an organisation to respond accordingly to allow a smooth continuation of its operations.

Auditor's Duty to Report on Audit Trail:

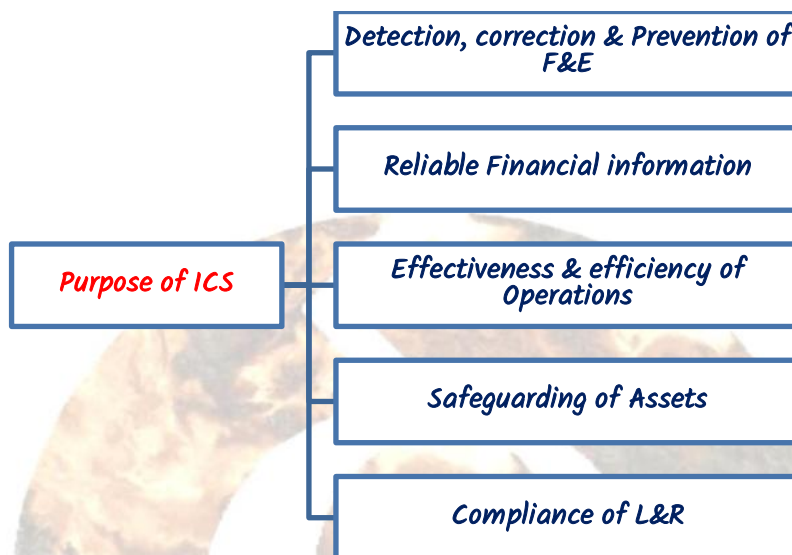
- An auditor needs to report whether the company, in respect of financial years commencing on or after the 1st April, 2022, has used such accounting software for maintaining its books of account which has a feature of recording audit trail (edit log) facility and the same has been operated throughout the year for all transactions recorded in the software and
- the audit trail feature has not been tampered with and the audit trail has been preserved by the company as per the statutory requirements for record retention

**THE END**

CONCEPT 25: INTERNAL CONTROLS AND INTERNAL AUDIT

INTERNAL CONTROLS:

- Internal controls are the procedures which are designed & implemented by the management



MANAGEMENT RESPONSIBILITY:

- The responsibility to implement Internal controls and to detect prevent Frauds and errors and to safeguarding of assets is on management.

FEATURES OF GOOD INTERNAL CONTROL SYSTEM:

Organization Structure

- Division of responsibility.
- Fixing of responsibility.
- Due to this efficiency of work will increase.

SUITABLE PERSON:

- Manager with prescribed qualification

MANAGEMENT ATTITUDE:

- How management are treating internal controls

INTERNAL AUDIT SYSTEM:

- Exist or not

INTERNAL CHECK SYSTEM:

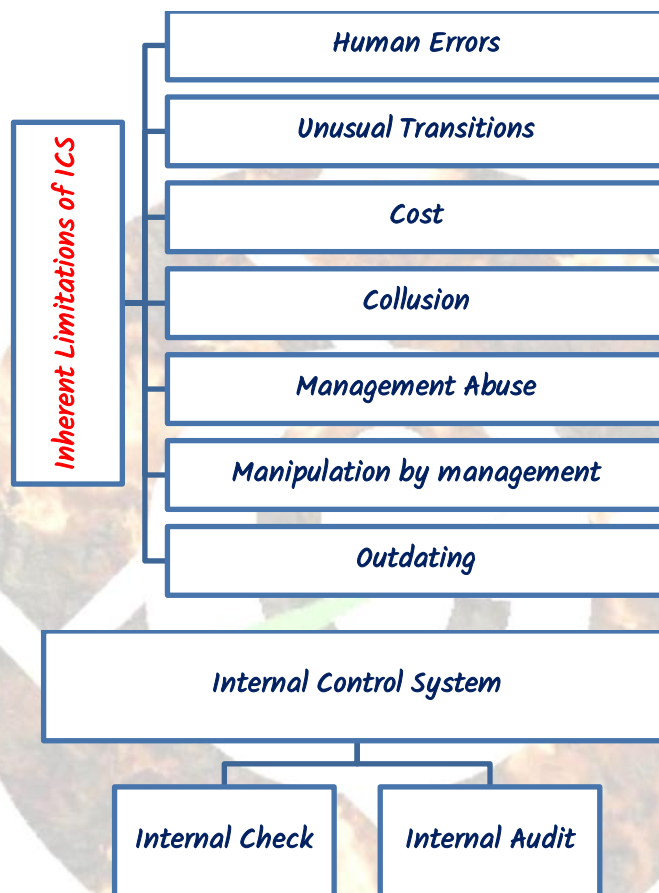
- Exist or not

REPORT:

- *Internal Auditor Report & Rectification*

COMMUNICATION:

- *Level of Internal Auditor will depends on his communication with appropriate person.*

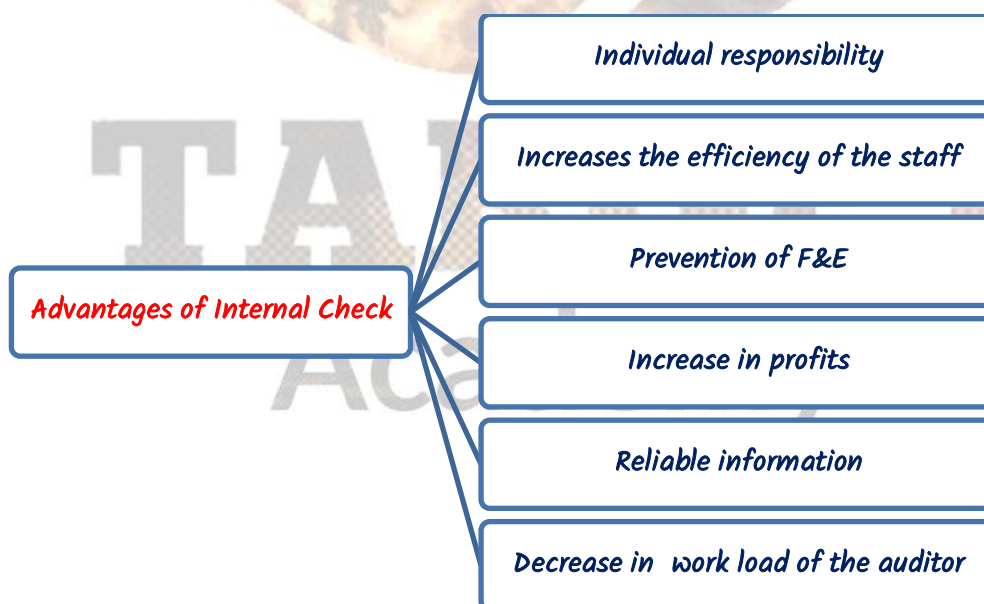
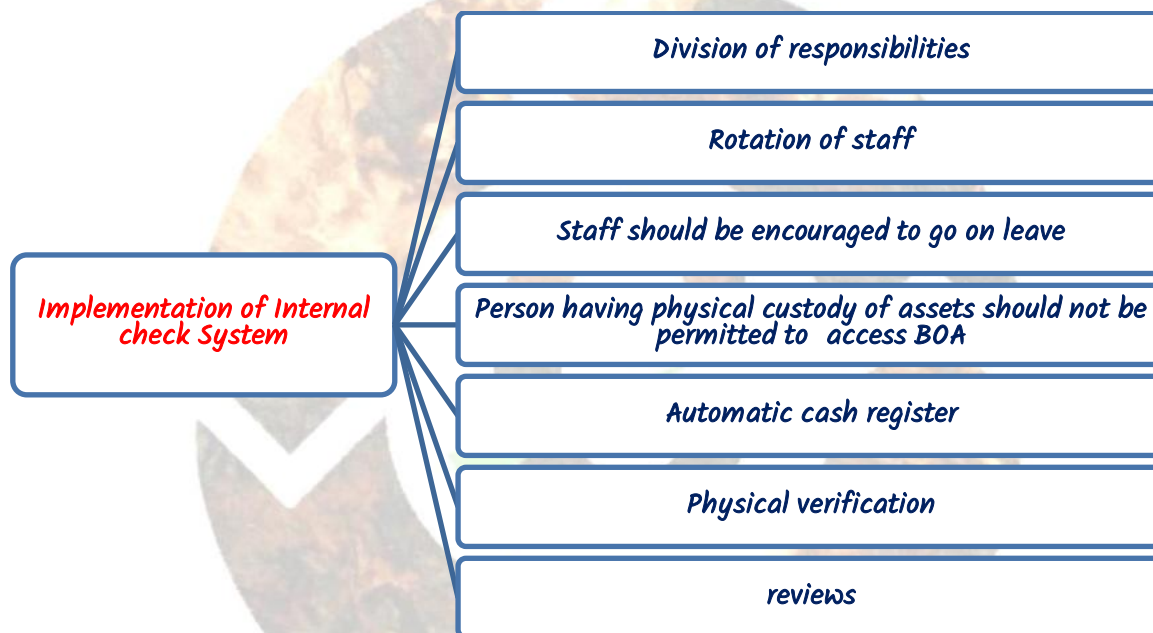


INTERNAL CHECK:

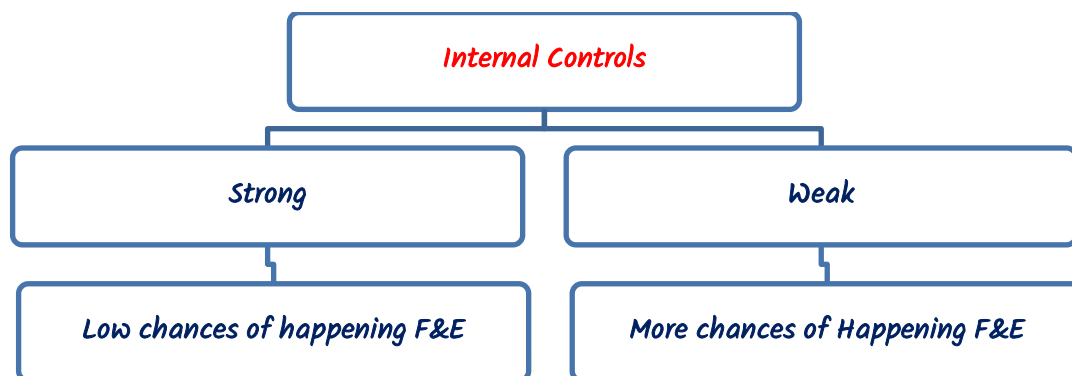
- *Division of responsibilities such that no single person is responsible for entire activity.*
- *Such that one person work is made complimentary for others.*
- *Day to day activity.*
- *Performed by client staff.*
- *During the transaction.*
- *Prevention of F&E.*
- *No reporting.*

<i>Internal Check</i>	<i>Internal Audit</i>
<i>Division of responsibilities.</i>	<i>Appointing professional to verify activities performed.</i>
<i>One person is not responsible for the total work.</i>	<i>Special activity done by professional.</i>

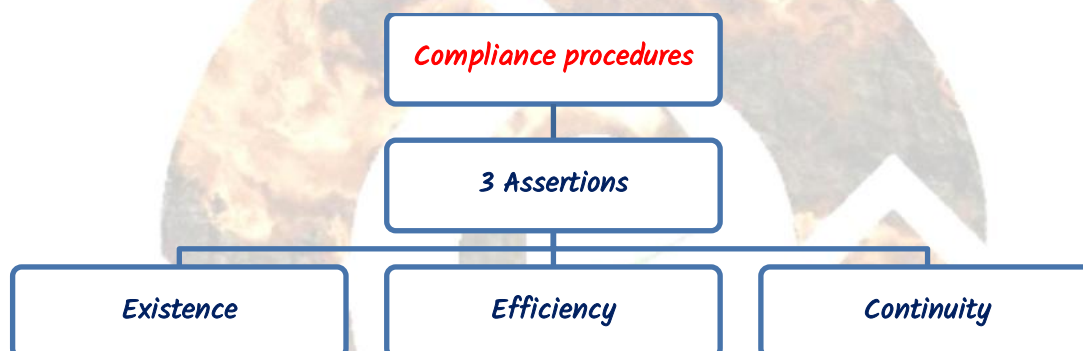
One persons work is verified by others.	All activities performed were verified by professional appointed.
Day to day activity.	Special activity.
No reporting if error occurs-transactions stops at that stage.	Reports to management if misstatement identified.
During the transaction.	After the completion of the transaction.
Prevents Errors & Frauds.	Detects Errors & Frauds.



NEED OF VERIFICATION OF INTERNAL CONTROLS BY THE AUDITOR:



HOW AUDITOR VERIFY INTERNAL CONTROLS:



AUDIT PLAN:

- Based up on the results of compliance procedures, Auditor will plan his Substantive procedures & also his detection risk.

METHODS TO VERIFY INTERNAL CONTROLS:

- 1. Narrative Record.
- 2. Internal Control Questionnaire
- 3. Internal control checklist.
- 4 .Flow chart.

NARRATIVE RECORD:

- Auditor will narrate all the internal he observed or verified.
- Prepared by:- Auditor.
- Source of information:- by observation or by inquiring management.
- Format:- Detailed or Descriptive.
- Suitability :- Small Co.
- it take lot of time for big Co.

- Objective :- To identify weakness in I.C.S

INTERNAL CONTROL QUESTIONNAIRE:

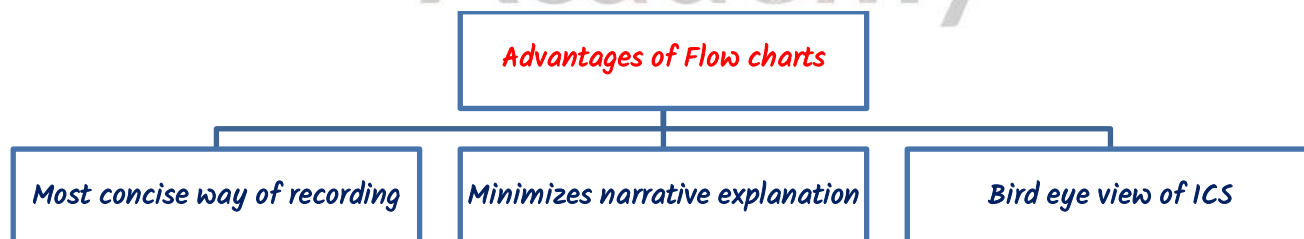
- Prepared by :- Auditor
- Answered by :- the Client staff.
- Format :- Questions are framed by the Auditor.(auditor will frame Q for all the I.C)
- Example :- Are there any raising of P.O before Purchases.
- Type of answer :- Yes or No And Remarks.
- Yes – Strength No – Weakness.
- Objective :- To identify weakness in I.C.S

INTERNAL CONTROL CHECKLIST:

- prepared by :- the Auditor.
- Answered by the Articled Staff.
- Format:- Questions are framed by the Auditor.(auditor will frame Q for all the I.C)
- Example:- Are there any raising of P.O before Purchases.
- Type of answer:- Yes or No.
- Objective :- To identify weakness in I.C.S

FLOW CHART:

- It is used in very Big entities.
- Prepared & provided by:- the Auditor/client.
- Format:- Diagrammatic representation.
- Objective :- To identify weakness in I.C.S
- Suitable to:- Large entities.
- Auditor require some technical knowledge to understand flow charts.



I.Q.C	I.C.C
Prepared by Auditor & answered by client staff	Prepared by Auditor but answered by articled staff.
Answer type- Yes or no & remarks	Answer type- Yes or no

INTERNAL CONTROL EVALUATION:

- This is not a Method.
- This is only the summary of Internal control Weakness.
- Major weakness in Question & answer format.
- E.g. Are there any instance that goods ordered mismatched with goods supplied.
- Question in negative format.
- Yes- Weakness , No- Strength.
- It is prepared at last & final stage.
- Objective:- To Identify material weakness

I.C.Q	I.C.E
It is a Method	This is not the method , this is the summary
All internal controls in Question & answer format	Only major weakness in Q & A format
Positive Framing	Negative framing
E.g. Are there any purchase order Yes- Strength No- Weakness	E.g. Are there any instance that goods ordered mismatched with goods supplied.
Prepared for the evaluation of internal controls to identify weakness in ICS	Prepared at the last and final stage to identify material weakness

STATUTORY AUDITOR'S RESPONSIBILITY W.R.T TO INTERNAL CONTROLS:

- No opinion on Internal Controls
- In order to decide NET of Substantive Audit procedures.
- Legal respo.
- Sec-143(3) – Duty to report on Existence & Operating Effectiveness of IFC.
- SA -265 – Communicating deficiencies in ICS to TCWG, Mng

AUDITOR'S RESPONSIBILITY W.R.T INTERNAL CONTROL WEAKNESS IDENTIFIED:

- No impact on his opinion.

- No need to change his opinion.
- Used to design NET of Substantive Audit procedures.
- Report when there is specific legal responsibility.
- Communication to Management & TCWG.

INTERNAL AUDIT:

- Internal Audit is an appraisal activity.
- Identifying the weakness and
- Suggesting the actions to over come those weakness.



Particulars	Internal Auditor	Statutory Auditor
Appointment	Management	Share Holder
Scope	Management	Act
Reporting	Management	S.H
Remuneration	Management	S.H
Independence	Less	More
Legal responsibility	No	Yes
Standards	Standards on Internal Audit	S.A

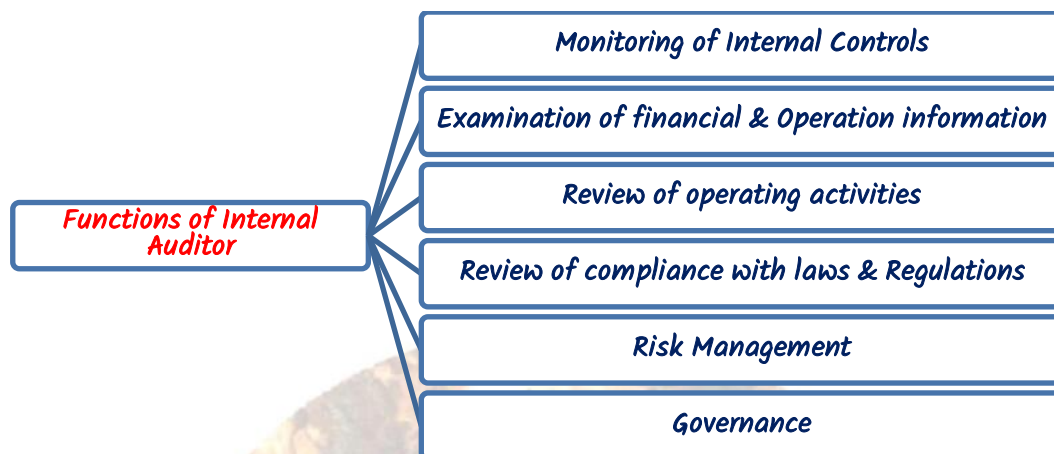
INDEPENDENCE OF INTERNAL AUDITOR:

- The concept of independence is equally relevant for internal Auditor.
- Internal auditing is an independent, objective assurance & consulting activity designing to add value & improve an organization's operations.
- Internal auditor may be part of the management, but he evaluates the functioning of the management at different levels
- Efficient & effective, the Internal Auditor must have adequate independence.
- Internal Auditor cannot be expected to have same degree of independence as is essential for external auditor.

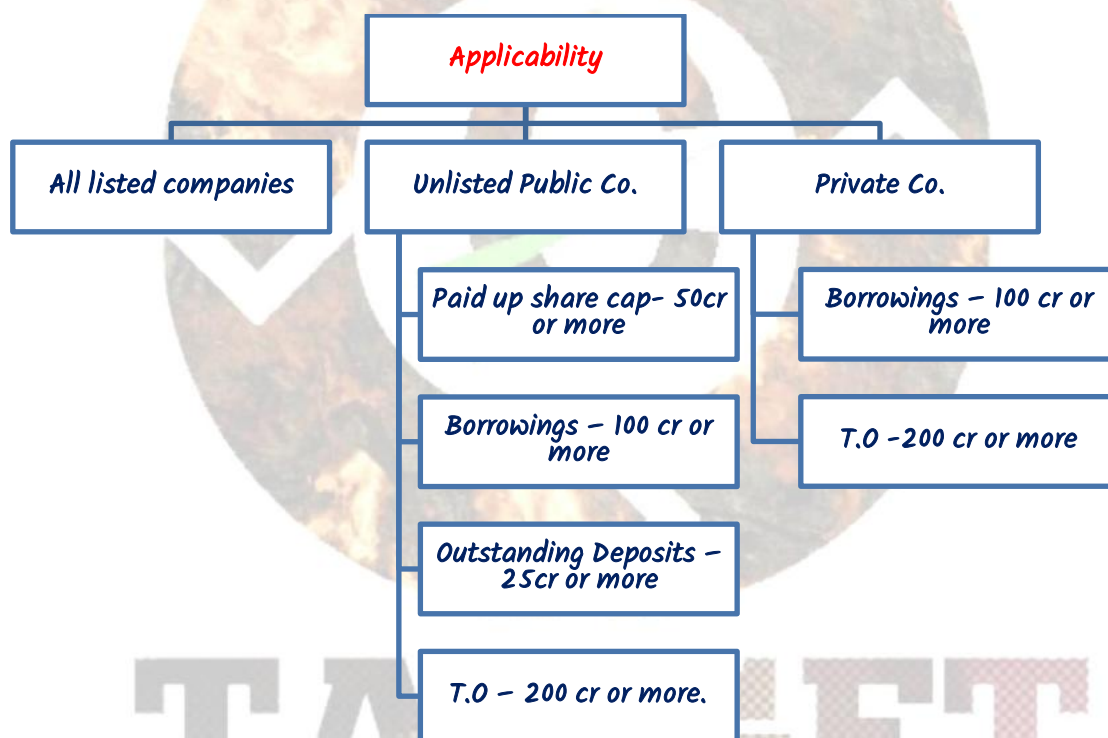
RELATIONSHIP B/W STATUTORY AUDITOR & INTERNAL AUDITOR:

- Internal Audit is the integral part of ICS.
- As per Sec-138- It is statutory requirement to implement internal Audit function by AC/BOD.
- Primary objectives of internal & statutory differs, some of objectives are similar.
- So work of internal Auditor may be useful to statutory Auditor.
- Co-operation b/w Statutory auditor & internal auditor is limited.

DEFINITION OF INTERNAL AUDIT:



APPLICABILITY OF INTERNAL AUDIT:



WHO CAN BE THE INTERNAL AUDITOR:

- CA
- CMA
- Any other professional decided by BOD
- May or may not be the employee of the co. i.e. employee of the co. can also can act as the Internal Auditor

THE END

CONCEPR 26: INTERNAL FINANCIAL CONTROL OVER FINANCIAL REPORTING**Internal Financial Control:**

- internal financial controls' means the policies and procedures adopted by the company for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information.
- Existence of adequate internal financial control not only reduces the burden of the auditor but also provides reasonable assurance about the appropriateness of the accounts and the results generated therefrom.

Report on Internal Financial Control:

- As per Sec 143(3)(i) of Companies Act 2013, the report of the auditor should state as to whether the company has adequate Internal Financial Control system in place and the operating effectiveness of such controls.
- Rule 8(5)(viii) of the Companies (Accounts) Rules, 2014 requires the Board of Directors' report of all companies to state the details in respect of adequacy of internal financial controls with reference to the "financial statements".

Internal Financial Control over Financial Reporting:

- Internal financial controls over financial reporting shall mean A process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.
- A company's internal financial control over financial reporting includes those policies and procedures that –
 - i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
 - ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and
 - iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Auditor's Responsibility:

- Sec 143(3)(i) of Companies Act, 2013 requires that the report of the auditor should state as to whether the company has adequate Internal Financial Control system in place and the operating effectiveness of such controls.
- Further, Rule 10A of Companies (Audit & Auditors) Rules 2014 states that:

For the financial years commencing on or after 1st April 2015, the report of the auditor should state about existence of adequate Internal financial controls and its operating effectiveness.

IFC vs. IFC-FR:

- Internal Financial Control over Financial Reporting (IFC-FR) covers those controls which are elements of Financial Reporting i.e., of balance sheet, profit and loss accounts.
- Internal Financial Control (IFC), in addition to ICFR, covers controls which ensure efficient and effective functions of business, controls which safeguard assets and ensure compliance of policies.
- IFC as a concept is much wider in scope when compared to IFC-FR.
- $IFC = IFC-FR + \text{Operational Controls} + \text{Anti-fraud Controls}$
- IFC-FR is a concept which is more intended towards users/readers of financial statement whereas IFC is more intended towards functions and management of the business.



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THE END

CONCEPT 27: SAG610 - USING THE WORK OF INTERNAL AUDITOR

SCOPE

External Auditor using the work of internal Auditor to:-

- TO Obtain S&A Audit evidence
- TO Provide Direct assistance under director, Supervision & Review of E.A

factors to determine the extent to which he can rely on the work of an internal auditor:

- whether internal audit is undertaken by an outside agency or by a separate audit department within the entity.
- the scope of internal audit, management action and the internal audit report.
- experience and qualification of internal auditor.
- the technical compliance by internal auditor.
- authority vested on internal auditor and level of management to whom he is accountable.
- whether professional care has been taken by the internal auditor in conducting audit work.

Responsibility of External Auditor

EA is Audit opinion solely responsible for Audit opinion Expressed, even if Work of internal Auditor is used.

Direct Assistance :-

Use of IA to perform certain audit procedures under the direct Supervision & Review of external Auditor

PRIOR TO USING DA, EA SHALL OBTAIN:

- Written agreement from Authorized representative of entity that I'AS will be to follow EA'S instructions & entity will not intervene
- Written agreement from I'A's that - they will keep Confidential of specific matters as instructed.

AREAS IN WHICH E.A CANNOT USE D.A:

- Involve making Significant Judgment.
- Relate to Higher Romm
- Relate to work involved with which I'A'S have been
- Relate to decision E.A makes in accordance with SA regarding I.A function and use of its work of direct assistance.

Ex-

1. *Assessing Romm*
2. *Evaluating Sufficiency of tests performed.*
3. *Evaluating appropriateness of Gc assumption.*
4. *Evaluating Adequacy of disclosure in F.S*
5. *Evaluating significant Acing estimates.*

**THE END**

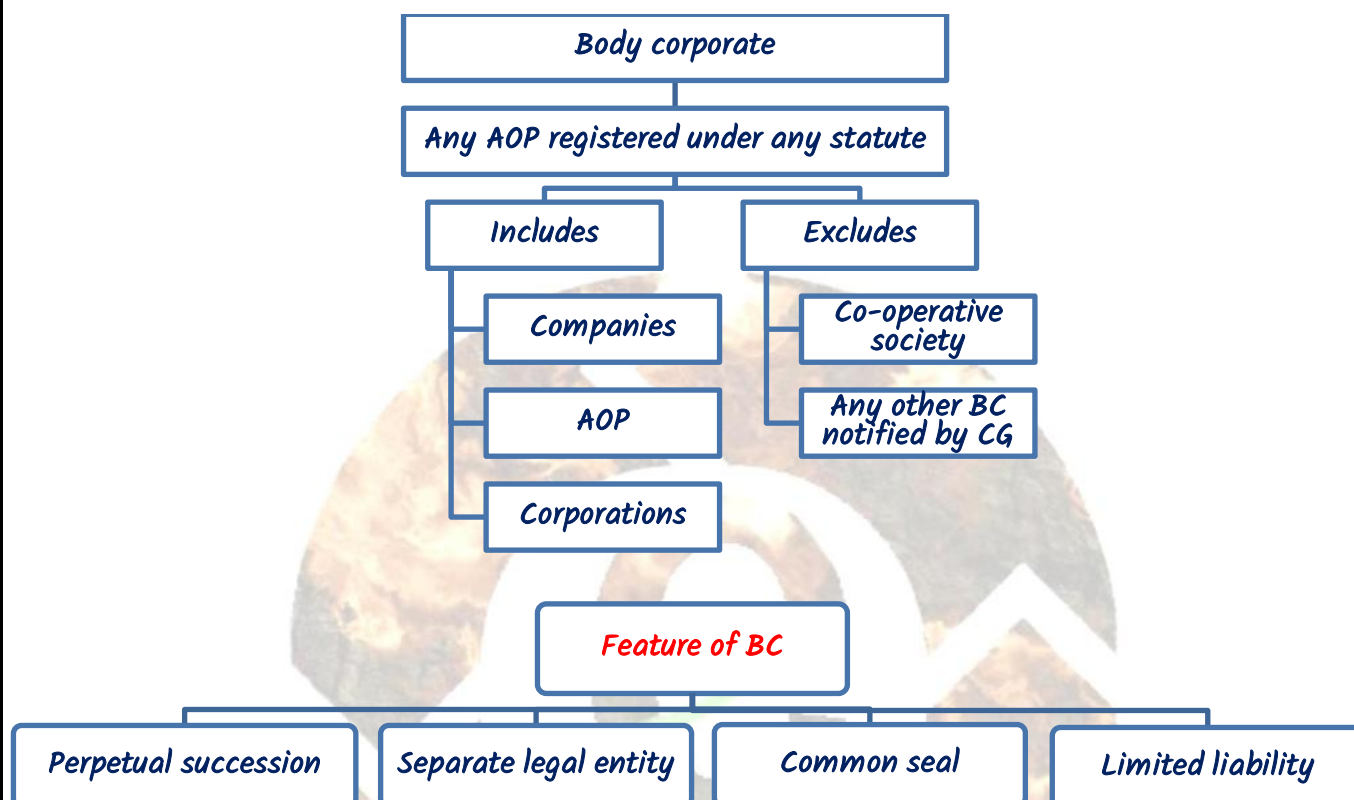


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AUDITING

CONTACT: 90595 29540, 90106 76997.

CONCEPT – 1: QUALIFICATION OF AUDITOR



All Co. are BC but all BC are not Co.(e.g. LIC)

Company

Company means a company registered under companies Act, 2013 or any previous law

Chartered Accountant(as per Co. Act, 2013)

Chartered means Chartered as per Sec-2(1) of CA Act, 1949 & who holds valid COP

Chartered Accountant (as per CA Act, 1949)

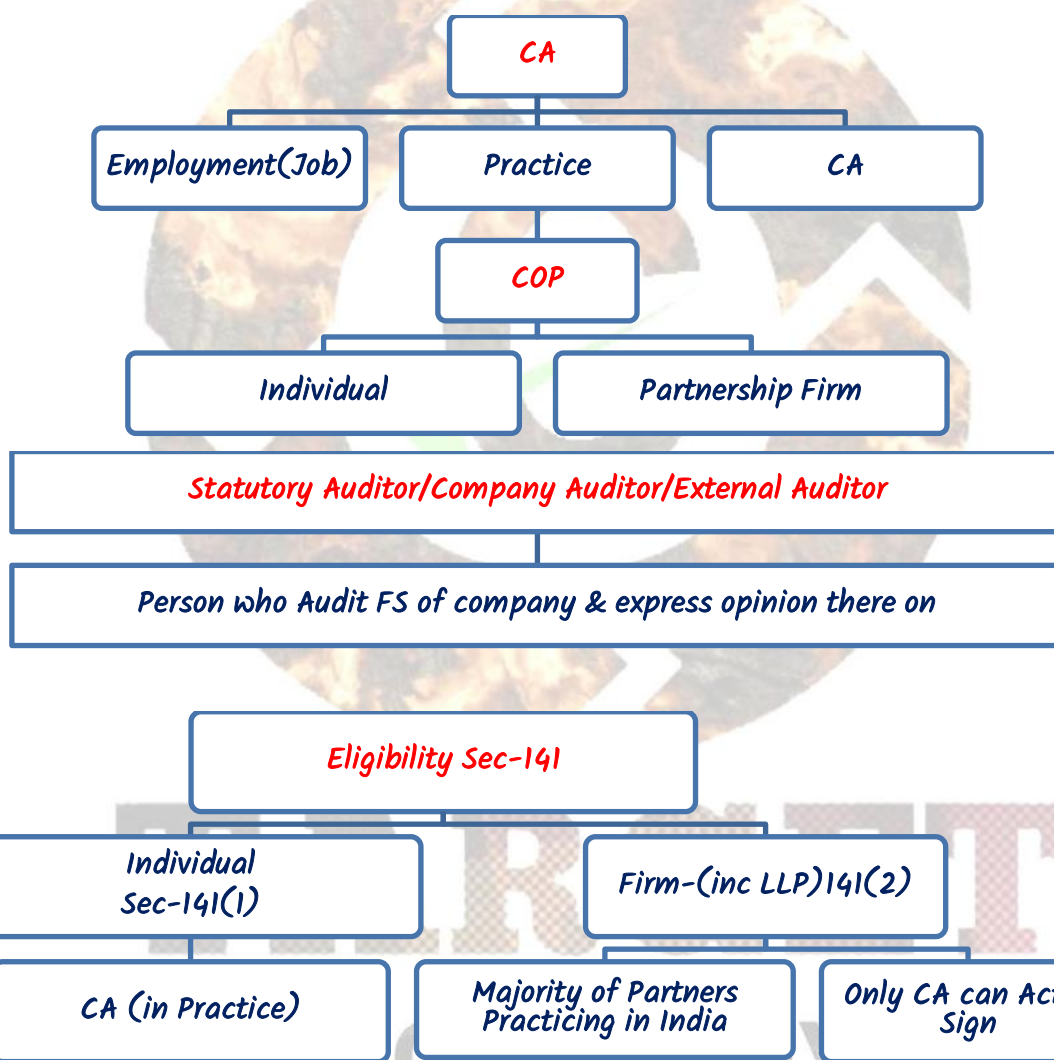
Person who cleared CA final examination & Who completed GMCS

THE END

CONCEPT-2 DISQUALIFICATION OF AUDITOR

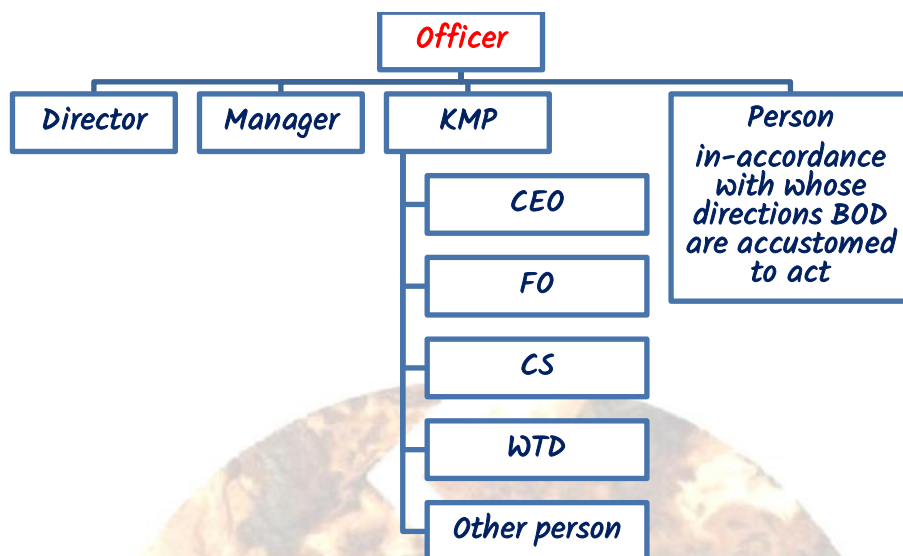
DISQUALIFICATIONS OF CA:

- Age less than 21 years.
- Unsound Mind
- Insolvent.
- Convicted by court of offence.
- Removed by ICAI



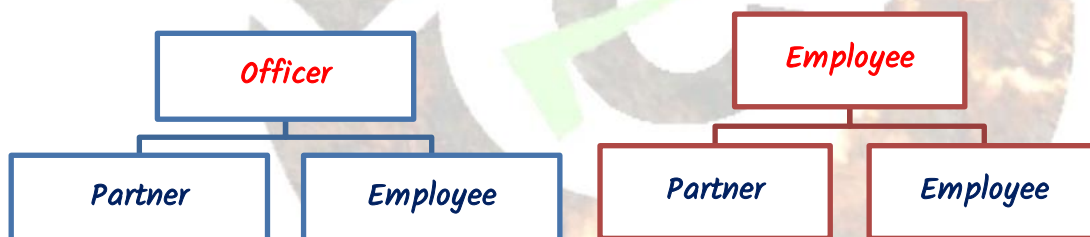
DISQUALIFICATIONS- SEC-141(3):

1. Body Corporate (other than LLP)
2. Officer or Employee of the Company

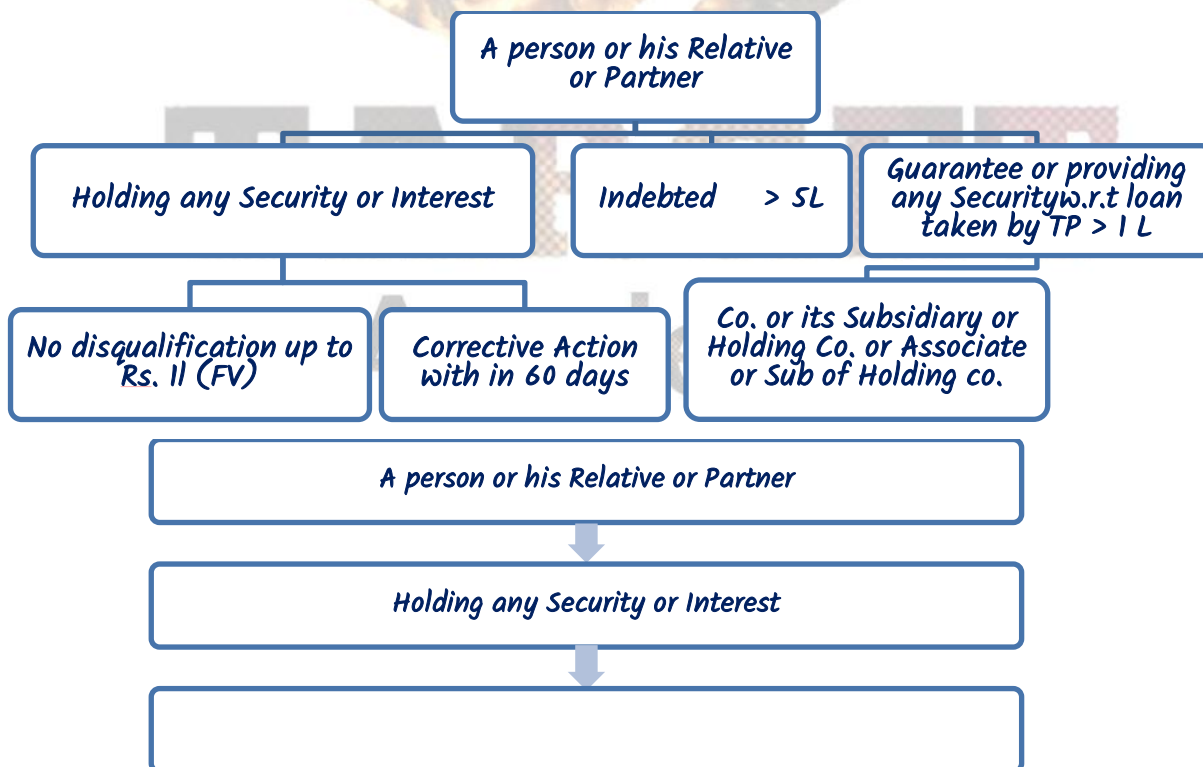


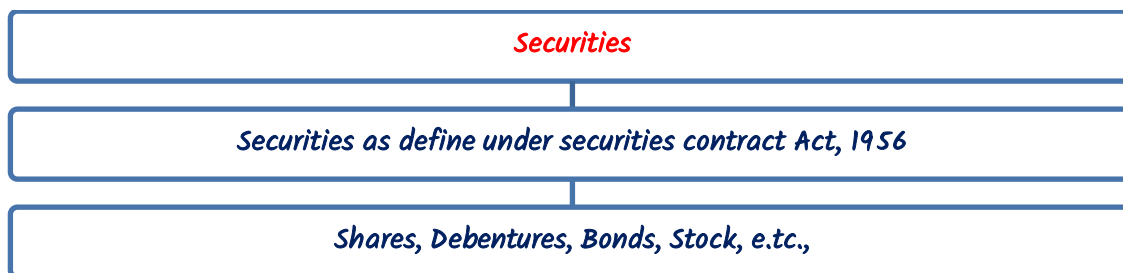
	Employee	Consultant
Agreement	Contract of service	Contract for service
Relationship	Master & servant relationship	Master & master

3. Person who is partner or employee of officer or employee of Co.



4.





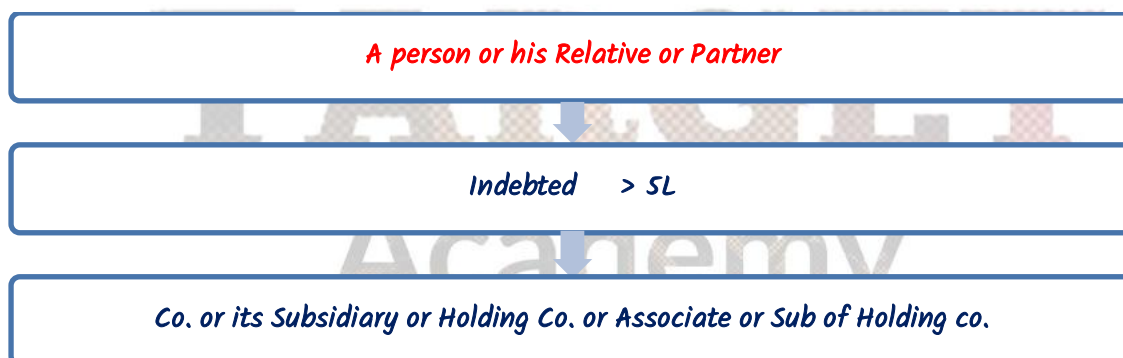
RELATIVE:

- Spouse
- Members of HUF.
- Father(including step father)
- Mother (including step mother)
- Brother(including step sister)
- Sister(including step sister)
- Son(including step son)
- Son's wife
- Daughter
- Daughter's husband

EXCEPTION ONLY IN CASE OF RELATIVE HOLDING SECURITIES:

- No disqualification if relative holding securities up to 1 lac (face value).
- If relative holding or increases his holdings above 1 lac (FV) after appointment then auditor should take corrective action within 60 days.

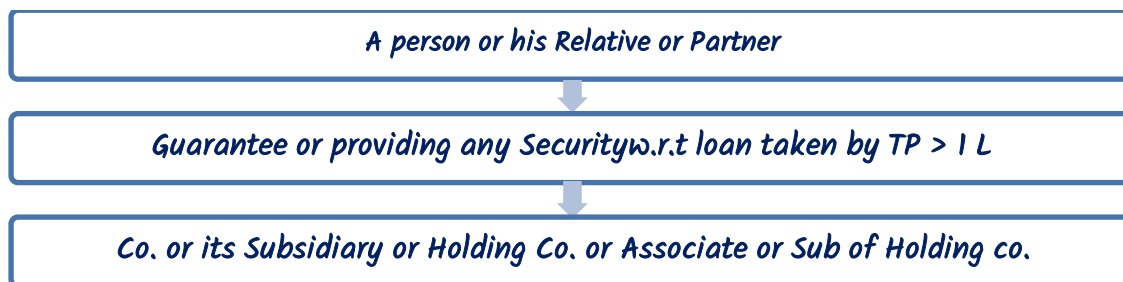
CORRECTIVE ACTION:- Reduce such share holding up to 1 lac or below.



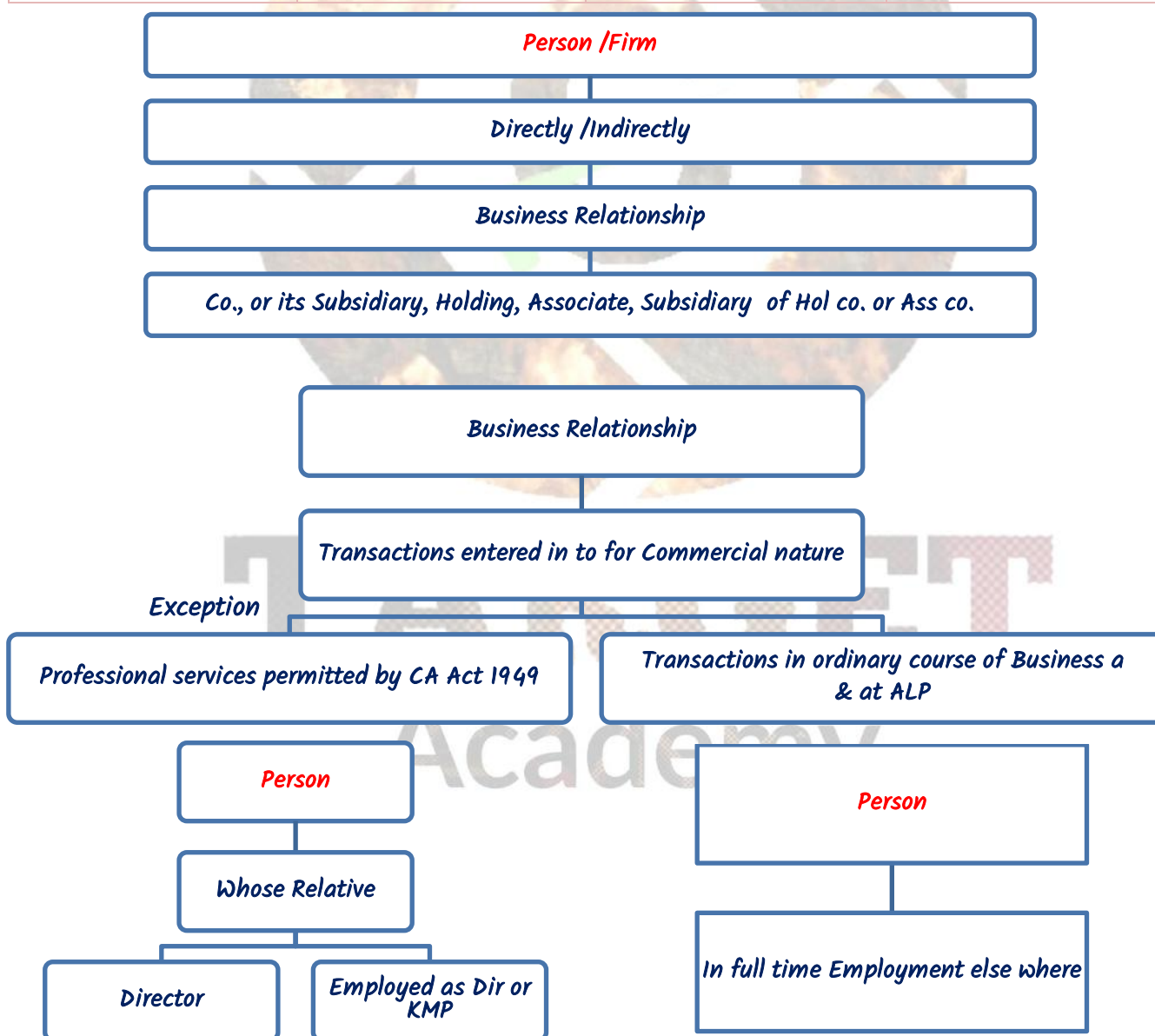
Note-1. Indebtness applicable even though in ordinary course of business.

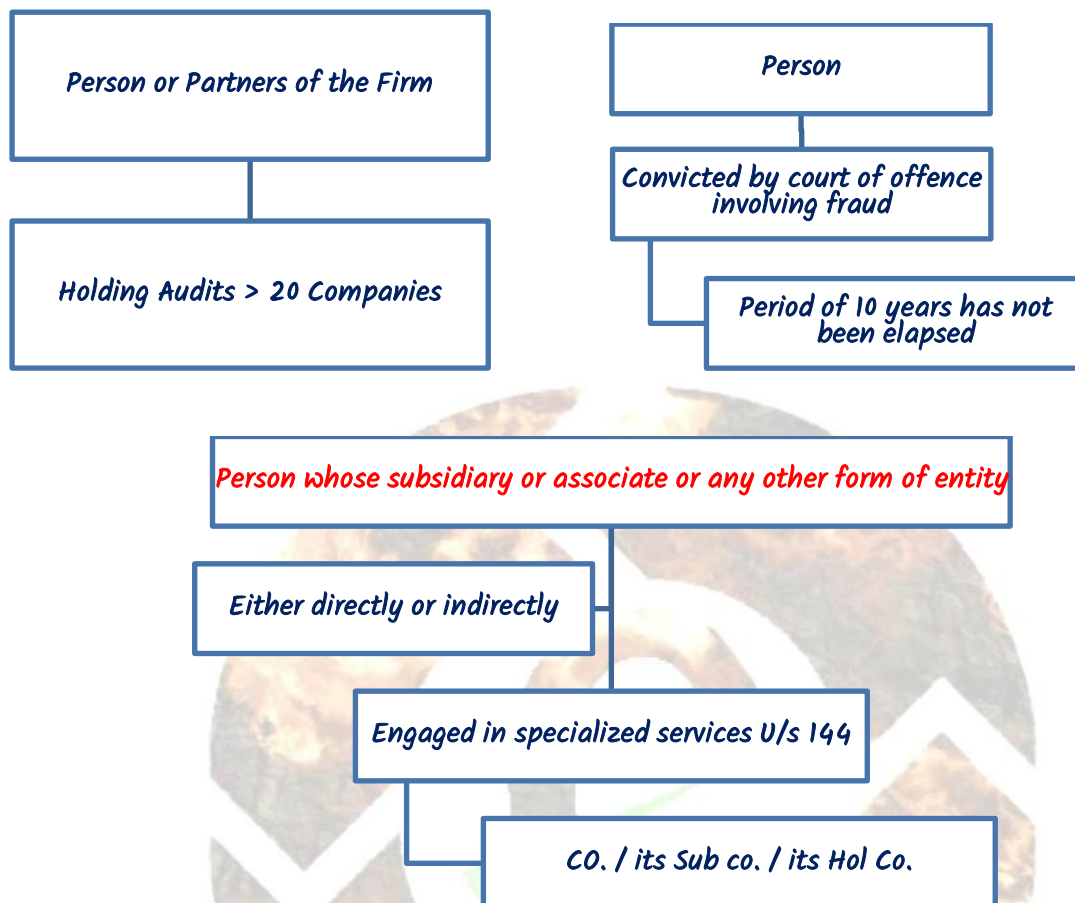
Note-2. Indebtness applicable even though audit fee received in advance.

Exception- progressive payment.



Loan given by	Loan taken by	Guarantee given by	Decision
Co.	T.P	Auditor to the Co.	D.Q
Auditor	Co.	T.P to the Auditor	Q
Co.	Auditor	T.P to the Co.	D.Q(Indebtness)
T.P	Co.	Auditor to the T.P	Q
T.P	Auditor	Co. to the T.P	Q





NON AUDIT SERVICES:

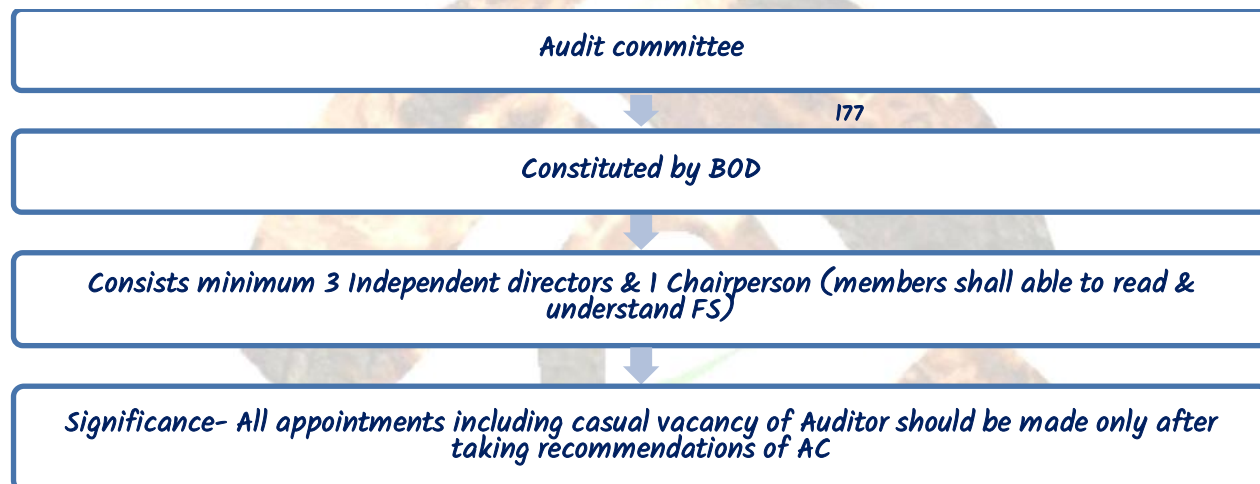
- Accounting & Book Keeping Services.
- Internal Audit.
- Design & Implementation of any F.I.S.
- Actuarial Services.
- Investment Advisory Services.
- Investment Banking Services.
- Rendering of outsourced financial services.
- Management services.
- Any other services prescribed

Sec-141(4)

If any disqualification incurred by the Auditor after the appointment, then he should vacate the office immediately

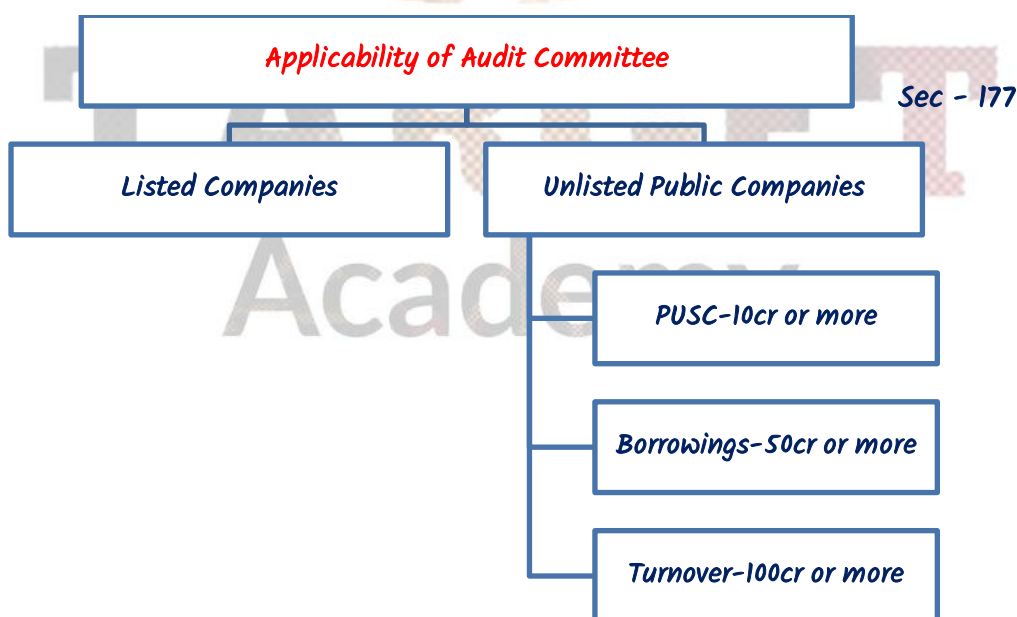
THE END

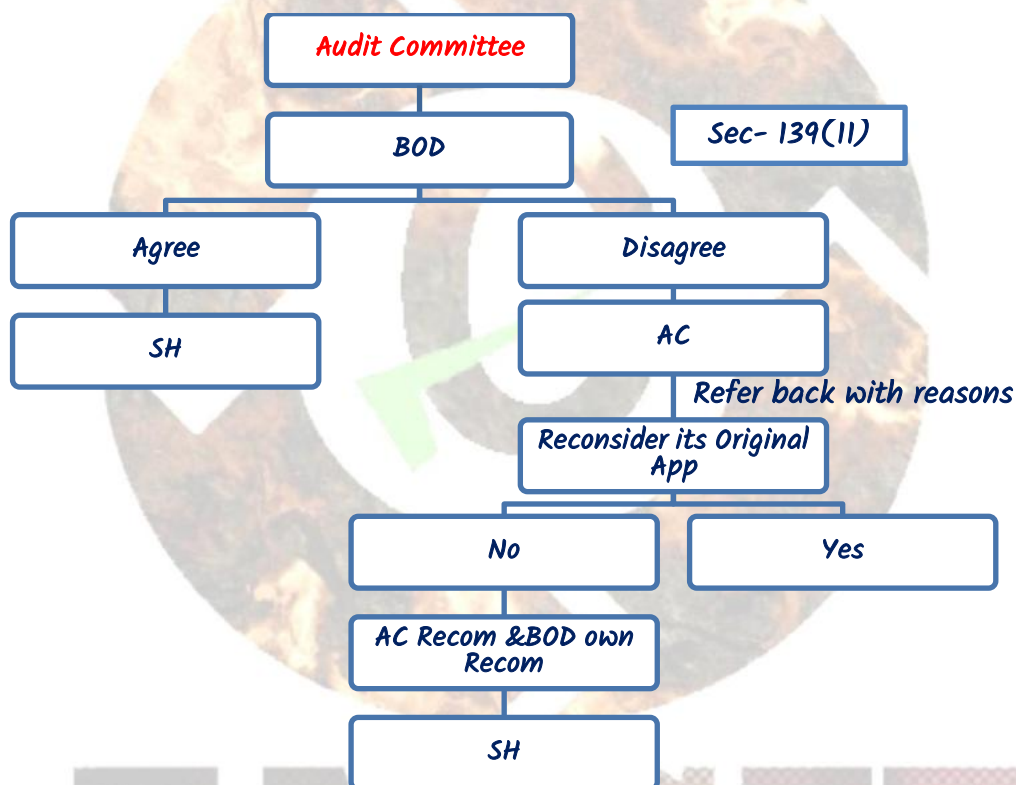
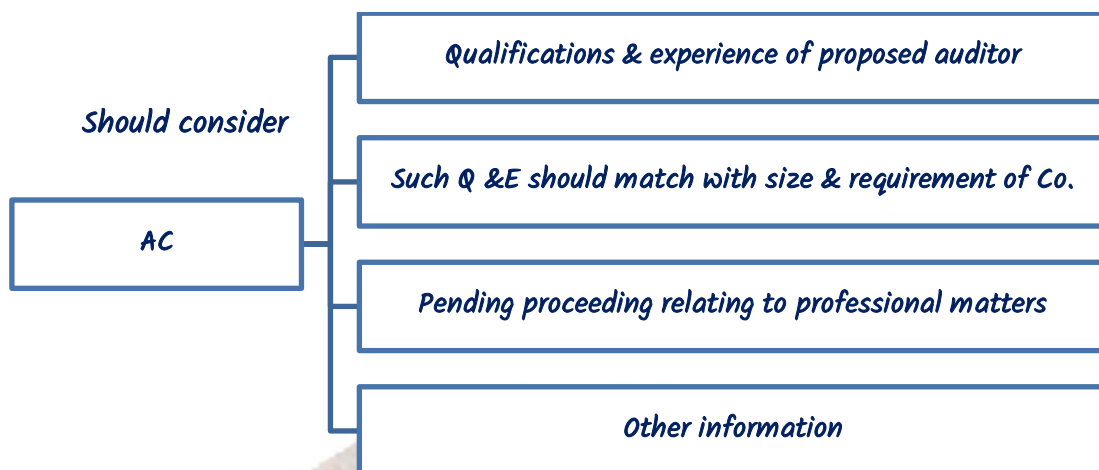
CONCEPT-3 :- AUDIT COMMITTEE



Audit committee meetings

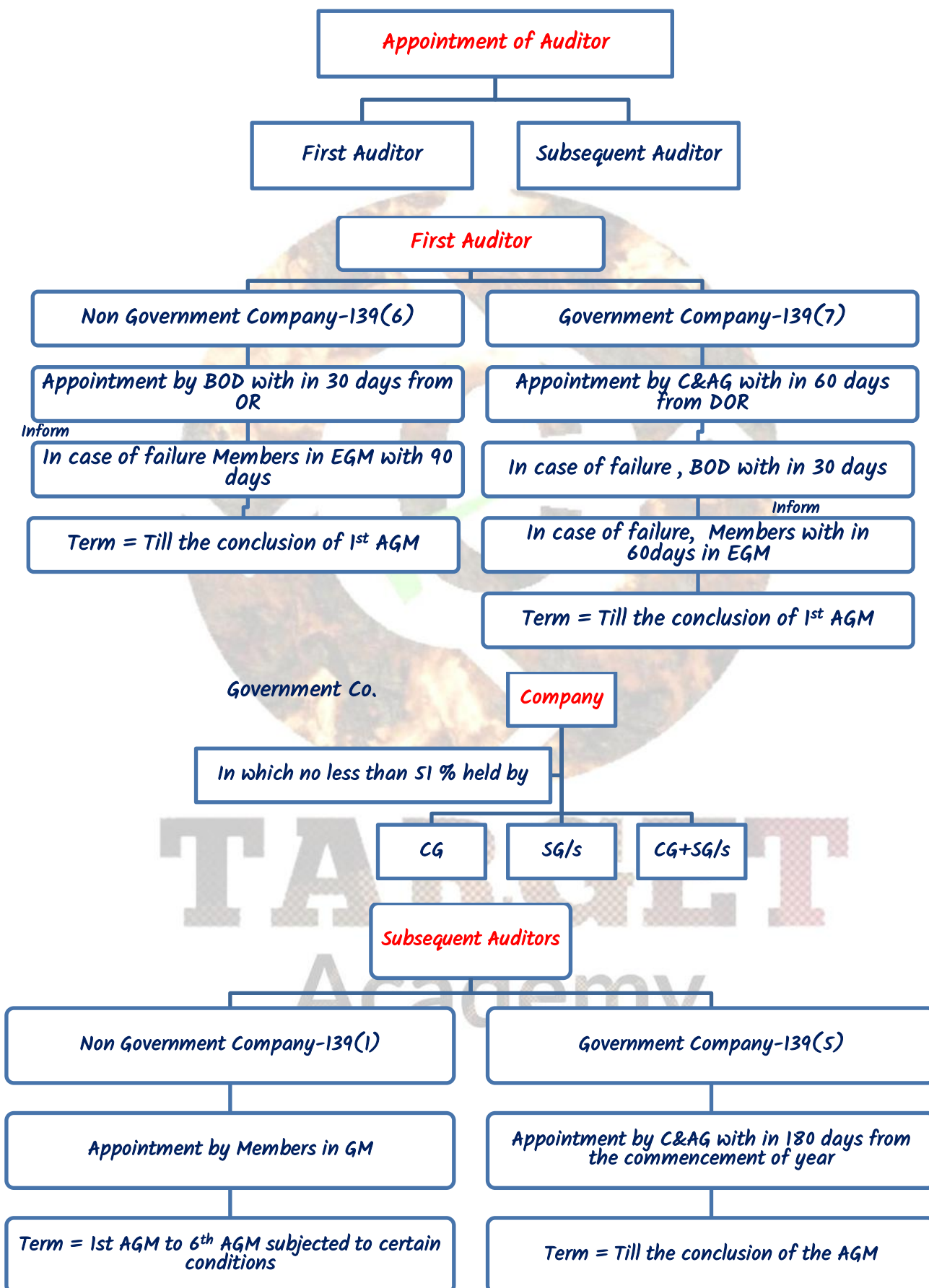
Auditor & KMP have **right to heard**, but they **don't have right to vote** (only to those meetings in which Audit's report is considered)





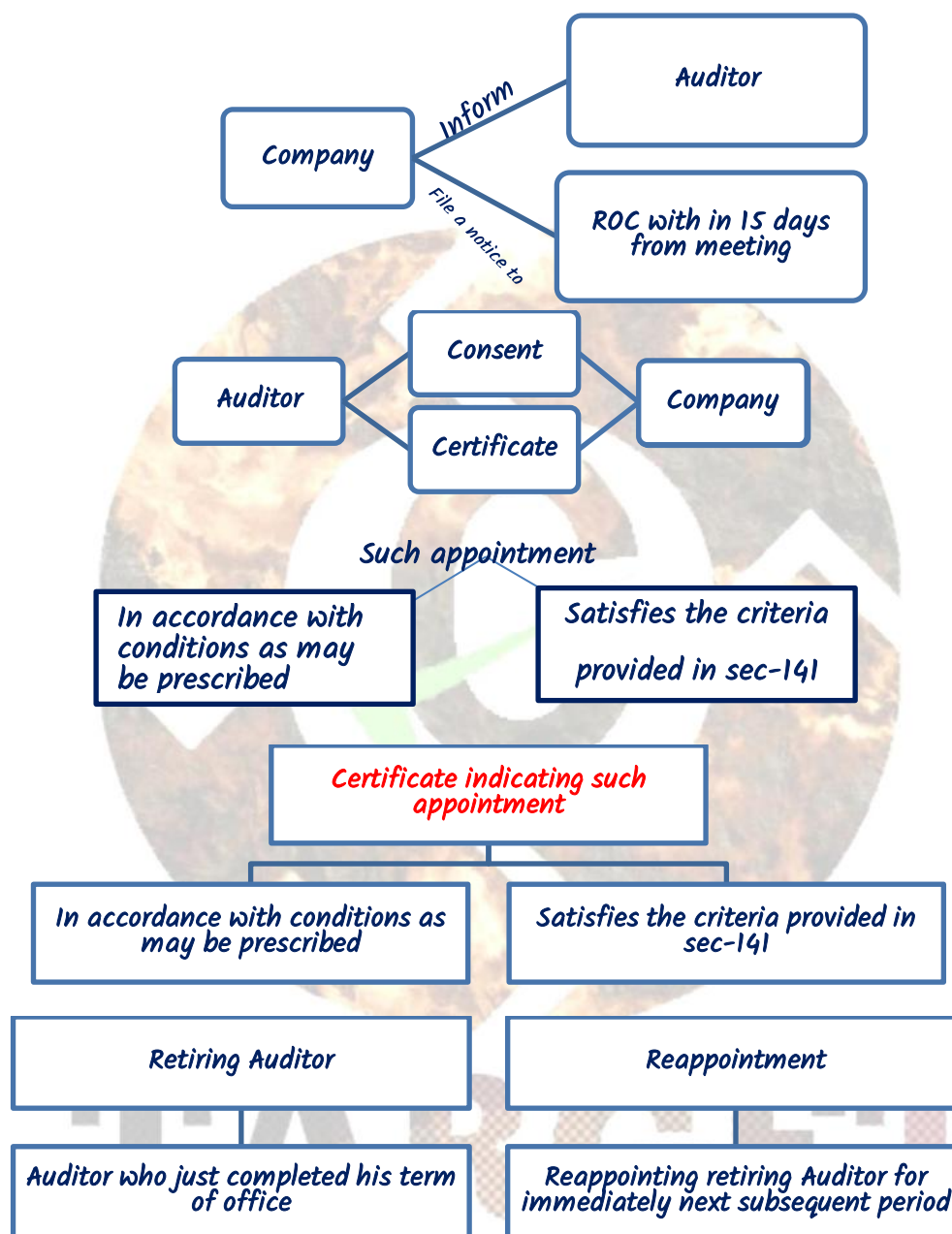
THE END

CONCEPT-4:- APPOINTMENT OF AUDITOR



- Every year members should ratify such appointment for continuation of 5 years of office.
- If appointment is not ratified by the members, the BOD shall appoint another Auditor.

PROCEDURE OF APPOINTMENT OF SUB AUDITOR:

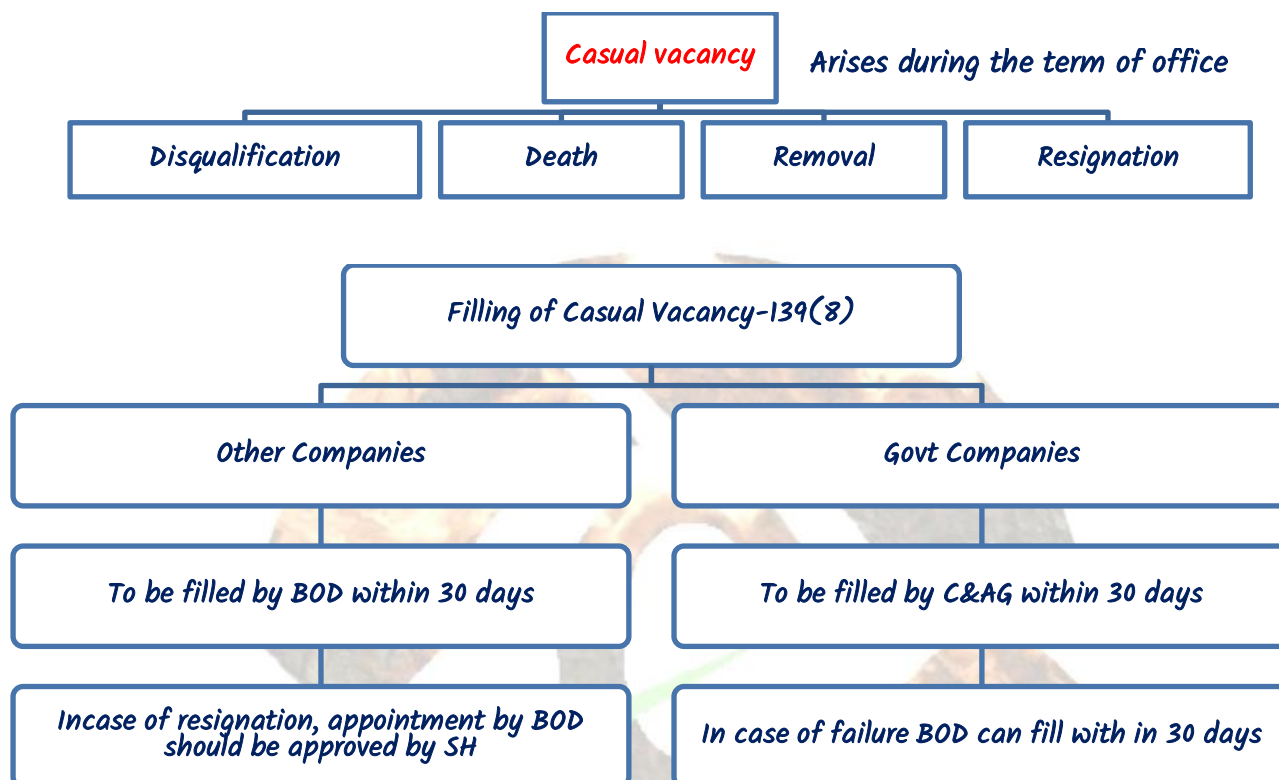


UNDER WHAT CIRCUMSTANCES THE RETIRING AUDITOR CAN'T BE REAPPOINTED:

- Disqualified
- Filed his unwillingness.
- Resolution passed to appoint some body else or not to appoint retiring Auditor.
- Written Certificate not been obtained to that effect such appointment will be in accordance with limits u/s 141(3)(g)
- Specific resolution not been passed to Reappoint the Retiring Auditor.

THE END

CONCEPT-5 :- CASUAL VACANCY OF AUDITOR



DUTY OF THE AUDITOR IN CASE OF RESIGNATION:



IN CASE OF NONCOMPLIANCE:

Penalty –

140(3)

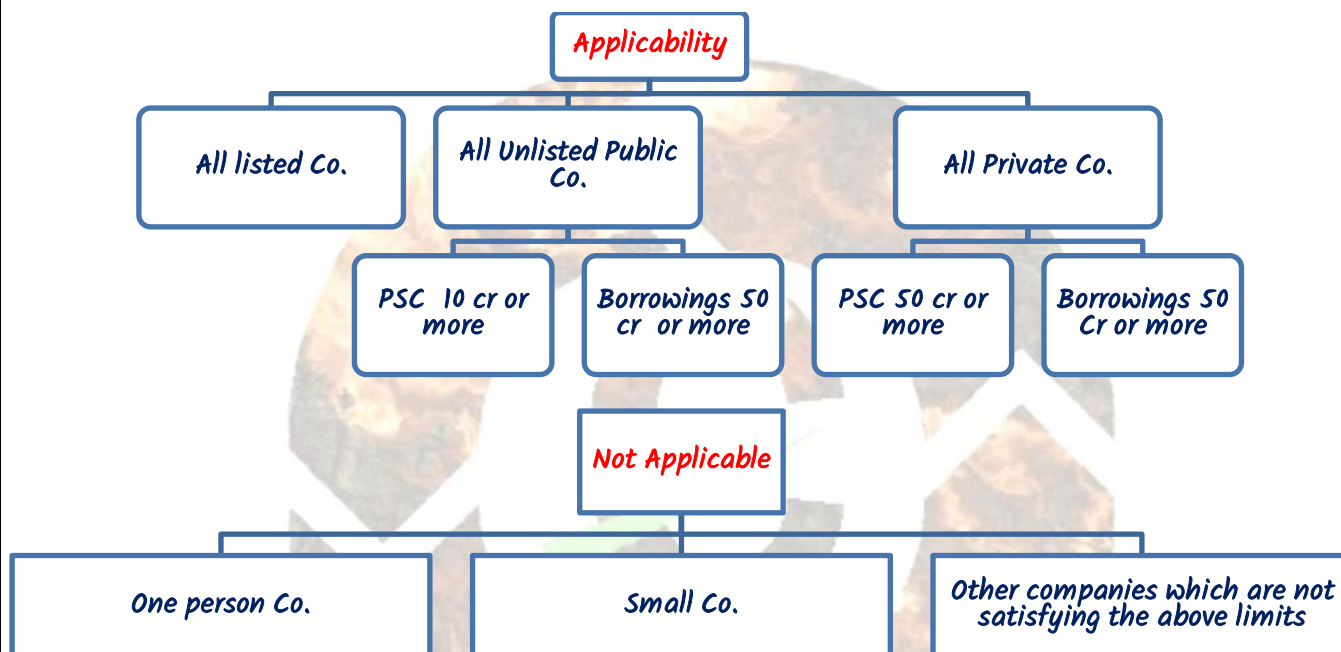
- Minimum-- 50,000 or Remuneration of Auditor -Which ever is less
- In case of continuing failure 500 for each day (Max -- 5 lac)

THE END

CONCEPT-6:- ROTATION OF AUDITOR

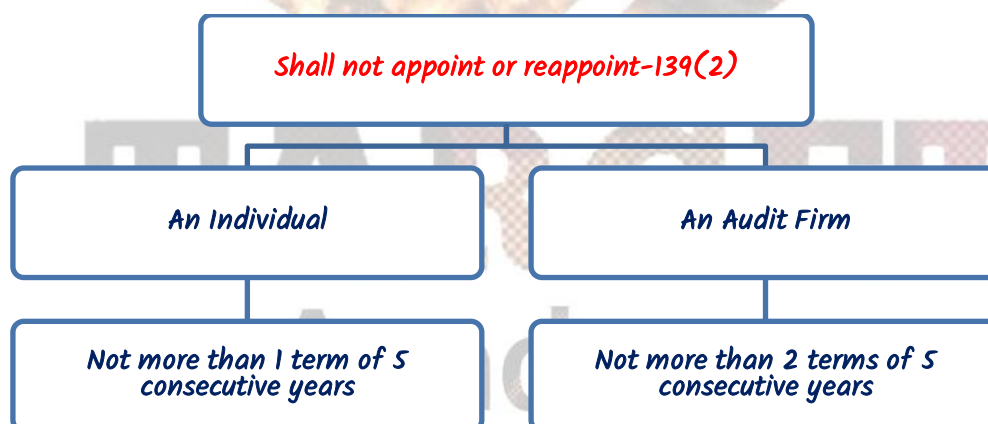
ROTATION OF AUDITOR:

- Auditor should vacate after certain period.
- Replacing the Auditor after certain period.



ROTATION OF AUDITORS:

- The above companies shall not appoint or reappoint

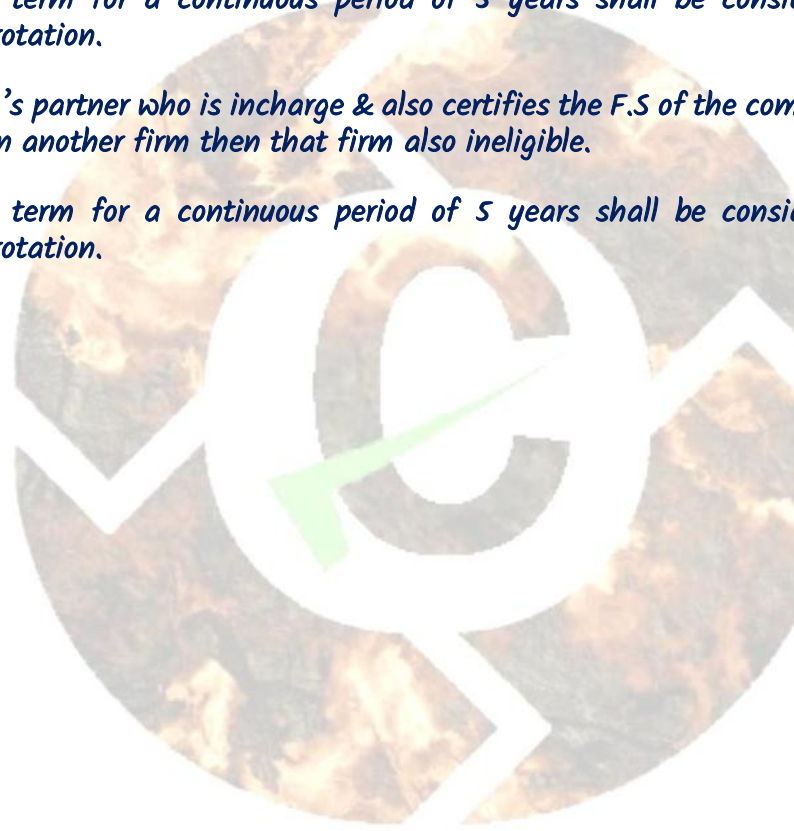


ROTATION OF AUDITOR:

- An individual or Firm who or which has completed term as said above shall not be eligible for reappoint as Auditor in the same company for 5 years from the completion of his term

ADDITIONAL POINTS:

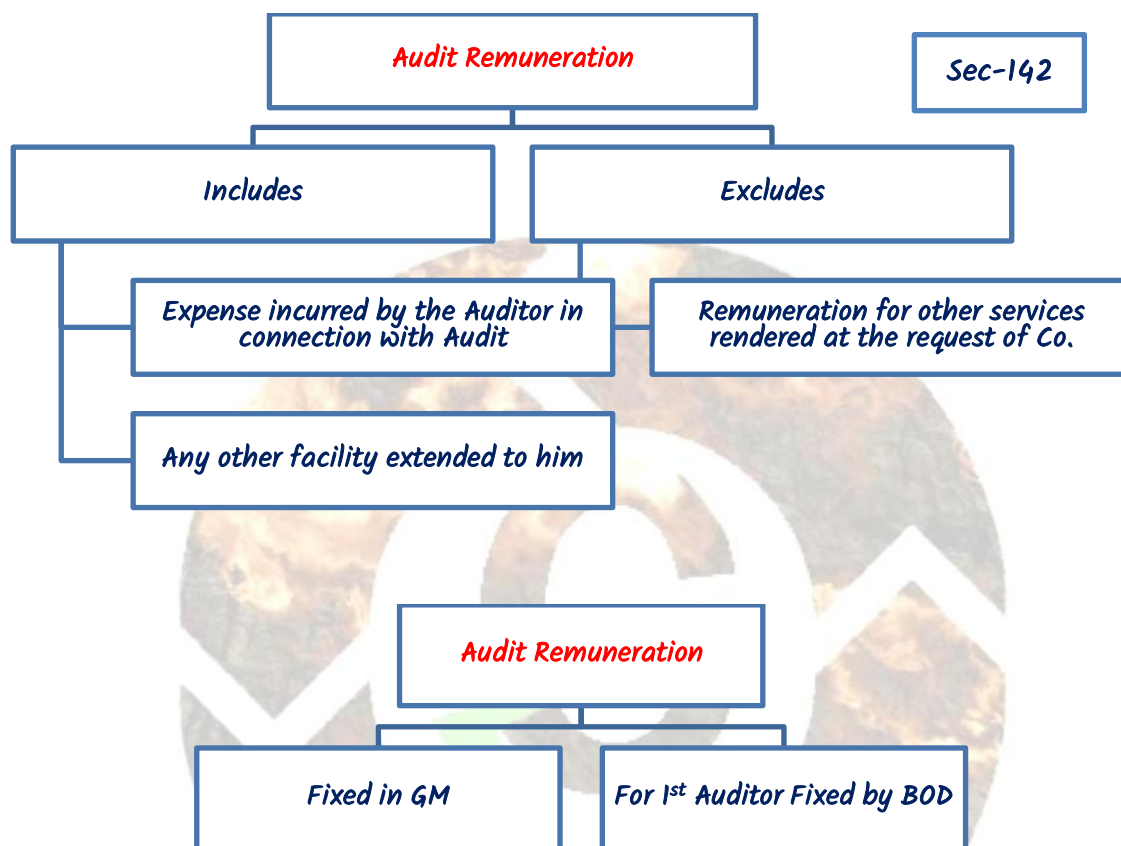
- *Audit firm having common partner or partners is also not eligible.*
- *The incoming Auditor should not be related to the Firm of outgoing partner or same network of Audit firms.*
- *If outgoing firm's partner who is in charge & also certifies the F.S of the company retires from said Firm and joins in another firm then that firm also ineligible.*
- *A break in the term for a continuous period of 5 years shall be considered as fulfilling the requirement of rotation.*
- *If out going firm's partner who is incharge & also certifies the F.S of the company retires from said Firm and joins in another firm then that firm also ineligible.*
- *A break in the term for a continuous period of 5 years shall be considered as fulfilling the requirement of rotation.*



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THE END

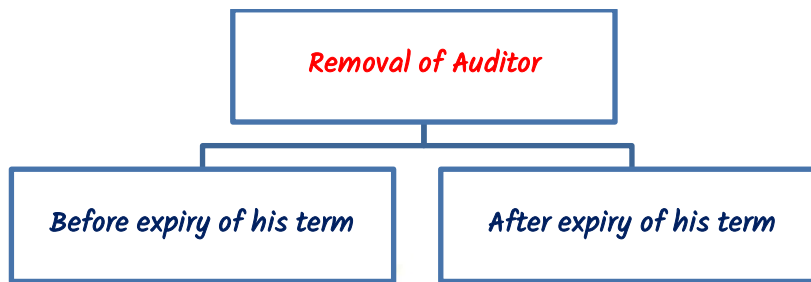
CONCEPT-7:- AUDIT REMUNERATION



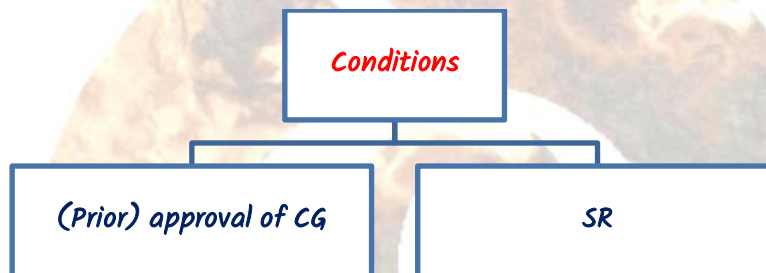
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Academy

THE END

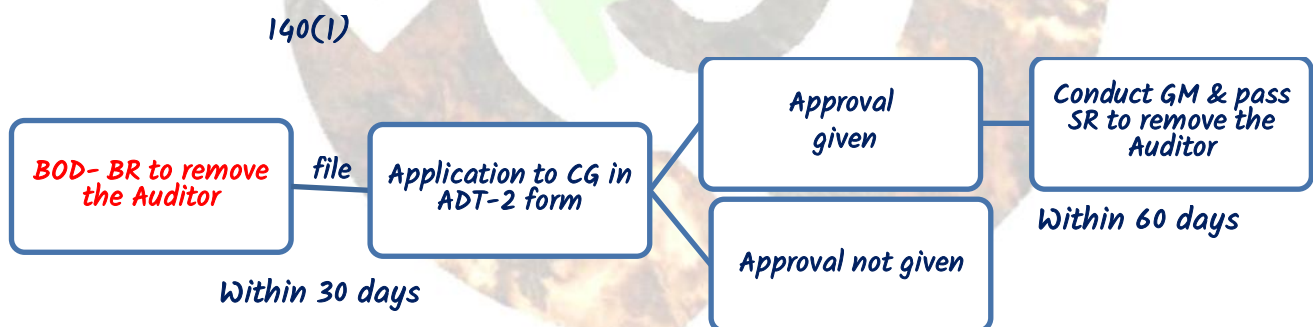
CONCEPT-8:- REMOVAL OF AUDITOR



REMOVAL OF AUDITOR BEFORE EXPIRY OF TERM:



PROCEDURE

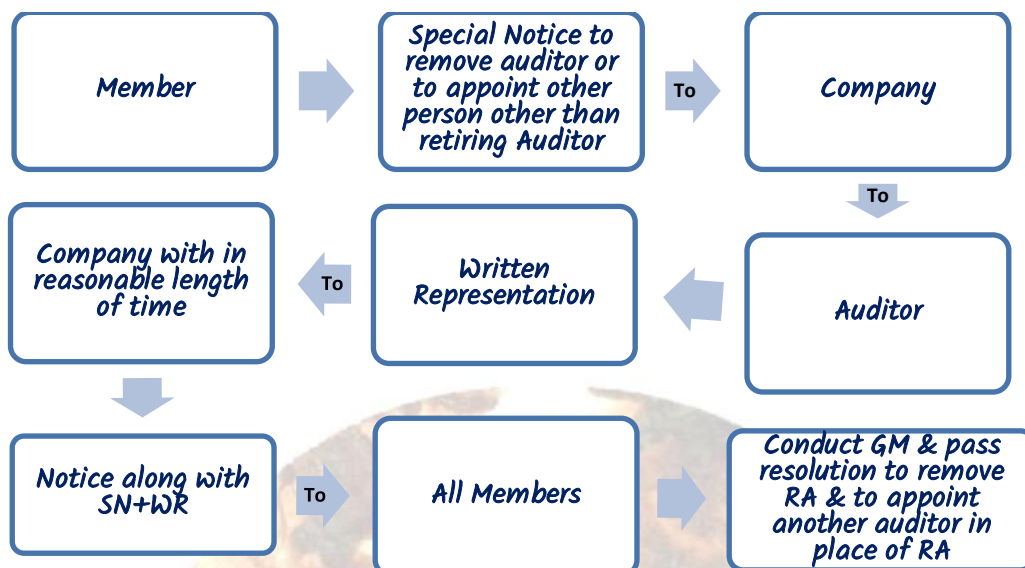


140(4):

Procedure for removal of auditor after expiry of his term.

or

Procedure for appointing other person in place of retiring Auditor.



- If WR not send to members either by co. default or it received too late.
- It should be read out at GM.
- File such WR with ROC
- If the Tribunal is satisfied on an application either of the company or of any other aggrieved person that the rights conferred by section 140(4) of the Companies Act, 2013 are being abused by the auditor, then, the copy of the representation may not be sent and the representation need not be read out at the meeting.

140(5) Direction by Tribunal in case auditor acted in a fraudulent manner

Tribunal either *suo moto* / on an application made to it by the Central Government / by any person concerned

Tribunal satisfied that Auditor acted directly or indirectly acted in a fraudulent manner or abetted or colluded in any fraud by, or in relation to, the company or its directors or officers

Within 15 days
Tribunal may, by order, direct the company to change its auditors

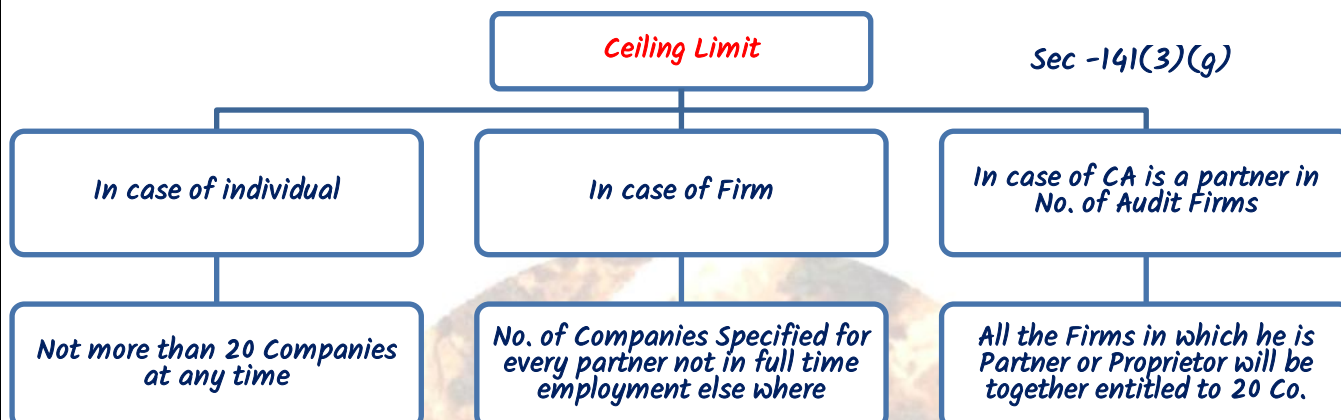
CG may appoint another auditor in his place

Auditor shall not be eligible to be appointed as an auditor of any company for a period of 5 years from the date of passing of the order and the auditor shall also be liable for action under section 447.

In case of a firm, the liability shall be of the firm and that of every partner or partners who acted in a fraudulent manner or abetted or colluded in any fraud by, or in relation to, the company or its director or officers.

THE END

CONCEPT-9:- CEILING LIMIT



CEILING LIMITS EXCLUDES:

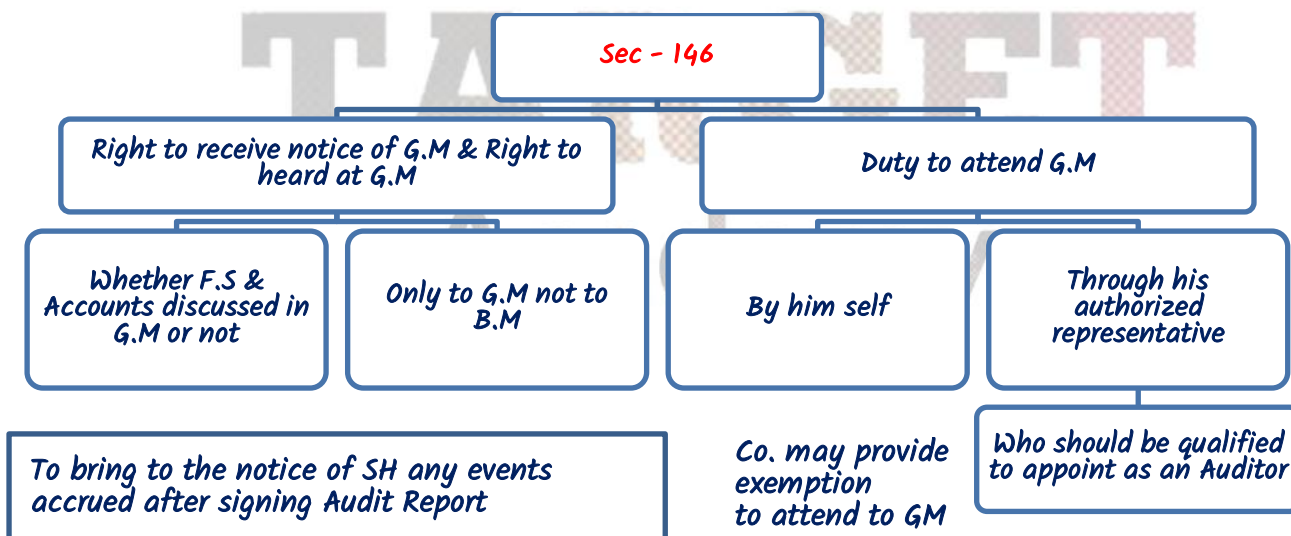
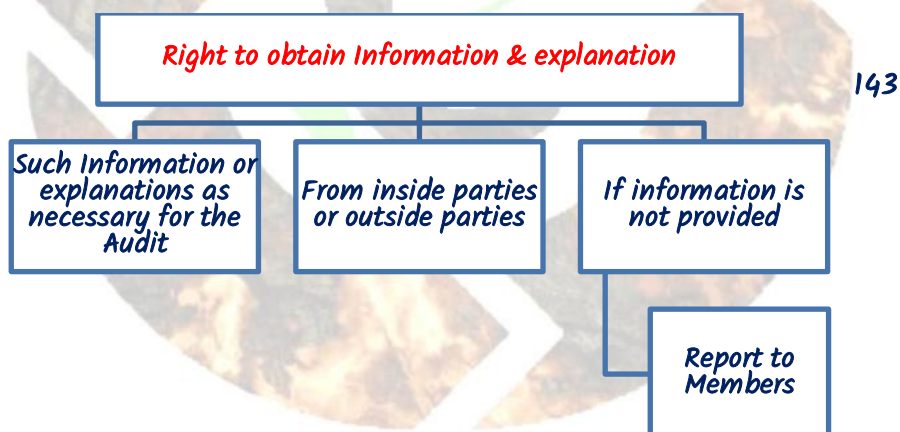
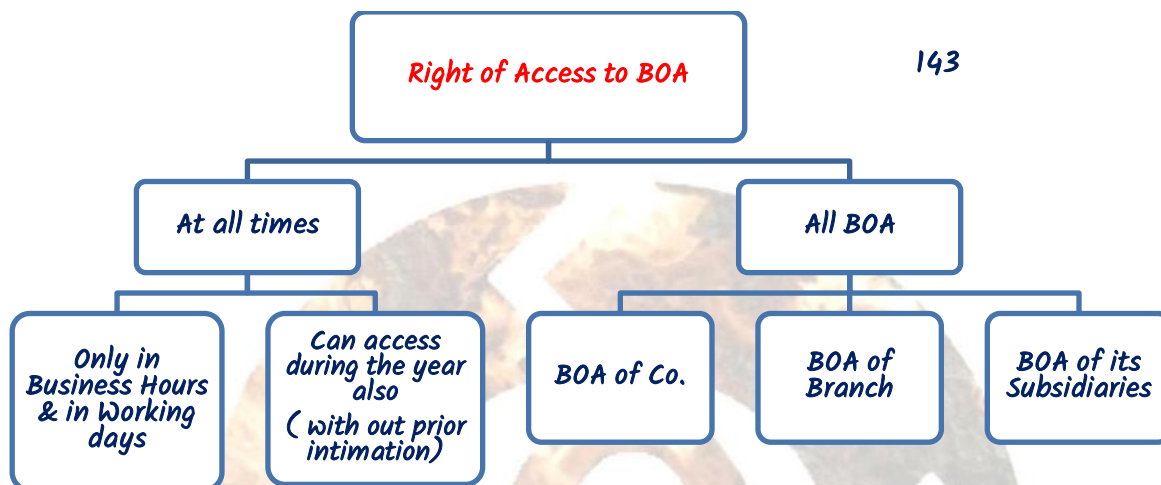
- OPC
- Dormant Co.
- Small Co.
- Private limited Co. having share capital less than 100 cr.

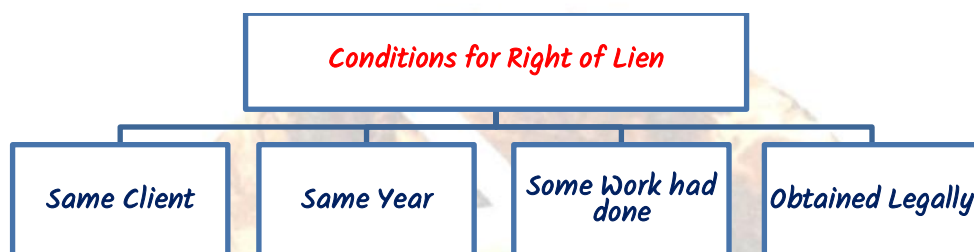
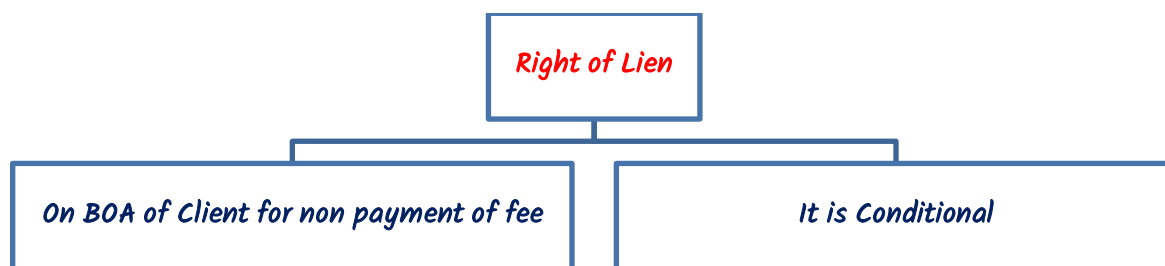
TARGET
Academy

THE END

CONCEPT-10:- RIGHTS OF AN AUDITOR

RIGHTS / POWERS OF AUDITOR (Sec - 143):





R.D. SAXENA V/S BALARAM PRASAD SHARMA:

- No profession can exercise right of lien.

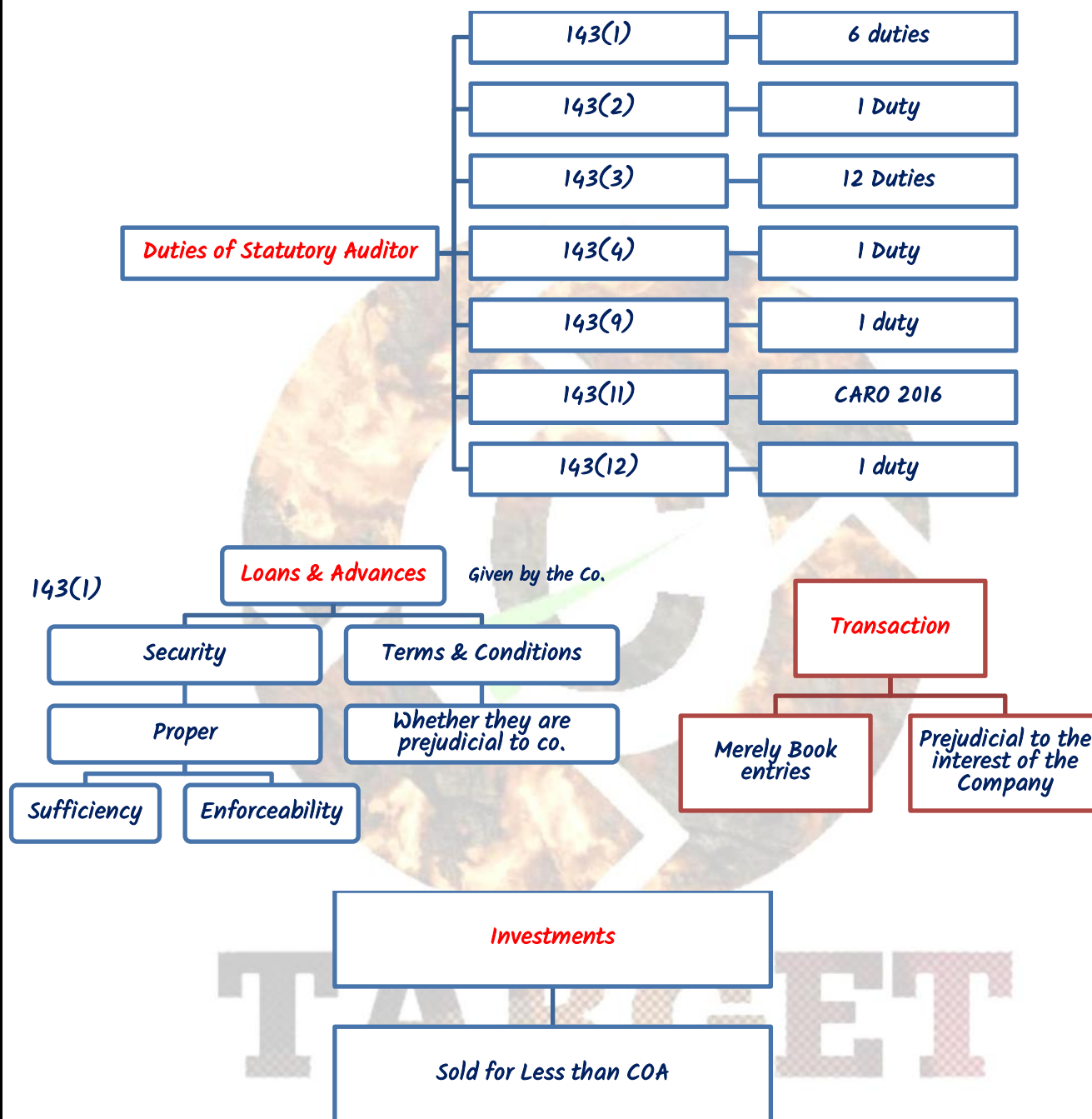
143



Normal Audit	Propriety element
T&F View	Beyond T&F View
No questioning	Questioning of transaction

THE END

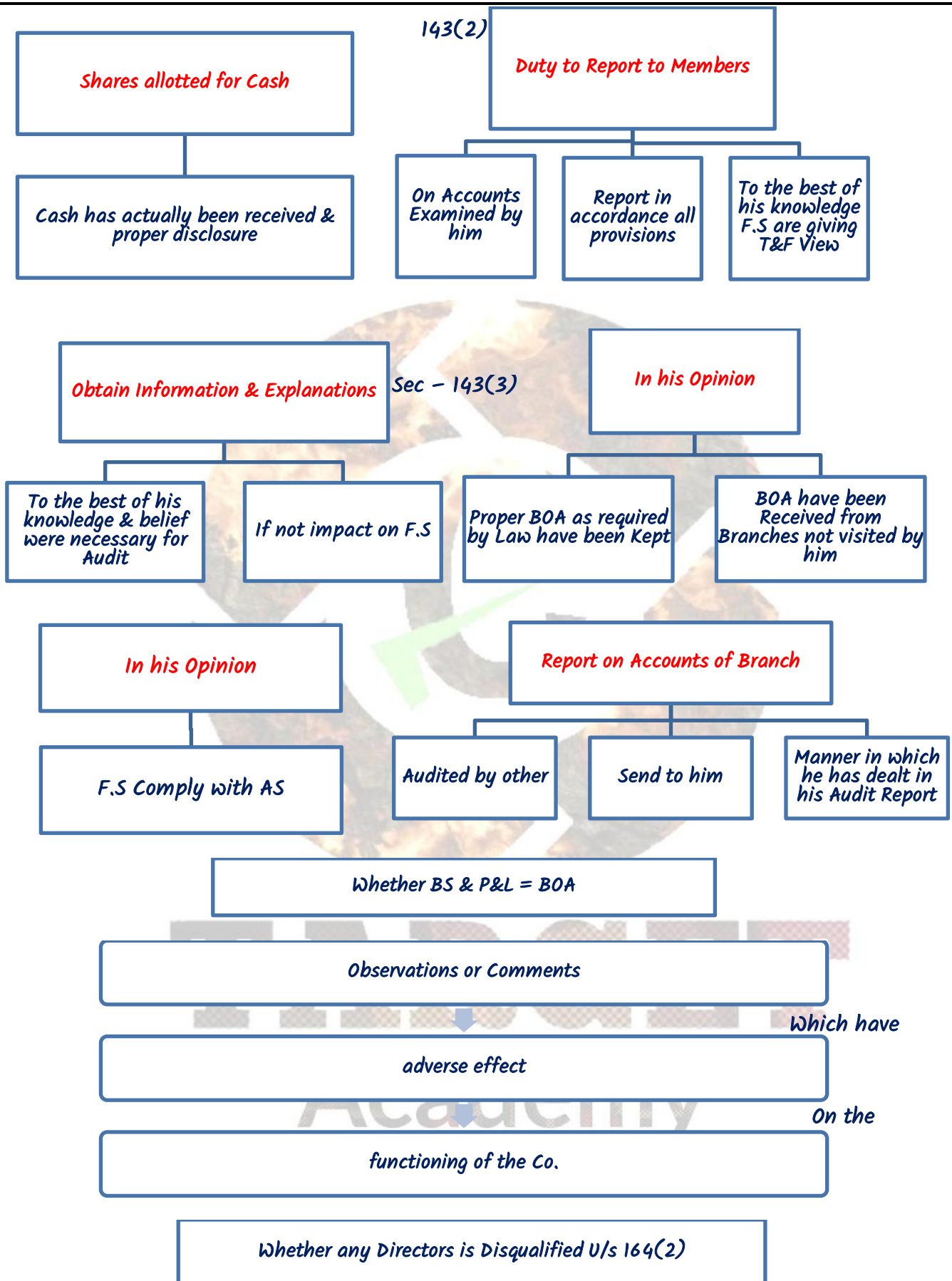
CONCEPT-11:- DUTIES OF AN AUDITOR

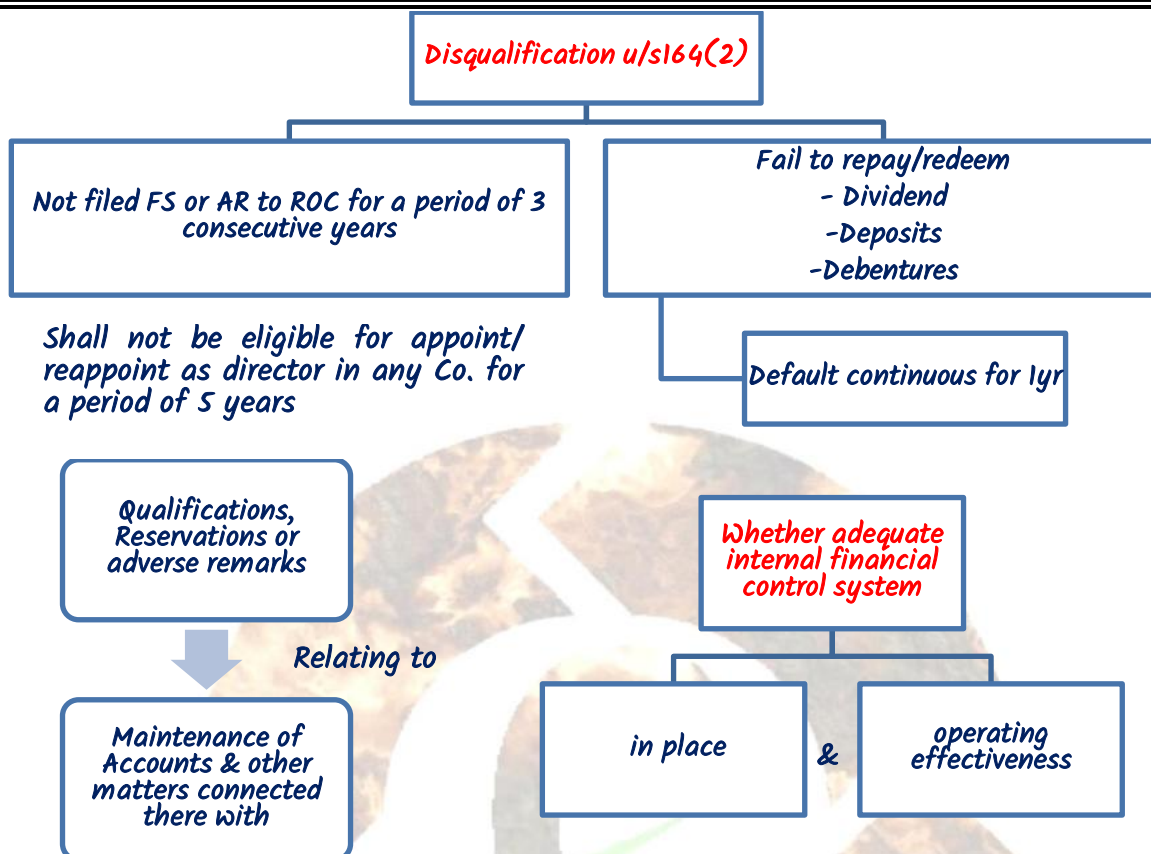


EXCEPTION:

- Banking & investment co.







EXCEPTION:

- Private Company
 - OPC
 - Small Co.
 - TO < 50 cr, Borrowings < 25 cr.

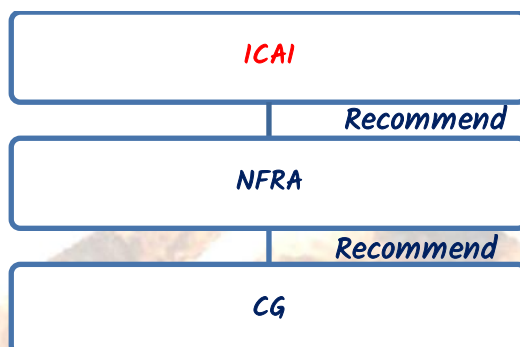


Whether the Co. has made provisions as per AS & Law

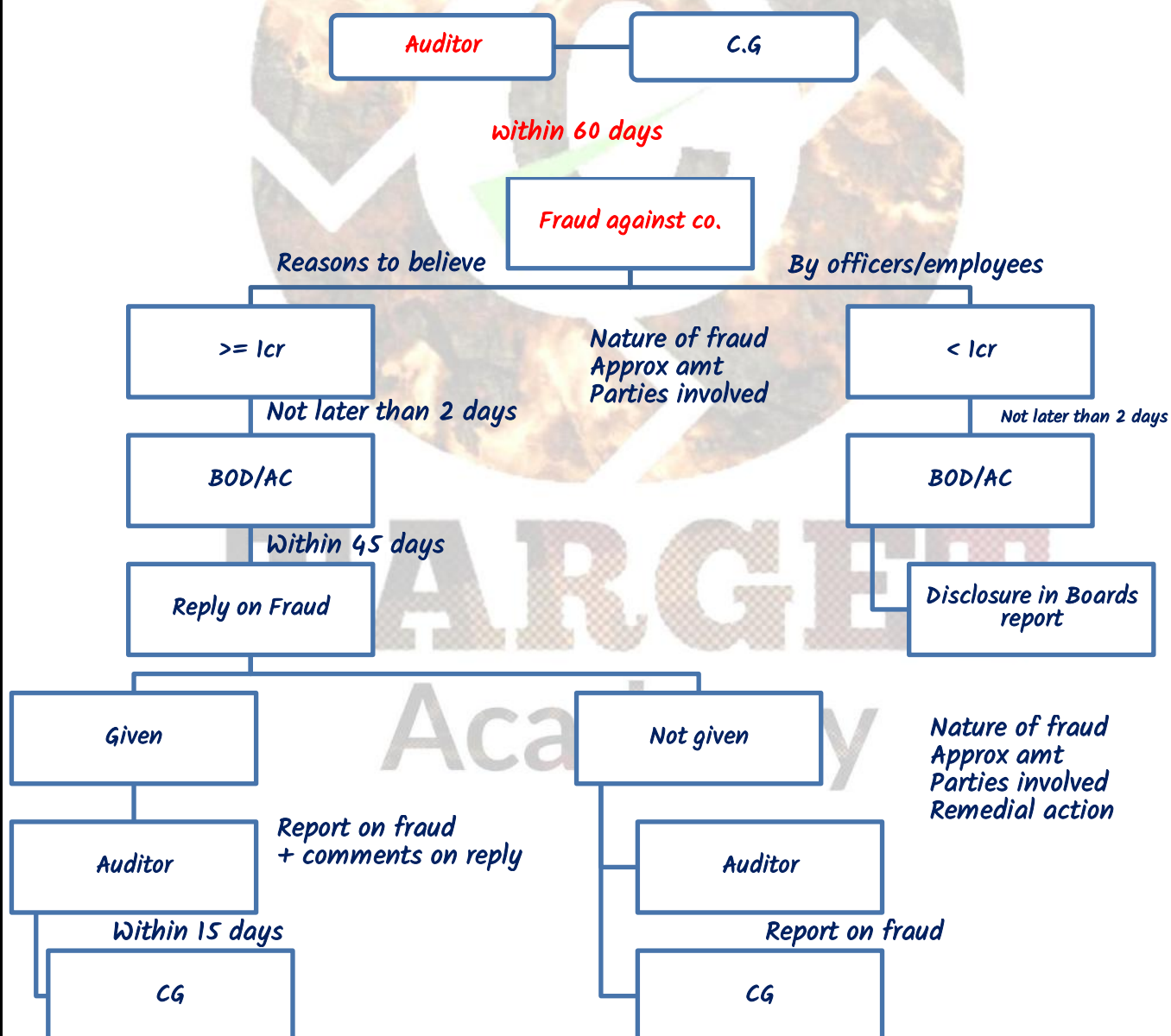
Whether there is any delay in transferring Fund to IEPF

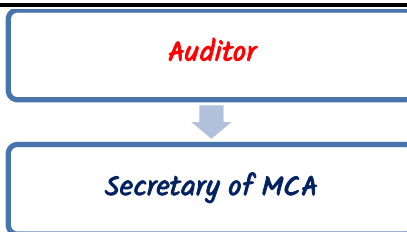
Duty to state the reasons for qualification or negative report-143(4)

Duty to comply with SA prescribed by CG143(9)



DUTY TO REPORT ON FRAUD 143(12):





- Registered post
Or e-mail
 - Letter head
- ADT-4

- Non Compliance with Sec-143(12).
- Punishment with Fine- 11akh to 25 lakh.



TARGET
Academy

THE END

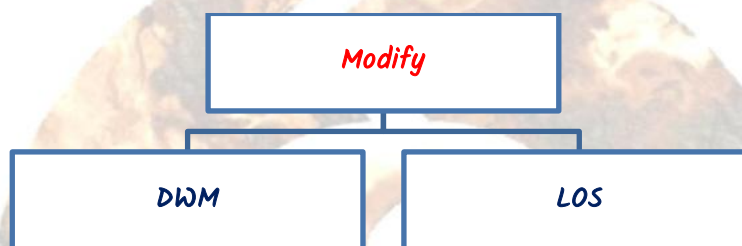
CONCEPT-12:- MODIFICATIONS IN AUDIT REPORT

SA-705:

- Modifications to the opinion in the Independence Auditors Report

CLEAN OPINION/UNQUALIFIED/UNMODIFIED:

- No Material misstatements
- F.S are showing T&F View(i.e. prepared in accordance with FRFW)



DWM:

- Performed Audit procedures
- Obtained S&A AE w.r.t material misstatements
- Asked the mng to rectify the misstatements but they didn't rectify.
- E.g. closing stock overvalued, asked mng to rectify but they dint rectify.
- Provision for BD not created, asked mng to create provision but they dint create

LOS

Unable to perform audit procedures.
Not obtained S&A AE.

Auditor

Due to

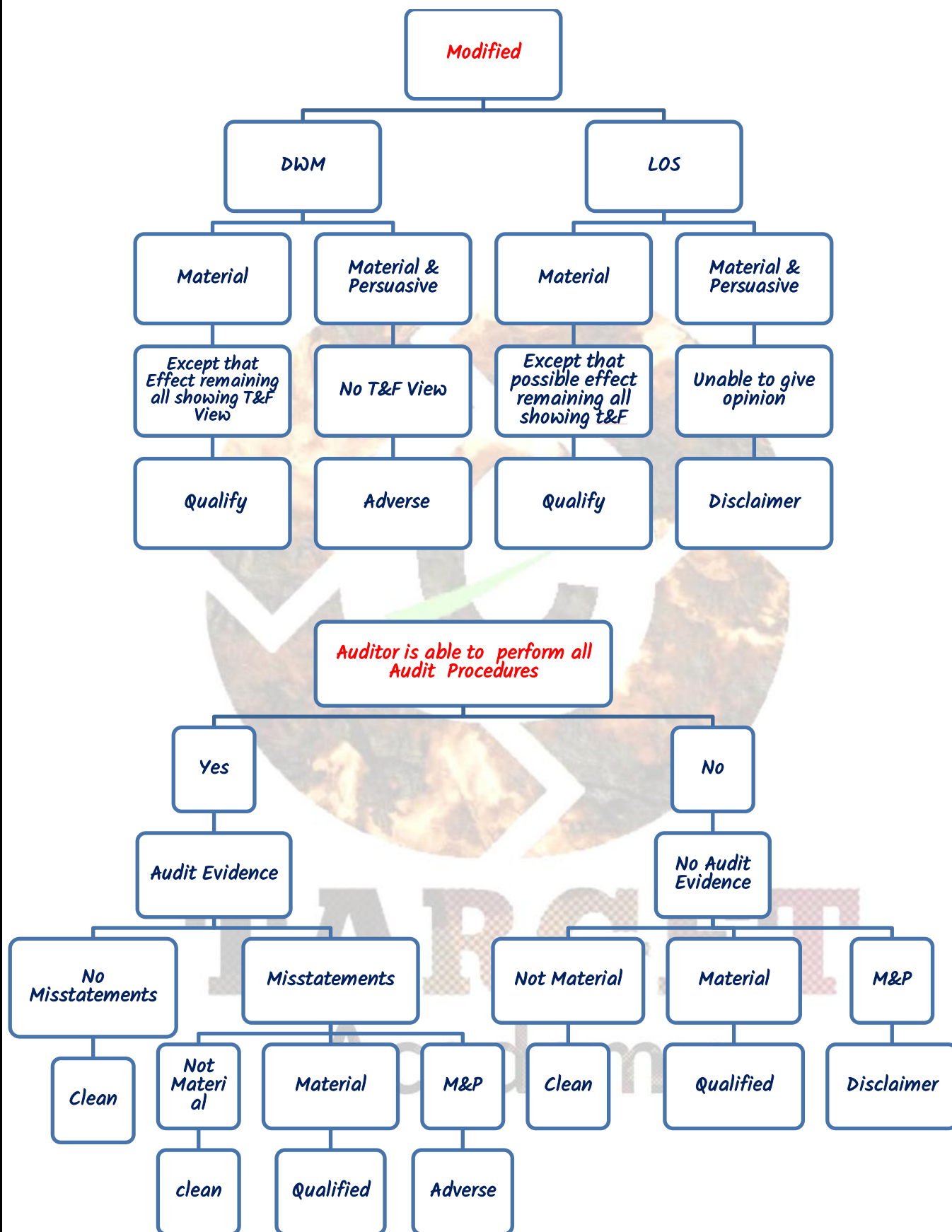
Management

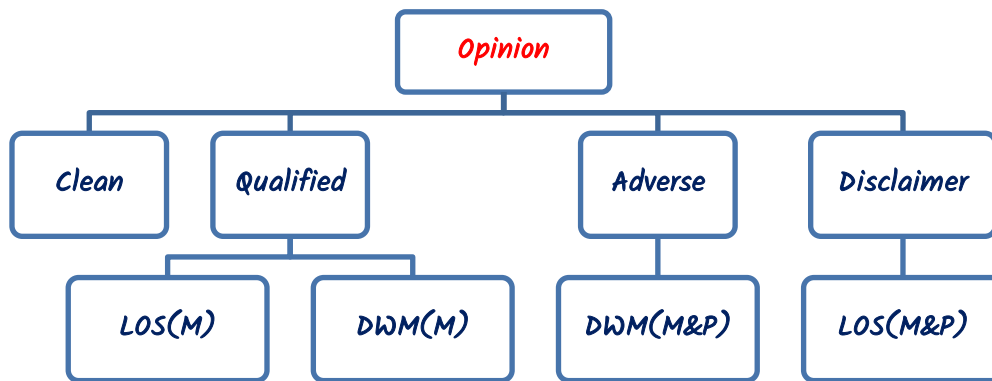
Third party

Auditor didn't
attend to stock
verification

Mng not allowing
auditor for stock
verification

No response from TP
w.r.t external
confirmation





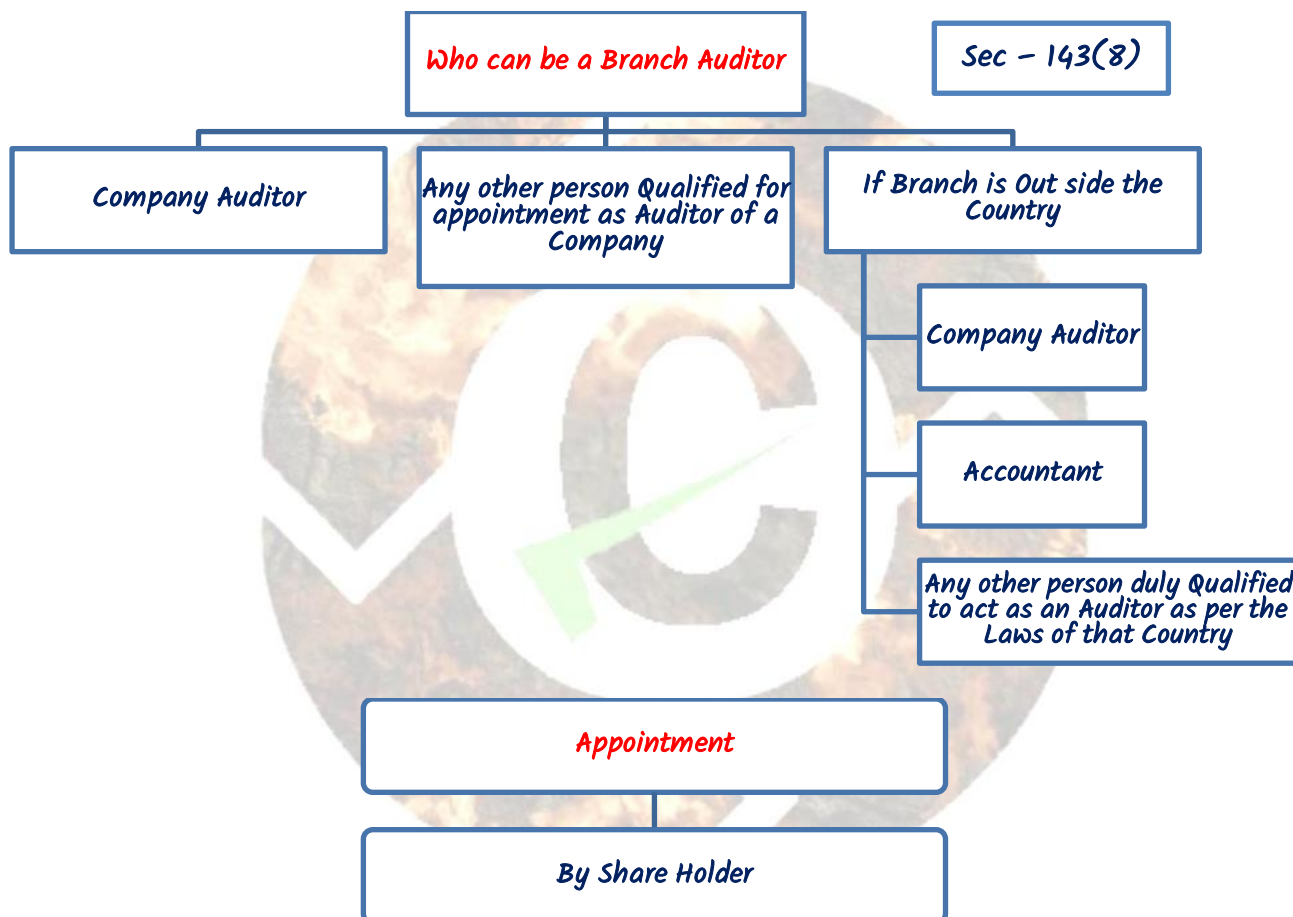
TARGET
Academy

THE END

CONCEPT-13:- BRANCH AUDITOR

BRANCH AUDIT:

- Branch Auditor: Person who Audits the Accounts of Branch
- Relevant Standard: SA-600



- SH can delegate his power of appointment of Branch Auditor to BOD



SEC-143(12):

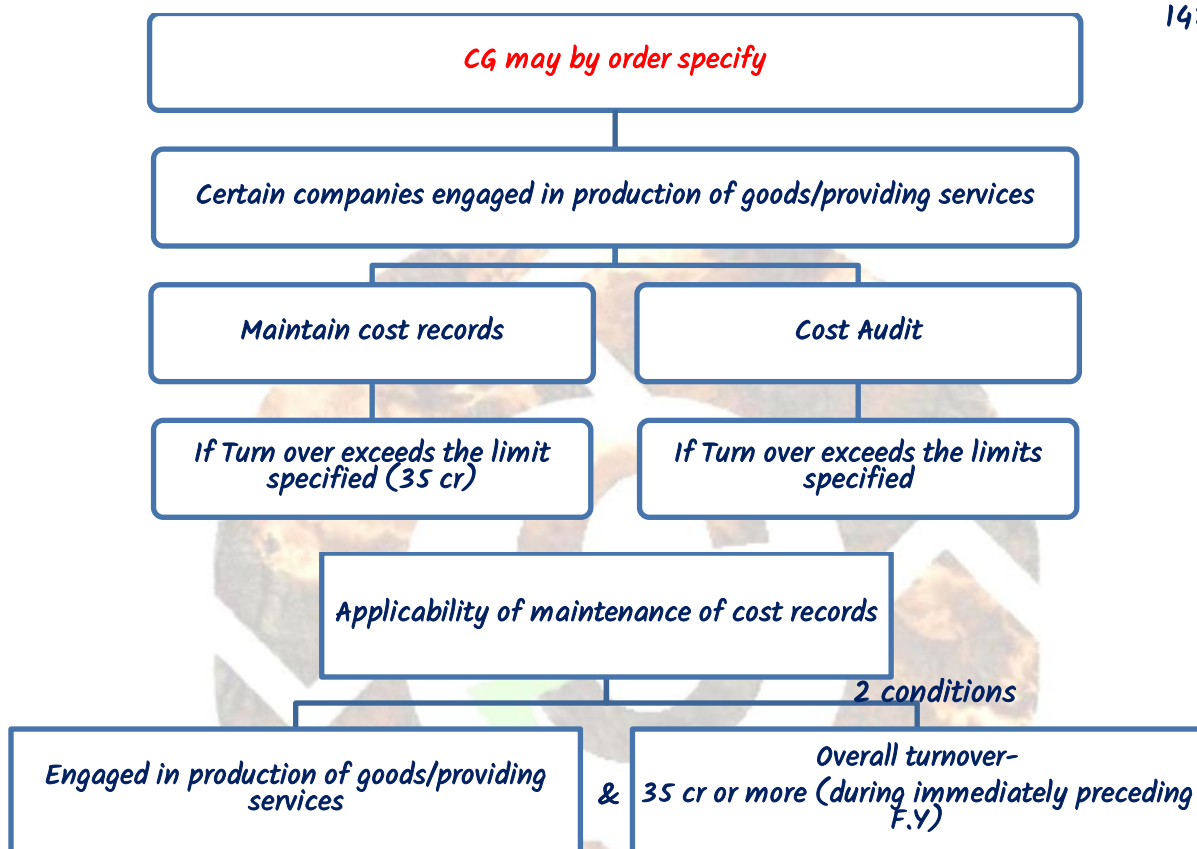
- Duty to report on fraud to CG
- This duty is also applicable to branch auditor with concerned to branch.
- Branch auditor V/s Ceiling limits

THE END

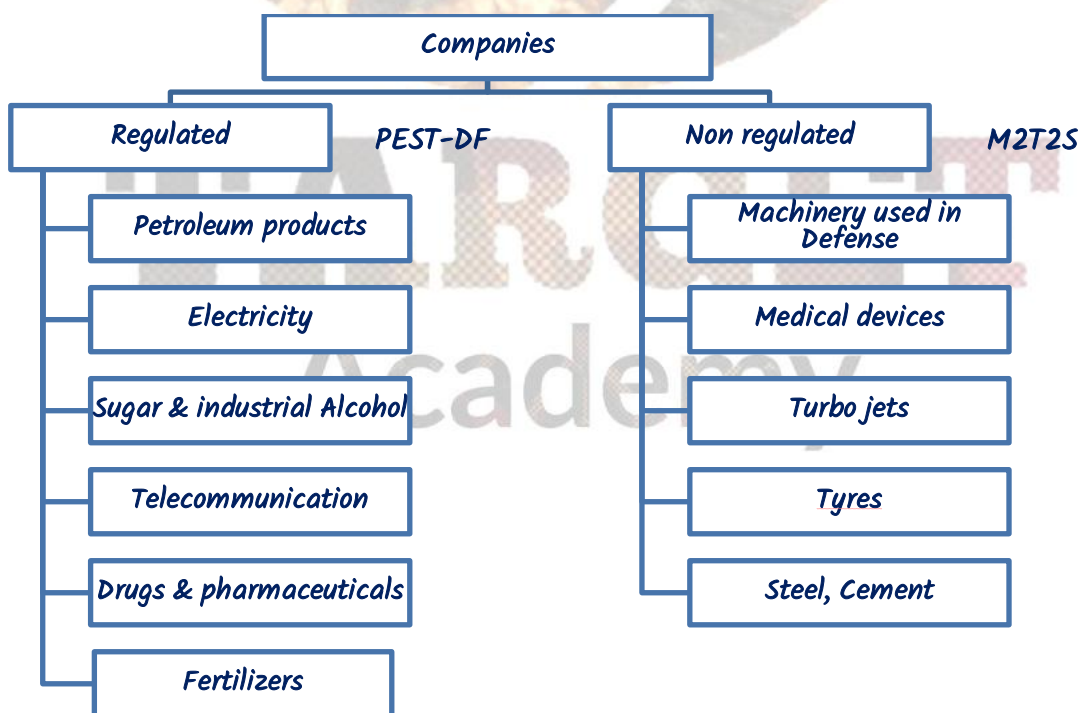
CONCEPT-14:- COST AUDIT

COST AUDIT (SEC-148):

148

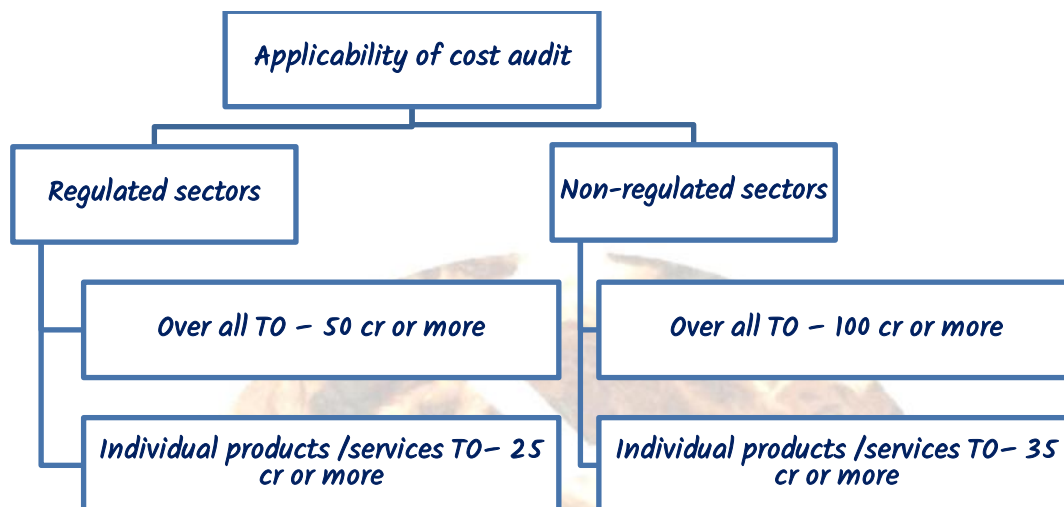


Form of maintenance – CRA-I



MAINTENANCE OF COST RECORDS:

Exception:- Micro, small co. under Micro, small & Medium development Act, 2006.



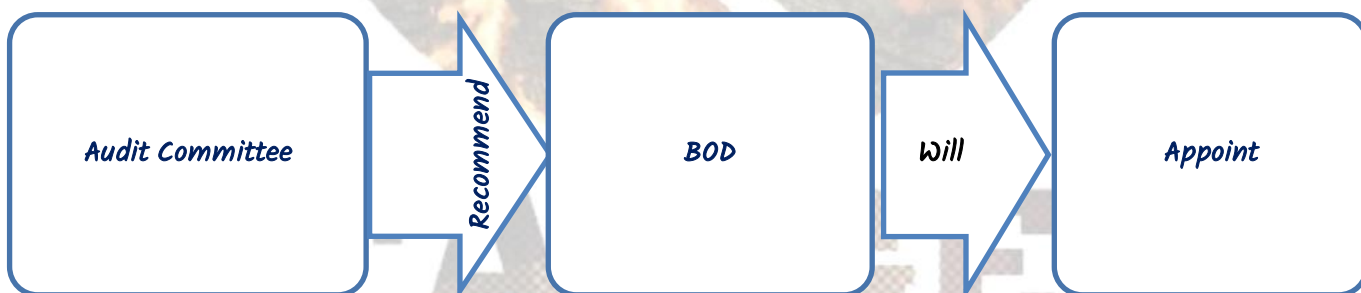
NON APPLICABILITY:

- Revenue from exports exceeds 75% of total Turn over.
- Operating from SEZ.

WHO CAN BE THE COST AUDITOR:

- CMA- (In practice)

APPOINTING AUTHORITY:

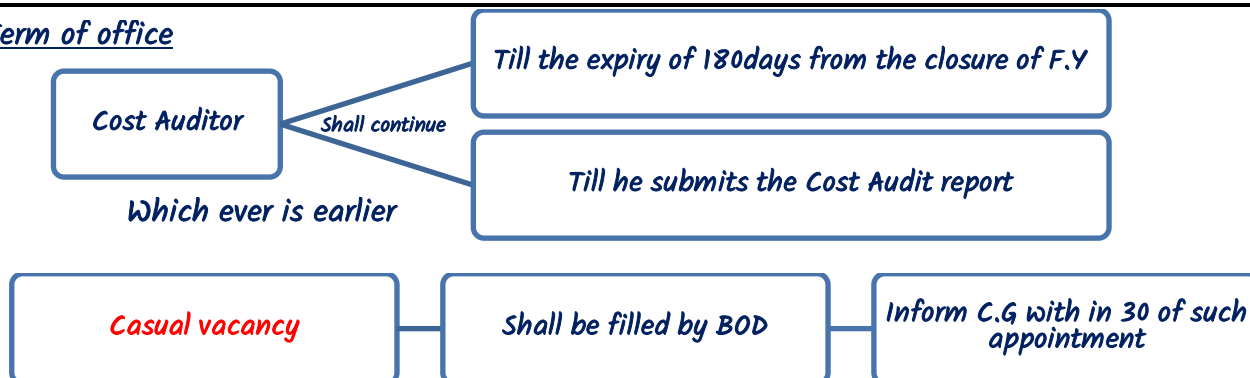


PROCEDURE OF APPOINTMENT OF COST AUDITOR:



CRA-2

Term of office



REMUNERATION:



QUALIFICATIONS & DISQUALIFICATIONS:

- Same as Company Auditor

REPORTING:



- Duty to report on fraud u/s 143(12) is also applicable to Cost Auditor

PRECAUTIONS TAKEN IN CO. ACT, 2013 TO PROTECT THE IN DEPENDENCE OF STATUTORY AUDITOR:

- Disqualifications.
- Ceiling limits.
- Provision w.r.t appointment, Re- appointment & Removal.
- SR in case of appointment.
- Power to qualify his report.
- Rotation.
- AC

THE END

CONCEPT-15:- CARO-2020

THE COMPANIES (AUDITOR'S REPORT) ORDER, 2020 [CARO, 2020]

- Applicable from FY 2021-22
- Additional reporting requirement as per Sec 143 (11) of Companies Act, 2013
- Given as annexure to Audit report.

Applicability of CARO:

The Order applies to every Company including foreign company **except:**

1. Banking Company
2. Insurance Company
3. secs Co.
4. OPC
5. Small Co
6. Private Company:
 - i. which is not Subsidiary (or) holding of Public Co
 - ii. PUSC+R&S $\leq$ 1cr (at B/S date)
 - iii. Borrowings $\leq$ 1cr (at any point of time during the year)
 - iv. Turnover For the year $\leq$ 10 Cr (Including revenue from discontinuing operations)

ADDITIONAL POINTS:

1. In the case of holding and subsidiary companies:
 - i. The limits for applicability of CARO should be computed on the basis of standalone financial statements of holding and subsidiary companies separately but not on the basis of consolidated financial statements.
 - ii. CARO, 2020 reporting shall not apply to the Auditor's Report on Consolidated Financial Statements "EXCEPT Clause 21".
2. In the case of companies having branches:
 - i. The limits for the purpose of Applicability of CARO shall be computed from the entire company's view including the amounts from all the branches but not w.r.t each branch wise.
 - ii. Once it is applicable to the company as a whole, then each and every branch of the company will be covered under CARO. Therefore, all the branch auditors of the company are also required to report on these 16 matters in their branch audit report of the concerned branches.

MATTERS TO BE INCLUDED IN AUDITOR'S REPORT:

The auditor's report on the accounts of a company to which this Order applies shall include a statement on the following matters, namely:

CLAUSE1: FIXED ASSETS

- a) **FIXED ASSET REGISTER:** Whether the company is maintaining proper records showing full particulars including:
- Quantitative details of PPE and Intangible Assets (Fixed Assets) and
 - Situation of PPE.
- b) **PHYSICAL VERIFICATION:**
- Whether these fixed assets have been physically verified by the management at reasonable intervals.
 - Whether any material discrepancies were noticed on such verification and if so, whether the same have been properly dealt with in the books of accounts.
- c) **IMMOVABLE PROPERTY:**
- Whether the title of immovable properties is held in the name of the company. If not, provide the details of the same:
 - Description of the Property
 - Gross Carrying Value
 - Held in Name of (I.e., Promoter or director or employees)
 - Reason for Not being held in name of Company.
- d) **REVALUATION (NEWLY ADDED IN 2020):** Whether the company has revalued its Property, Plant and Equipment (including Right of Use assets) or intangible assets or both during the year and, if so:
- Whether the revaluation is based on the valuation by a Registered Valuer.
 - Specify the amount of change, if change is 10% or more in the aggregate of the net carrying value of each class of Property, Plant and Equipment or intangible assets.
- e) **DISCLOSURE OF BENAMI TRANSACTIONS (NEWLY ADDED IN 2020):**
- Whether any proceedings have been initiated or are pending against the company for holding any benami property under the Benami Transactions (Prohibition) Act, 1988 (45 of 1988) and rules made there under, if so, whether the company has appropriately disclosed the details in its financial statements.

CLAUSE-2: INVENTORIES

- a. **PHYSICAL VERIFICATION:**
- Whether physical verification of inventory has been conducted at reasonable intervals by the management.
 - Whether any discrepancies of 10% or more in the aggregate for each class of inventory were noticed and if so, whether they have been properly dealt with in the books of account.

b. WORKING CAPITAL LOANS (NEWLY ADDED IN 2020):

- i. Whether during any point of time of the year, the company has been sanctioned working capital limits in excess of five crore rupees, in aggregate, from banks or financial institutions on the basis of security of current assets;
- ii. Whether the quarterly returns or statements filed by the company with such banks or financial institutions are in agreement with the books of account of the Company, if not, give details.

CLAUSE-3: INVESTMENTS, GUARANTEE, SECURITY, LOANS OR ADVANCES TO COMPANIES, FIRMS, LLP's OR ANY OTHER PARTIES

a) **APPLICABILITY:** Whether during the year the company has provided loans or provided advances in the nature of loans, or stood guarantee, or provided security to any other entity [not applicable to companies whose principal business is to give loans], if so, indicate:

- **TO RELATED PARTIES:** The aggregate amount during the year, and balance outstanding at the balance sheet date with respect to such loans or advances and guarantees or security to subsidiaries, joint ventures and associates.
- **TO UNRELATED PARTIES:** The aggregate amount during the year, and balance outstanding at the balance sheet date with respect to such loans or advances and guarantees or security to parties OTHER THAN subsidiaries, joint ventures and associates.

b) **TERMS AND CONDITIONS:** Whether the investments made, guarantees provided, security given and the terms and conditions of the grant of all loans and advances in the nature of loans and guarantees provided are not prejudicial to the company's interest.

c) **REPAYMENT REGULARITY:** In respect of loans and advances in the nature of loans, whether the schedule of repayment of principal and payment of interest has been stipulated and whether the repayments or receipts are regular.

d) **OVERDUE > 90 DAYS:** If the amount is overdue, state the total amount overdue for more than ninety days, and whether reasonable steps have been taken by the company for recovery of the principal and interest.

e) RESCHEDULING OR EXTENTION OF OVERDUE LOANS (NEWLY ADDED IN 2020):

Whether any loan or advance in the nature of loan granted which has fallen due during the year, has been renewed or extended or fresh loans granted to settle the over dues of existing loans given to the same parties, if so,

- Specify the aggregate amount of such dues renewed or extended or settled by fresh loans and
- The percentage of the aggregate to the total loans or advances in the nature of loans granted during the year [not applicable to companies whose principal business is to give loans].

f) **DEMAND LOANS WITHOUT REPAYMENT PERIOD:** Whether the company has granted any loans or advances in the nature of loans either repayable on demand or without specifying any terms or period of repayment, if so,

- Specify the aggregate amount, percentage thereof to the total loans granted.

- Aggregate amount of loans granted to Promoters, related parties as defined in clause (76) of section 2 of the Companies Act, 2013.

CLAUSE-4: OTHER LOANS, INVESTMENTS, GUARANTEES MADE BY COMPANY

- In respect of loans, Investments, Guarantees, and securities provided by company, whether provisions of section 185 & 186 have been complied with? If not, provide the details thereof.

CLAUSE-5: DEPOSITS

- In case the company has accepted deposits from the public, a. Verify the compliance with the following:
 - 1) The provisions of Sections 73 to 76 of the Co.'s Act, 2013 or
 - 2) Whether the directives issued by the RBI and
 - 3) An order passed by CLB or any court or any other Tribunal, if any. b. If there is any Non-compliance, the nature of contraventions should be stated.

CLAUSE-6: COST RECORDS

- a) Whether maintenance of cost records has been prescribed by the Central Government under sub section (1) of section 148 of the Co.'s Act, 2013 is applicable.
- b) If applicable, whether such accounts and records have made and maintained.

CLAUSE-7: STATUTORY DUES

- a) **UNDISPUTED DUES:**
 - 1) Is the company regular in depositing undisputed statutory dues e.g. provident fund, ESI, Income Tax, service tax and any other statutory dues with the appropriate authorities, and
 - 2) If not, the extent of the arrears of outstanding statutory dues as at the last day of the financial year concerned for a period of more than six months from the date, they became payable, shall be indicated by the auditor. (Only Information and not opinion)
- b) **DISPUTED DUES:** In case dues have not been deposited on account of any dispute, the auditor shall indicate:
 1. The amounts involved in dispute and
 2. The forum where dispute is pending. Note: A mere representation to the concerned department shall not constitute a dispute.

CLAUSE-8: DISCOVERY OF UNDISCLOSED INCOME

Whether any transactions not recorded in the books of account have been surrendered or disclosed as income during the year in the tax assessments under the Income Tax Act, 1961 (43 of 1961), if so, whether the previously unrecorded income has been properly recorded in the books of account during the year. (Author Note: May Be treated as prior period items in the accounting records)

CLAUSE-9: DEFAULT IN REPAYMENT OF DUES

a) LENDER WISE DEFAULT:

- 1) Whether the company has defaulted in repayment of borrowings of loans to a financial institution, Bank, Debenture holders or Governments.
- 2) If so, the period and amount of default to be reported each lender wise in the following Format:

- i. Nature of Borrowing
- ii. Name of the lender
- iii. Amount Not Paid on Due Date
- iv. Whether Principal or Interest or both
- v. Delay in Days
- vi. Remarks, if any.

b) WILFUL DEFAULTER: Whether the company is a declared willful defaulter by any bank or financial institution or other lender.

c) PURPOSE OF TERM LOANS: Whether term loans were applied for the purpose for which the loans were obtained; if not, the amount of loan so diverted and the purpose for which it is used may be reported.

d) ST LOAN FOR LT PURPOSE: Whether funds raised on short term basis have been utilised for long term purposes, if yes, the nature and amount to be indicated.

e) LOANS TAKEN TO MEET SUBSIDIARY COMPANY NEEDS:

Whether the company has taken any funds from any entity or person on account of or to meet the obligations of its subsidiaries, associates or joint ventures, if so, details thereof with nature of such transactions and the amount in each case.

f) LOAN AGAINST PLEDGE OF SECURITIES OF SUBSIDIARIES:

- 1) Whether the company has raised any loans during the year "ON PLEDGE OF SECURITIES HELD IN SUBSIDIARY/ASSOCIATE/JOINT VENTURE and if So, Give details thereof
- 2) Also report whether the company has defaulted in repayment of such loans.

CLAUSE-10: END USE OF FUNDS RAISED

a) IPO / FPO:

- 1) Whether the money raised by way of initial or further public offer (including debt instruments) were utilized for the purposes for which those are raised.
- 2) If not, the details along with the defaults, delays & subsequent rectifications, if any, to be reported.

b) PREFERENTIAL ALLOTMENT:

- 1) Whether the company has made any preferential allotment or private placement of shares or fully or partly convertible debentures during the year under review &
- 2) If so, verify the following:
 - i. Compliance with section 42 of the act. And
 - ii. The amount raised have been used for the purpose for which they are raised.

3) If not provide the details in respect of the amount involved & nature of non-compliance

CLAUSE-II: REPORTING OF FRAUDS

a) NOTICED OR REPORTED:

- 1) Whether any fraud by the company or on the company by its officers or employees has been noticed or reported during the year.
- 2) If yes, the nature and the amount involved is to be indicated.

- b) **SEC. 143(12):** Whether any report under sub-section (12) of section 143 of the Companies Act has been filed by the auditors in Form ADT-4 as prescribed under rule 13 of Companies (Audit and Auditors) Rules, 2014 with the Central Government.
- c) **WHISTLE BLOWER COMPLAINTS:** Whether the auditor has considered whistle- blower complaints, if any, received during the year by the company.

CLAUSE-12: NIDHI COMPANY

- a) Whether Nidhi Company has complied with the net owned funds (i.e., net worth) to deposits in the ratio of 1:20 to meet out the liability. i.e., for every one rupee of net owned funds, Nidhi company cannot accept more than 20 rupees of deposits.
- b) Whether Nidhi Company is maintaining 10% Unencumbered term deposits as specified in Nidhi Rules, 2014 to meet out the liability.
- c) Whether there has been any default in payment of interest on deposits or repayment thereof for any period and if so, the details thereof.

CLAUSE-13: RELATED PARTY TRANSACTION

Whether all transaction with related parties is,

- a) In compliance with section 177 & 188 where applicable, &
- b) Details have been disclosed in the financial statements etc., as required by applicable accounting standards.

CLAUSE-14: INTERNAL AUDIT SYSTEM

- a) Whether the company has an internal audit system commensurate with the size and nature of its business.
- b) Whether the reports of the Internal Auditors for the period under audit were considered by the statutory auditor.

CLAUSE-15: NON-CASH TRANSACTION

Whether Company has entered into any Non-Cash Transactions with directors & if so provisions of section 192 have been complied with.

CLAUSE-16: NON-BANKING FINANCIAL INSTITUTION

- a) **45IA OF RBI ACT:** Whether the company is required to be registered under section 45-IA of Reserve Bank of India Act 1934, and If so, whether the registration has been obtained.
- b) **NBFC ACTIVITIES (NEW):** Whether the company has conducted any Non-Banking Financial or Housing Finance activities without a valid Certificate of Registration (CoR) from the Reserve Bank of India as per the Reserve Bank of India Act, 1934.
- c) **CORE INVESTMENT COMPANY (NEW):**
 1. Whether the company is a Core Investment Company (CIC) as defined in the regulations made by the Reserve Bank of India, if so,
 2. Whether it continues to fulfil the criteria of a CIC, and in case the company is an exempted or unregistered CIC, whether it continues to fulfil such criteria.
 3. Whether the Group has more than one CIC as part of the Group, if yes, indicate the number of CICs which are part of the Group.

CLAUSE-17: CASH LOSSES

Whether the company has incurred cash losses in the financial year and in the immediately preceding financial year, if so, state the amount of cash losses.

CLAUSE-18: RESIGNATION OF AUDITORS

- a) Whether there has been any resignation of the statutory auditors during the year, if so,
- b) Whether the auditor has taken into consideration the issues, objections or concerns raised by the outgoing auditors.

CLAUSE-19: MATERIAL UNCERTAINTY

- On the basis of the financial ratios, ageing and expected dates of realisation of financial assets and payment of financial liabilities, other information accompanying the financial statements, the auditor's knowledge of the Board of Directors and management plans, Whether the auditor is of the opinion that no material uncertainty exists as on the date of the audit report that company is capable of meeting its liabilities existing at the date of balance sheet as and when they fall due within a period of one year from the balance sheet date.

CLAUSE-20: CORPORATE SOCIAL RESPONSIBILITY FUND

- a) Whether, in respect of other than ongoing projects, the company has transferred unspent amount to a Fund specified in Schedule VII to the Companies Act within a period of six months of the expiry of the financial year in compliance with second proviso to sub-section (5) of section 135 of the said Act.
- b) Whether any amount remaining unspent under sub-section (5) of section 135 of the Companies Act, pursuant to any ongoing project, has been transferred to special account in compliance with the provision of sub-section (6) of section 135.

CLAUSE-21: MODIFIED OPINION (CARO) IN OTHER GROUP COMPANIES

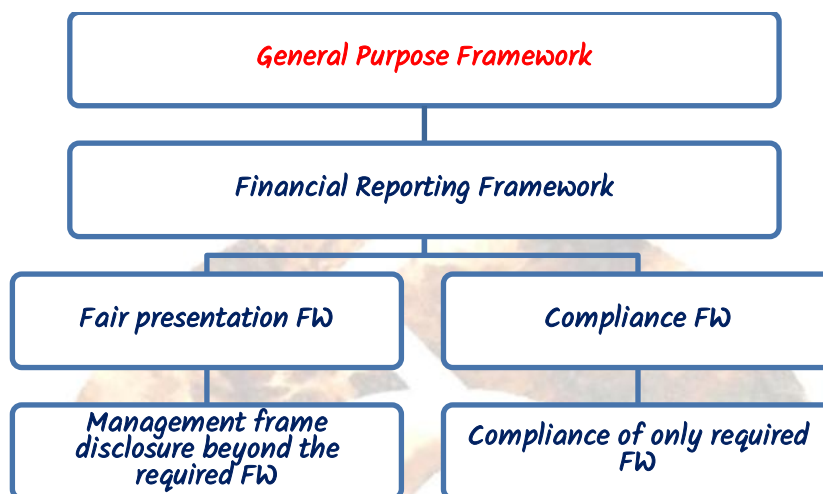
- a) Whether there have been any qualifications or adverse remarks by the respective auditors in the Companies (Auditor's Report) Order (CARO) reports of the companies included in the consolidated financial statements,
- b) If yes, indicate the details of the companies and the paragraph numbers of the CARO report containing the qualifications or adverse remarks.

THE END

CONCEPT-16: FORMAT OF AUDIT REPORT

SA - 700

- Forming an opinion and reporting on Financial Statements



BASIC ELEMENTS OF AUDIT REPORT:

- 1. Title : Independent Auditor's Report
- 2. Addressee : Members of Company.
- 3. Auditor's Opinion.
 - Introduction Para
 - Specify the entity whose F.S has been Audited.
 - State the F.S has been Audited.
 - Identify the title of each document comprises of F.S.
 - Specify the date & period of each document of F.S.
 - Expression of Opinion
 - In case of Fair presentation frame work – Present fairly
 - In case of Compliance Frame Work – give T&F View
- Basis for Opinion
 - Audit was conducted in accordance with SA.
 - Complied Ethical requirements.
 - Obtained S&A A.E.
 - Responsibilities of Auditor.

- 5. Going concern
 - Events or conditions that may cast about GC Assumption as per SA 570.
- 6. Key Audit matters.
 - Described in SA 701.
- 7. Responsibilities of management for the FS
 - Preparation of FS in accordance of FRFW.
 - Designing & Implementation of ICS.
 - Assessing entities ability of continue GC Assumption.
 - DRS if required u/s 134(5).
- 8. Auditors responsibility for Audit of FS
 - SA 200.
- 9. Report on other legal and Regulatory requirements
 - Duties u/s 143(3)
 - CARO matters.
- 10. Signature.
- 11. Date.
- 12. Place.

CONSEQUENCES ON SA 700, 705, 706, 570:

SA 700	• KAM paragraph will include
SA 705	• Matters give rise to modified opinion • Only reference in KAM
SA 706	• Matters disclosed in EMP/ OMP • No KAM
SA 570	• Events or conditions that cast doubt on GC assumption. • Only reference on KAM

THE END

CONCEPT-17: EMP & OMP**SA - 706:**

Emphasis of matter paragraph & other matter paragraph in the independent auditors report

EMPHASIS OF MATTER PARAGRAPH:

- Location : Immediately after the Basis for Opinion paragraph or after KAM Paragraph if any
- Heading : Emphasis of matter paragraph.
- Issued W.r.t matters disclosed in F.S(i.e. Financial information).
- Contents – Reference to Matters disclosed in F.S(i.e. NTA)
- Conditions
- Material matter for the S.H decision making.
- Unable to modify his opinion w.r.t to such matter.
- Matters not been determined in KAM

EXAMPLES:

- Litigations – uncertainty of future outcome.
- Early application of new accounting standard.
- Non adjusting Subsequent event.
- Substantial doubt about going concern assumption.
- Material changes between periods in accounting principles or in the method of their application.

OTHER INFORMATION:- Other than Financial Information on which Audit Report thereon.(may be financial or nonfinancial)

OTHER MATTER PARAGRAPH:

- Location: Immediately after the Opinion paragraph (if there is no EMP).
-Immediately after the EMP and KAM Paragraph (If any).

Name: Other Matter Paragraph.

Issued W.r.t – other information

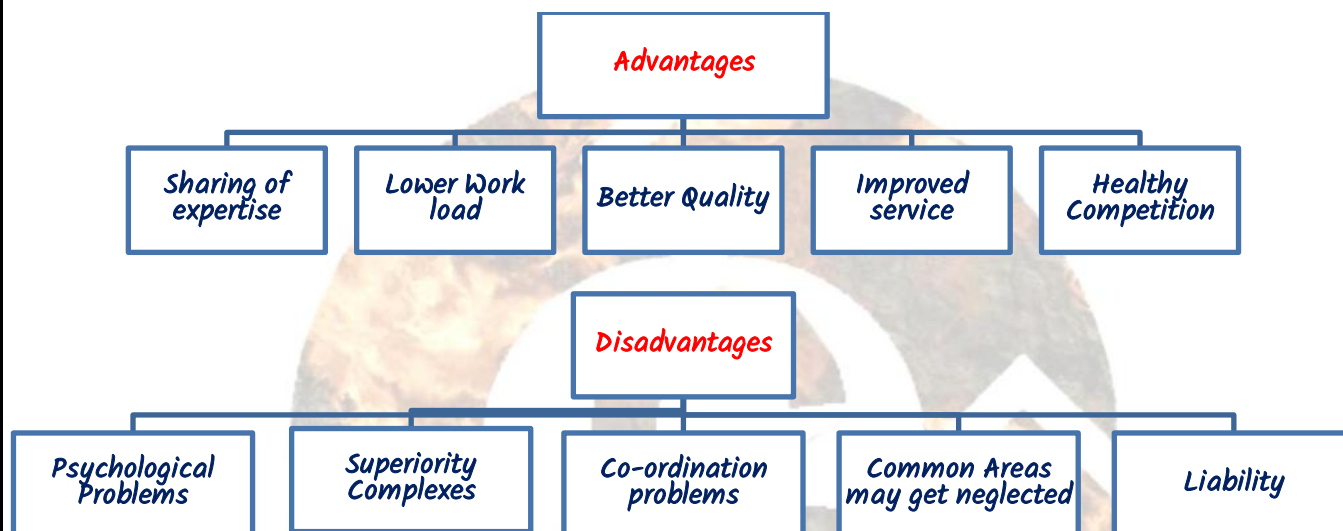
- Conditions for OMP
 - Not prohibited by L&R.
 - Matters not been disclosed in KAM Paragraph.

THE END

CONCEPT-18: JOINT AUDIT

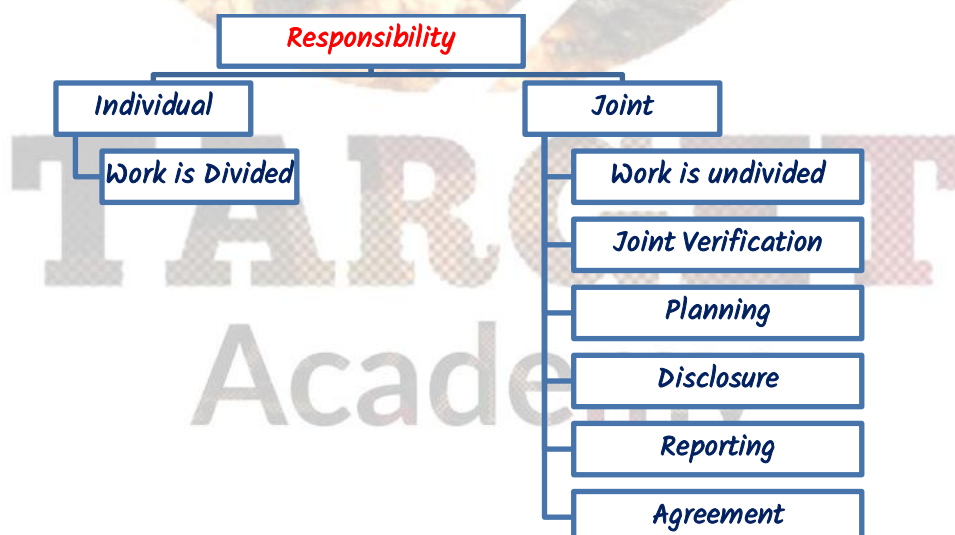
JOINT AUDITOR:

- Pooling of Expertise of more than one Firm
- Rendering of Expert job in a given time may be difficult by individual



DIVISION OF WORK:

- Any reasonable Basis
- Like : F.S Basis, Areas wide(Sales, Purchases etc.), Operations, Geographical segments wise, Period Wide etc.,

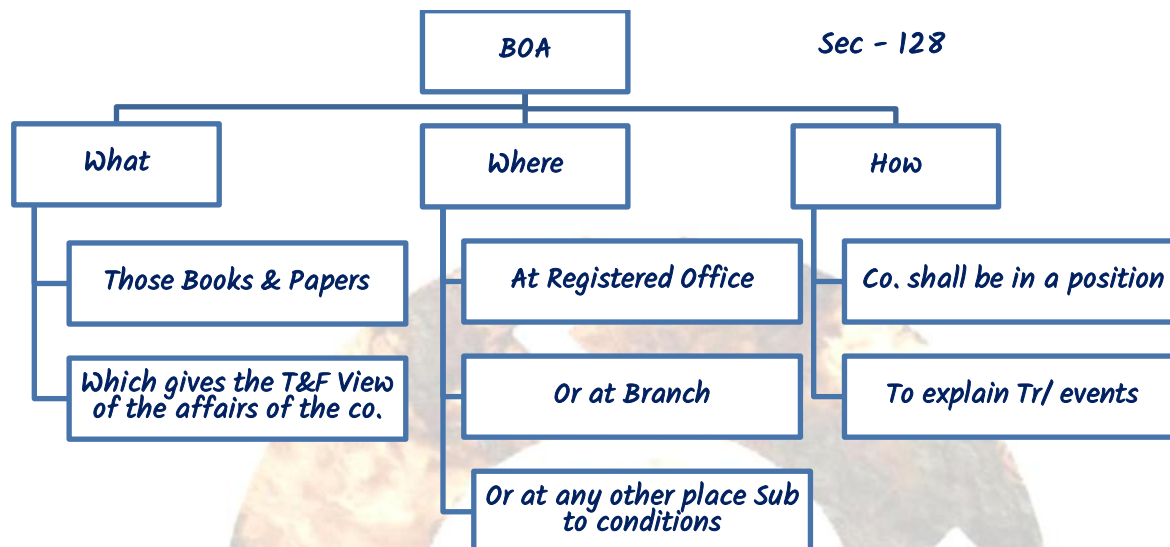


IN CASE OF DIFFERENCE OF OPINION:

- Different Report by different Auditor

THE END

CONCEPT-19: BOA



PROCEDURE FOR MAINTENANCE OF BOA AT PLACE OTHER THAN RO:

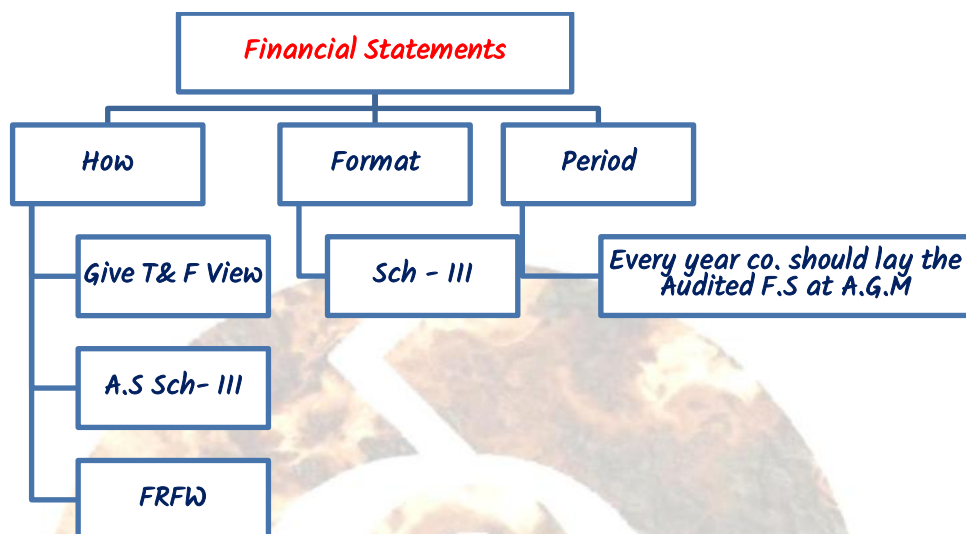


OTHER POINTS:

- Electronic Mode.
- Open for inspection.
- Period of maintenance.
- 8 year from the end of F.Y

THE END

CONCEPT-20: FINANCIAL STATEMENTS



NON COMPLIANCE WITH A.S:

- *Fact*
- *Reason*
- *Impact*

TARGET
Academy

THE END

CONCEPT-21: PUNISHMENTS AND PENALTIES

PUNISHMENTS [SEC-147]:

Noncompliance of provisions u/s 139 – 146

Particulars	Fine	Imprisonment
Company	25k – 5lac	
Officer	10k – 1lac	1 y
Auditor	25k – 5lac of 4 times of rem wel	
in case of willful default	50k- 25lac or 8 times the remuneration wel + Refund of remu + Payment of damages	1 y

CG will appoint officer

TARGET
Academy

THE END

CONCEPT-22: BOARD REPORT

BOARD REPORT:

Sec - 134

- Extract of annual return
- No. of board meetings.
- D.R.S
- Statement of declaration.
- Co. policy on Directors- appointment, rem, Independence.
- Explanations on qualification made by SA & CSR.
- Particulars of loans, guarantee, Investments.
- Particulars of contracts or arrangements with RR.
- State of Company affairs.
- Amount transferred to reserves.
- Amount declared as dividend.
- Material changes between date of F.S. and Date Boards reports.
- Conservation of energy, technology absorption, Foreign exchange.
- R.M.S.
- C.S.R.
- Performance evaluation of Board – in case of listed co.

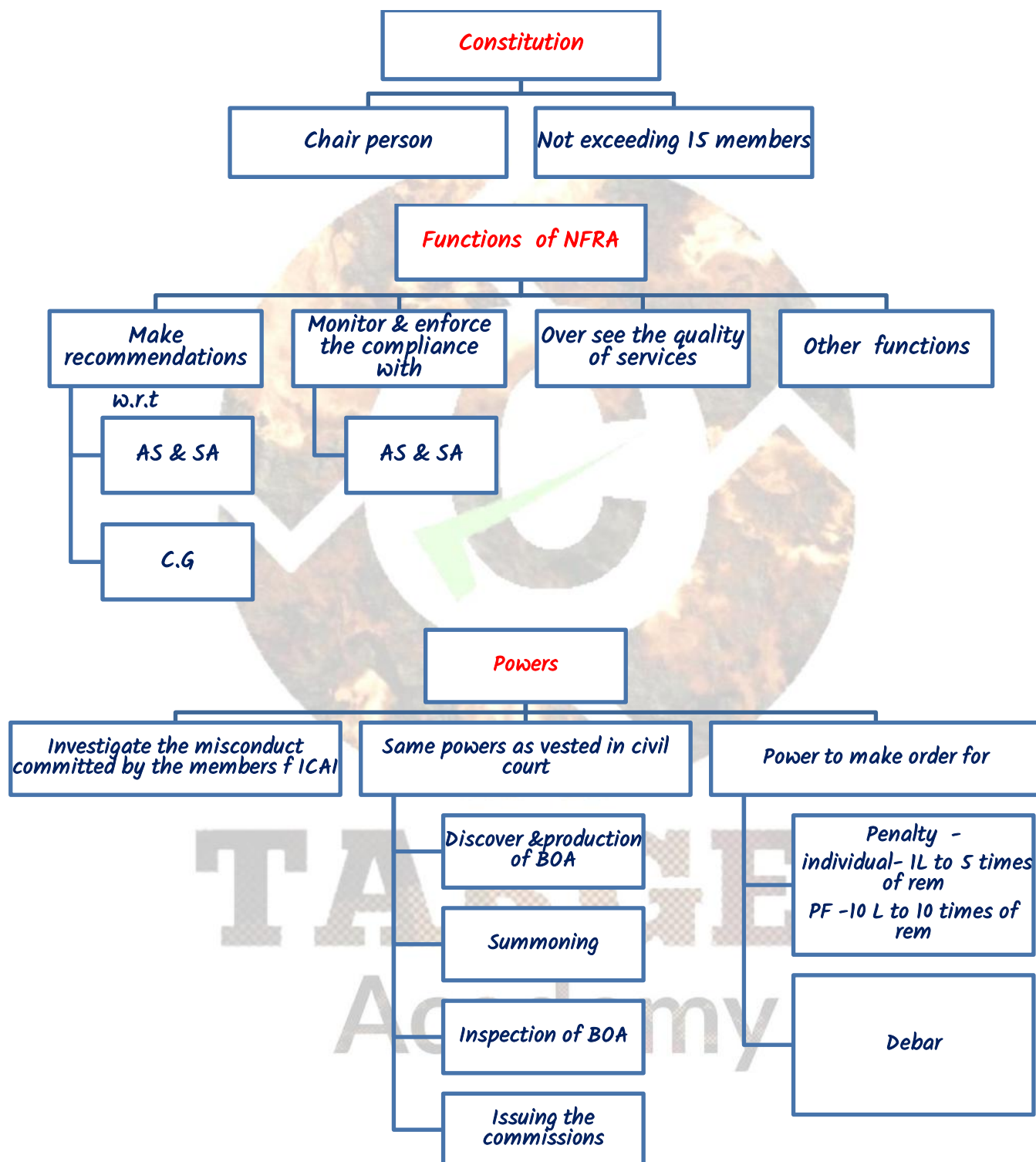
D.R.S:

- Followed A.s- in preparation of AA& proper disclosure of Material departure.
- Selection of A.S & applied consistently.
- Made Judgments & Account estimates properly.
- Proper maintenance of adequate records for safeguarding of Assets of the Co.
- Preparation of F.S on G.C Basis.
- Lay down I.F.C Adequate & Operating effectiveness.
- Design proper system to ensure Compliance with Laws & regulations.

THE END

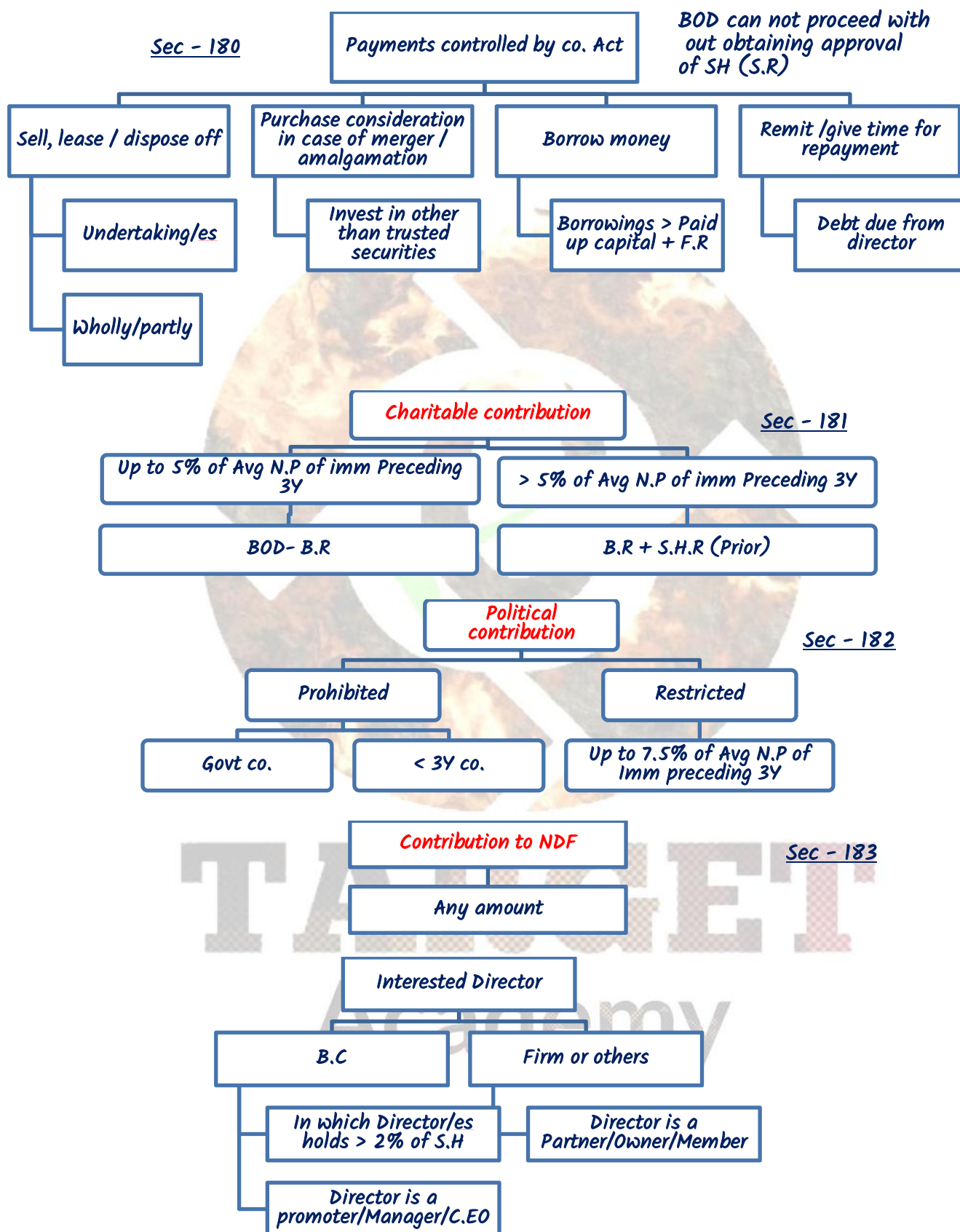
CONCEPT-23: NFRA

NFRA (SEC-132):



THE END

CONCEPT-24: SEC-180,181,182,183



THE END

CONCEPT-26: AUDIT OF ITEMS OF FINANCIAL STATEMENTS

ASSERTIONS

MEANING OF ASSERTION

SA 315 "Identifying and Assessing the Risk of Material Misstatements through Understanding the Entity and its Environment" defines the term assertion as "Representations by management, explicit or otherwise, that are embodied in the financial statements, as used by the auditor to consider the different types of potential misstatements that may occur."

When making assertions about the financial statements of certain entities, especially, for example, where the Government is a major stakeholder, in addition to assertions management may often assert that transactions and events have been carried out in accordance with legislation or proper authority. Such assertions may fall within the scope of the financial statement audit.

ASSERTIONS USED IN FINANCIAL STATEMENTS

Income Statement

- a) **Occurrence:** Transactions recognized in the financial statements have occurred and relate to the entity.
- b) **Completeness:** All transactions that were supposed to be recorded have been recognized in the financial statements. Transactions have not been omitted.
- c) **Cut-off :** Whether all income and expenses are reported in the- correct accounting period. Cut-off is a separate assertion because the substantive procedures to verify it are typically different from those applied to the other components of completeness
- d) **Measurement:** Transactions have been recorded accurately at their appropriate amounts in the financial statements. There have been no errors while preparing documents or in posting transactions to ledger. The figures and explanations are not misstated.
- e) **Accuracy -** amounts and other data relating to recorded transactions and events have been recorded appropriately.

Classification - transactions and events have been recorded in the proper accounts.

BALANCE SHEET

- a) **Existence:** Assets, liabilities and equity balances exist as at the period end.
- b) **Completeness:** All assets, liabilities and equity balances that were supposed to be recorded have been recognized in the financial statements.
- c) **Cut-off:** Whether all assets and liabilities are reported in the appropriate period.
- d) **Valuation:** Assets, liabilities and equity balances have been valued appropriately i.e. the amounts at which they are recorded are appropriate. There has been no overstatement or understatement.
- e) **Rights & Obligations:** Entity has the right to assets i.e. (whether the entity has ownership and legal title to assets) and the liabilities recognized in the financial statements represent all the entity's obligations to repayment as at a given date.

CUT-OFFS PROCEDURE

The auditor needs to satisfy himself of the cut-offs. Without a cut-off, sales could be understated or overstated, hence there is a need to perform the following cut off procedure:

- ♦ For the invoices issued during the last few days (last 5 days of the reporting year) i.e. cut-off date and which have been included in the debtors; check that the goods should have been dispatched and not lying with the Company;
- ♦ Ensure that all goods dispatched prior to the period/ year-end have been invoiced and included in debtors on a test check basis;

- ◆ Ensure that no goods dispatched after the year- end have been invoiced and included in debtors for the period under audit.

Example 1:

When we find in the balance sheet, an item under current assets reading as "cash in hand - Rs8,000" the obvious assertions that would strike the mind are the following:

- (i) The firm concerned had Rs 8,000 in hand in valid notes and coins on the balance sheet day;
- (ii) That the cash was free and available for expenditure to the firm; and
- (iii) That the books of account show a cash balance of identical amount at the end of the day on which the balance sheet is drawn up.

Example 2:

		Rs
Particulars		2,00,000
Plant and Machinery (at cost)	70,000	
Less: Depreciation till the end of previous year	13,000	
Depreciation for the year		83,000
		1,17,000

The assertions are as follows:

- i) the firm owns the plant and machinery;
- ii) the historical cost of plant and machinery is Rs. 2 lacs;
- iii) the plant and machinery physically exists;
- iv) the asset is being utilised in the business of the company productively;
- v) total charge of depreciation on this asset is Rs. 83,000 to date on which Rs.13,000 relates to the year in respect of which the accounts are drawn up; and
- vi) the amount of depreciation has been calculated on recognised basis and the calculation is correct.

From the above two illustrations we know the sort of assertions that are implied in the financial statements. Incidentally, the assertions are generally implied and not specifically spelt out, though some explicit assertions are also found in the financial statements. Explicit assertions are made when otherwise the reader will be left with an incomplete picture; it may even be misleading.

An example of the former category may be found in the following items appearing in the liability side of the balance sheet:

Secured Loans Rs 4,00,000

The description does not give us a complete picture. We do not know:

the name of the lender, if it is relevant;

the nature of security provided; and

the rate at which interest is payable.

A specific mention is required about these things for a proper appreciation of the item and the financial position. Negative assertions are also encountered in the financial statements and the same may be expressed or implied. For example, if it is stated that there is no contingent liability it would be an expressed negative assertion; on the other hand, if in the balance sheet there is no item as "building",

it would be an implied negative assertion that the entity did not own any building on the balance sheet date.

Every financial statement contains an overall representation in addition to the specific assertions so far discussed. Each financial statement purports to present something as a whole in addition to its component details. For example, an income statement purports to present "the results of operations" a balance sheet purports to present "financial position". The auditor's opinion is typically directed to these overall representations. But to formulate and offer an opinion on the overall truth of these statements he has first to inquire into the truth of many specific assertions, expressed and implied, both positive, and negative, that makes up each of these statements. Out of his individual judgments of these specific assertions he arrives at a judgement on the financial statement as a whole.

AUDIT OF SHARE CAPITAL

AUDIT PROCEDURE

1. Compare the year end balances of authorised, issued and paid up share capital, to the previous year audited financial statements.
2. If there is no change during the year, obtain a written representation from the management that there were no changes to capital structure during the year.
3. If there is any change, obtain the certified copies of relevant resolutions passed at the meetings of board of directors, members authorising the changes in authorised and paid up share capital.
4. Obtain a copy of Form SH 7 for increase in authorised share capital. Form PAS 3 for increase in paid up capital and verify the number of securities issued along with the issue price.
5. Verify whether the paid-up capital as at the year-end is within the limits of authorised capital.
6. In case of increase in authorised share capital, verify whether the Company has accurately calculated the fee and stamp duty payable to MCA and obtain a copy of the receipt in support of the payment made.

AUDIT PROCEDURE IN SPECIAL CASES

1. Issue of Shares at Premium

Where a company has issued shares at a premium, whether for cash or otherwise, company shall transfer the amount received by it to securities premium account and state the means in which the amount in the account can be applied.

As per Sec. 52 of Companies Act, 2013 the securities premium account may be applied by the company for the following purposes:

- (a) issue of unissued shares of the company to the members of the company as fully paid bonus shares;
- (b) writing off the preliminary expenses of the company;
- (c) writing off the expenses of, or the commission paid or discount allowed on, any issue of shares or debentures of the company;
- (d) providing for the premium payable on the redemption of any redeemable preference shares or of any debentures of the company; or
- (e) for the purchase of its own shares or other securities under section 68.

Auditor needs to verify whether the premium received on shares, if any, has been transferred to a "securities premium account" and whether the application of any amount out of the said "securities premium account" is only for the purposes mentioned above.

2. Issue of Shares at Discount

According to Section 53 of the Companies Act, 2013

- 1) A company shall not issue shares at a discount, except in the case of an issue of sweat equity shares given under Section 54 of the Companies Act, 2013.
- 2) Any share issued by a company at a discounted price shall be void.
(2A) Notwithstanding anything contained in sub-sections (1) and (2), a company may issue shares at a discount to its creditors when its debt is converted into shares in pursuance of any statutory resolution plan or debt restructuring scheme in accordance with any guidelines or directions or regulations specified by the Reserve Bank of India under the Reserve Bank of India Act, 1934 or the Banking (Regulation) Act, 1949.
- 3) Where any company fails to comply with the provisions of this section, such company and every officer who is in default shall be liable to a penalty which may extend to an amount equal to the amount raised through the issue of shares at a discount or five lakh rupees, whichever is less, and the company shall also be liable to refund all monies received with interest at the rate of twelve per cent. per annum from the date of issue of such shares to the persons to whom such shares have been issued.

The auditor needs to check

- i) The movement in share capital during the year and wherever there is any issue,
- ii) He should verify that the Company has not issued any of its shares at a discount by reading the minutes of meeting of its directors and shareholders authorizing issue of share capital and the issue price.
- iii) Further, auditor should also verify that whether the company has issued shares at a discount to its creditors when its debt is converted into shares in pursuance of any statutory resolution plan or debt restructuring scheme in accordance with any guidelines or directions or regulations specified by the Reserve Bank of India under the Reserve Bank of India Act, 1934 or the Banking (Regulation) Act, 1949.

3. Issue of Sweat Equity Shares

"Sweat Equity Shares" means equity shares issued by the company to employees or directors at a discount or for consideration other than cash for providing know-how or making available right in the nature of intellectual property rights or value additions, by whatever name called.

4. Verification aspects

The auditor may see that the Sweat Equity Shares issued by the company are of a class of shares already issued and following conditions are fulfilled:

- (a) the issue is authorised by a special resolution passed by the company;
- (b) the resolution specifies the number of shares, the current market price, consideration, if any, and the class or classes of directors or employees to whom such equity shares are to be issued;
- (c) not less than one year has, at the date of such issue, elapsed since the date on which the company had commenced business; and
- (d) where the equity shares of the company are listed on a recognised stock exchange, the sweat equity shares are issued in accordance with the regulations made by the SEBI in this behalf and if they are not so listed, the sweat equity shares are issued in accordance with such rules as may be prescribed.

5. Reduction of Capital

The duties of the auditor in this regard are following:

1. Verifying that the special resolution has been passed for reduction of capital in the meeting of the shareholder.

2. Check that the Articles of Association authorizes the reduction of capital.
3. Examine the order of the Tribunal confirming the reduction and ensure that a copy of the order and the minutes have been registered and filed with the ROC.
4. Inspecting the ROC Certificate as regards reduction of capital.
5. Vouching the journal entries recorded to reduce the capital and to write down the assets by reference to the resolution of shareholders and other documentary evidence.
6. Ensure that the requirements of Schedule III w.r.t. reduced capital have been complied with.
7. Confirming that the revaluation of assets has been properly disclosed in the Balance Sheet.
8. Verifying the adjustment made in the members' accounts in the Register of Members and confirming that either the paid-up amount shown on the old share certificates have been altered or new certificates have been issued in lieu of the old, and the old ones have been cancelled.
9. Confirming that the words "and reduced", if required by the order of the Tribunal, have been added to the name of the company in the Balance Sheet.
10. Verifying that the MOA of the company has been suitably altered.

AUDIT OF RESERVES AND SURPLUS (OTHER EQUITY)

MEANING OF RESERVES AND PROVISIONS

Meaning of Reserve

- Reserves are amounts appropriated out of profits which are not intended to meet any liability, contingency, commitment or diminution in the value of assets known to exist at the date of the Balance Sheet.
- Reserves are made up of amounts appropriated out of profits, held for equalising the dividends of the company from one period to another or for financing the expansion of the company or for generally strengthening the company financially.

Meaning of Provisions

- Provisions are amounts charged against revenue to provide for depreciation, renewal or diminution in the value of assets or a known liability the amount of which cannot be determined with substantial accuracy or a claim which is disputed.
- Amounts contributed or transferred from profits to make good the diminution in assets values due to the fact that some of them have been lost or destroyed, as a result of some natural calamity or debts have proved to be irrecoverable are also described as provisions.
- Provisions are normally charged to the Statement of Profit and Loss before arriving at the amount of profit.

DIFFERENCE BETWEEN RESERVES AND PROVISIONS

Reserves	Provisions
(a) It is an appropriation of profit	(a) It is a charge against Profit.
(b) They are not intended to meet any liability, contingency or diminution in the value of assets, though may be made for some specific purposes, like redemption of debentures.	(b) They are made to provide for depreciation, renewal or a known liability or a disputed claim

(c) Reserves cannot be created unless there is a profit except a few like revaluation reserves

(c) They must be created whether or not there is profit

(d) Reserves are generally optional except few ones like creation of CRR, DRR, etc.

(d) Provisions are not optional and have to be made as per generally accepted accounting principles.

TYPES OF RESERVES

Revenue Reserves

Revenue reserves represent profits that are available for distribution to shareholders held for the time being or any one or more purpose, e.g., to supplement divisible profits in lean years, to finance an extension of business, to augment the working capital of the business or to generally strengthen the company's financial position.

Capital Reserves

- Capital reserve represents surplus or profit earned in respect of certain types of transactions (like sale of fixed assets at a price in excess of cost, realisation of profits on issue of forfeited shares, etc.) which are not regarded by the directors as free for distribution as a dividend.
- Capital Reserves does not include any amount regarded as free for distribution through the Statement of Profit and Loss.
- Capital reserves includes share premium, capital redemption reserve, development rebate reserve and profit on reissue of forfeited shares.
- Capital reserve, can be utilised for writing down fictitious assets or losses or for issuing bonus shares if it is realised. But the amount of share premium or capital redemption reserve account can be utilised only for the purpose specified in Sections 52 and 55 respectively of the Companies Act, 2013.

AUDIT PROCEDURE

1. Compare the opening balance of reserves and surplus to the previous year audited financial statements.
2. For addition/utilisation in current year, in case of:
 - (a) Profit and Loss balance: Trace the movement as disclosed in Statement of changes in Equity to Surplus/Deficit as per Statement of Profit & Loss for the year under audit. For adjustment related to dividend payment and dividend distribution tax, verify the resolution passed by the board of directors regarding declaration of dividend.
 - (b) Share Premium: Confirm whether company has issued any shares during the year in excess of the nominal value of the shares. Ensure that any withdrawal from securities premium account is in compliance of Sec. 52.

Other Equity: Understand the underlying reason for the transaction.

AUDIT OF BORROWINGS

AUDIT PROCEDURE

COMPLETENESS

- Obtain a schedule of short term and long term borrowings.
- (a) Consider any evidence of additional debt obtained through examination of minutes of the board of directors, significant contracts, confirmations from banks/ lenders, support for subsequent cash disbursements (when testing payables) etc.
- (b) Trace the closing balances as per the schedules to the general ledger.
- Review subsequent transactions after the end of the reporting period to determine if there are unrecorded liabilities at year- end and the transactions are recorded in the correct period.

EXISTENCE

- Review board minutes for approval of new lending agreements. During review, ensure that new loan agreements or bond issuances were authorized. Ensure that significant debt commitments were approved by the board of directors.
- Agree details of loans recorded (interest rate, nature and repayment terms) to the loan agreement. Verify that borrowing limits, if any, imposed by agreements are not exceeded.
- Roll out and obtain independent balance confirmations (SA 505) in respect of all the borrowings from the lender (banks/ financial institutions etc.).
- When debt is retired, ensure that a discharge is received on assets securing the debt.
- Obtain Written Representation that all the liabilities which have been recorded represent a valid claim by the lenders.

VALUATION

- Determine that the accounting policies and methods of recording debt are appropriate and applied consistently.
- Agree loan balance and loan payables to the loan agreement.
- Recompute the interest and discount or premium on redemption, if any.
- Check computation of the amortization of premium or discount, if any.
- For foreign currency loans, check the closing exchange rate(s) used and verify the computations of the restatements of foreign currency balances outstanding at year end. (As per AS 11)

DIRECT CONFIRMATION PROCEDURE (SA 505)

Auditor is required to take confirmations from major lenders w.r.t. major aspects related with loans. Procedure that may be followed:

- (a) Design the confirmation in a manner that asks for all information likely to be relevant for audit purposes, for example, interest rates, due dates, the date to which interest has been paid, collateral and security interests etc.

- (b) Send the requests under own control to the lenders.
- (c) In case of non-reply, send reminders.
- (d) Compare replies to requests.

For any exception identified, perform necessary inquiries with the management and identify instances of any possible misstatement.

AUDIT OF LOANS AND ADVANCES AND OTHER CURRENT ASSETS

CLASSIFICATION OF ASSETS

An asset shall be classified as current when it satisfies any of the following criteria:

- (a) it is expected to be realized in, or is intended for sale or consumption in, the company's normal operating cycle;
- (b) it is held primarily for the purpose of being traded;
- (c) it is expected to be realized within twelve months after the reporting date; or
- (d) it is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

All other assets shall be classified as non-current.

AUDIT PROCEDURES

Compliance Procedures

- i. The system should specify total amount up to which loans may be made; the purposes for which loans may be made; the terms on which such loans may be made; the persons who are authorized to make loans; procedure for ensuring compliance with relevant legal requirements.
- ii. All variations in the terms of loans and advances should be duly approved in writing by the competent authority.
- iii. Where security is taken against the loans, the form and adequacy of security should be reviewed by a responsible official.
- iv. The loan and security documents should be kept in safe custody of a responsible official.
- v. The system should provide for identification of cases where principal and/or interest have become overdue or where terms are not being complied with.
- vi. Confirmation of balances should be obtained at periodic intervals in the same manner as in the case of trade receivables.

SUBSTANTIVE PROCURES

- 1. Auditor should examine whether the entity is empowered to make loans having regard to requirements of governing laws and internal regulations.
- 2. The auditor should examine the loan documents and other evidence so as to examine the terms and conditions on which loans and advances has been granted.

3. The auditor should ascertain whether the parties to whom loans and advances have been made have complied with the terms and conditions relating to payment of interest, repayment of loans or adjustment of advances, etc.
4. In the case of defaults, e.g., where the repayment of loans or advances or the payment of interest are overdue, the auditor should consider whether such defaults are indicative of unwillingness or inability of the parties concerned to make the payment.
5. The auditor should pay particular attention to loans and advances given to parties in whom directors or persons who are substantial owners of the entity are interested.

The auditor should also examine any other aspects required to be examined or reported upon by the relevant statute. Example, Sec. 143(1) of Companies Act, 2013, requires the auditor to inquire "whether loans & advances made by the company on the basis of security have been properly secured & whether the terms on which they have been made are not prejudicial to the interests of the company or its members".

AUDIT OF LOANS AND ADVANCES AND OTHER CURRENT ASSETS

REVENUE EXPENDITURE VS. CAPITAL EXPENDITURE

- It is a routine expenditure incurred in the normal course of business.
- Its main purpose is to maintain the earning capacity of the business
- It is usually a recurring item.
- It is consumed within an accounting year and the entire amount is charged to income statement.
- Examples are: Cost of raw material, repairs and renewals, advertisements, insurance etc.

CAPITAL EXPENDITURE

- It is incurred in acquiring or improving permanent assets which are not meant for resale.
- It seeks to improve the earning capacity of the business.
- It is normally a non-recurring outlay.
- It produces benefits over several years. Only a small part of it is charged to Statement of Profit and Loss as depreciation & the rest appears in Balance Sheet.
- Capital expenditure may be in the form of Land, Building, Plant and Machinery, Intangible assets, etc.
- Expenses which are essentially of a revenue nature, if incurred for creating an asset or adding to its value for achieving higher productivity, are also regarded as expenditure of a capital nature.

For Example:

- 1. Material and wages when expended on the construction of a building or erection of machinery.*
- 2. Legal expenses incurred in connection with the purchase of land or building.*
- 3. Freight when incurred in respect of purchase of plant and machinery.*
- 4. Major repairs of a fixed asset that increases its productivity.*
- 5. Wages paid on installation costs incurred in Plant & Machinery.*
- 6. Interest paid for the qualifying period as per AS-16 i.e. before the asset is constructed.*

EVALUATION OF INTERNAL CONTROL

An auditor should review the system of internal controls relating to PPE, particularly the following:

- Control over expenditure incurred on PPE acquired or self- constructed*
- Accountability and utilisation controls*
- Information controls*
- Safeguarding of assets*

SUBSTANTIVE PROCEDURES

- Verification of PPE consists of examination of related records and physical verification. The auditor should, normally, verify the records with reference to the documentary evidence and by evaluation of internal controls. Physical verification of PPE is primarily the responsibility of the management.*
- The auditor must also consider the appropriateness of the accounting policies, including policies for determining which costs are capitalised, whether a cost or valuation model is followed and depreciation (including assessment of residual values) appropriately calculated.*
- As per AS 10, the auditor should ensure that the entity has capitalised the assets as per the component approach, whereby a component or part of an asset which is significant in value compared to the total value of the asset or the useful life of which is different from that of the asset, has to be capitalised separately.*

SUBSTANTIVE PROCEDURES W.R.T. SPECIFIC SITUATIONS OPENING BALANCES (C)

- The opening balances of the existing PPE should be verified from records such as the schedule of PPE, ledger*
- or register balances. In the case of initial engagements, as per SA 510 (Revised), "Initial Audit Engagements - Opening Balances", for the purpose of ascertaining the accuracy of the opening balance of PPE, some audit evidence may be obtained by examining the accounting records and other information underlying the opening balances.*

CAPITAL WORK-IN- PROGRESS (C)

- Capital work-in-progress should be verified with reference to the underlying contractor bills, work orders, certification of work performed by independent persons, comparison of the progress and the costs incurred up-to-date with the budgets, capital asset management policy and plan, pending commitments, etc.*

ADDITIONS TO PPE

- Acquisition of new PPE and improvements to the existing ones should be verified with reference to supporting documents such as orders, invoices, receiving reports and title deeds and applicable customs or excise documents. Due care needs to be taken when the purchase is from a related party. The auditor may employ procedures such as possible comparative prices prevalent in a ready market, evaluation, justification and approvals for the purchase.

OWNERSHIP OF PPE

- The ownership of assets, like land and buildings, may be verified by examining the title deeds. In case the title deeds are held by other persons, such as solicitors or bankers, confirmation should be, at least where significant, obtained directly by the auditors through a request signed by the client.

PHYSICAL VERIFICATION (E)

- It is the responsibility of the management to carry out physical verification of PPE at appropriate intervals in order to ensure that they are in existence.
- Auditor should satisfy himself that such verification was done by observing the verification being conducted by the management wherever possible and by examining the written instructions issued to the staff by the management and the relevant working papers.
- Auditor should also satisfy himself that the persons conducting the verification, whether the employees of the entity or outside experts have the necessary competence.
- Auditor should examine whether the method of verification was reasonable in the circumstances relating to each asset.
- The auditor should examine whether the frequency of verification was reasonable in the circumstances of each case.
- The auditor should test check the records of PPE with the physical verification reports.

RECEIPT OF CAPITAL SUBSIDY:

- Check the application made for the claim of subsidy to ascertain the purpose and the scheme under which the subsidy has been made available.
- Examine documents for the grant of subsidy and note the conditions attached with the same relating to its use, etc.
- Ensure that the conditions to be fulfilled and other terms especially whether the same is for a specific asset or is for setting up a factory at a specific location.
- Check relevant entries for receipt of subsidy.
- Check compliance with requirements of AS 12 on "Accounting for Government Grants" i.e. whether it relates to specific amount or in the form of promoters' contribution and accordingly accounted for as also compliance with the disclosure requirements.

AUDIT OF INTANGIBLE FIXED ASSETS

AUDIT PROCEDURES

An intangible asset is an identifiable non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes. Auditor should check the following points:

1. Auditor should ensure that intangible asset should be recognised only if (a) it is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and (b) the cost of the asset can be measured reliably.
2. Ensure that at initial stages, intangible asset should be measured at cost. After initial recognition an intangible asset should be carried at its cost less any accumulated amortisation and any impairment losses.
3. Ensure that if an item covered does not meet the definition of an intangible asset, expenditure to acquire it or generate it internally is recognised as an expense when it is incurred.
4. In some cases, an asset may incorporate both intangible and tangible elements that are, in practice, inseparable. Ensure that in determining whether such an asset should be treated under AS 10, "Property, Plant and Equipment", or as an intangible asset under AS 26, "Intangible Assets" appropriate judgment has been taken to assess as to which element is predominant.

Auditor should also ensure that proper disclosure is made in the financial statements about the carrying amount, amortisation methods, useful lives, etc. in compliance of AS 26 and Schedule III to the Companies Act, 2013.

AUDIT PROCEDURE FOR SPECIFIC INTANGIBLE ASSETS

Goodwill

- (a) Ensure that goodwill has been recognized in the books in compliance of AS 26. As per AS - 26, "Intangible Assets" internally generated goodwill is not to be recognised as an asset, as it is not an identifiable resource controlled by the enterprise that can be measured reliably at cost.
- (b) Examine the vendors' agreement to ascertain the amount of goodwill.
- (c) Ensure that whenever business is acquired at a price, payable in cash or otherwise, which is in excess of the value of net assets taken over, such excess amount is the goodwill.
- (d) Ensure that only the amount paid to the vendors not represented by tangible or intangible assets, the value of which can be measured reliably has been debited to goodwill account.
- (e) Ensure goodwill has not recognised in the books by revaluation of assets or writing back the amount of goodwill earlier written off.
- (f) Ensure that the goodwill not yet written off has been properly disclosed under the head "Non-Current Assets" as per Schedule III requirements.
- (g) Ensure amortisation of goodwill over a reasonable period as a matter of financial prudence.

Patent

- a. Obtain a list of patents owned by the client as on the balance sheet date and verify ownership of a patent by inspection of the certificate issued in respect of grant of the patent.
- b. Examine the agreement if it has been so as to find out the total cost.
- c. In case of outright purchase of patent rights, the purchase consideration, legal fees & registration charges should be included in cost. When they are developed within the organisation, all costs incurred on their development including legal & registration expenses for registration of the patent should constitute the cost.
- d. Check that the patent rights are alive and legally enforceable.
- e. Check that renewal fees have been paid on due dates and being charged to revenue. The last renewal receipt should be examined to ascertain that the patent has not lapsed.
- f. Ascertain that the rate at which the value of each patent is being written off is adequate since the amount paid in respect of each patent should be amortised over its life or a lesser period if its commercial life is shorter; its value would be completely written off by the time it would cease to have a commercial value.
- g. Ascertain that only the actual cost incurred in the process has been capitalised.

Trade Mark and Copyright

1. Obtain duly signed schedule of Trade Marks and Copyrights and confirm that all of them are shown in the Balance Sheet.
2. Examine the written agreement in case of assignment of Copyrights or transfer of trade marks.
3. Ensure that trademarks and copyrights have been duly registered under respective laws.
4. Verify existence of copyright by reference to contract between the author & the entity and note down the terms of payment of royalty.
5. See that the value has been determined properly and the costs incurred for the purpose of obtaining the trademarks and copyrights have been capitalised.
6. Ascertain that the legal life of the trademarks and copyrights have not expired.
7. Ensure that amount paid for both the intangible assets is properly amortised having regard to appropriate legal and commercial considerations, as per the provisions of AS 26 on Intangible Assets.

AUDIT OF DEPRECIATION AND AMORTIZATION

MEANING AND PURPOSE OF DEPRECIATION

AS 10 "Property, Plant & Equipment" defines depreciation as the systematic allocation of the depreciable amount of an asset over its useful life.

PURPOSES OF DEPRECIATION

- (a) To provide the funds for the replacement of assets: This is accomplished by retaining the amount of depreciation charged in the profit and loss account in the business.*
- (b) To determine true cost of manufactured goods: As the value of fixed assets depletes gradually by consumption during the process of production, it is necessary that such consumption of value be charged in the accounts for determination of the true cost of production.*
- (c) To determine the profit or loss for the year: Depreciation being an expense represented by the loss in value of fixed assets arising on use, it is charged to the profit and loss account for determining the profit or loss during a year.*
- (d) To show a true and fair value of entity's assets in the balance sheet: since the original costs of fixed assets gradually decreases due to use and other factors, it is improper to continue to carry such assets at original costs. Therefore, the amount of depreciation charged in the profit and loss account representing the loss in value of the assets is deducted from the original cost on a cumulative basis so as to reflect in the balance sheet a true and fair value of the fixed assets.*

AUDITOR'S DUTY

The auditor should pay attention to the following points:

- i. Understand and evaluate the adequacy and effectiveness of internal controls as regards accounting, maintenance and safeguarding of fixed assets and that a proper distinction is being made between capital expenditure and revenue expenditure.*
- ii. Check that the amount of depreciation is accurately calculated considering the acquisitions or disposal, if any, of the fixed assets during the year.*
- iii. Ensure that the company has complied with the requirements of AS 10 on Property, Plant and Equipment.*
- iv. Also ensure that the provisions of Section 123(1) of the Companies Act have also been complied with by the company.*
- v. Perform analytical procedures to obtain audit evidence as to overall reasonableness of depreciation and amortisation expense.*

AUDIT OF SALE OF PRODUCTS AND SERVICES

AUDIT PROCEDURES

Steps to be followed

- Identify the control points over sales.*
- Tests the identified controls to determine how strong and reliable they are. If controls are assessed as strong, the auditor can reduce the amount of substantive testing.*
- Selects a random sample of transactions and examines the related customer purchase orders, invoices and customer statements.*
- Performing substantive audit procedures like vouching and substantive analytical procedure (SAP). SAP will consist of sales trend analysis, comparison of sales figures with previous accounting period etc.*

- Verification of revenue may be carried out by employing the following procedures:

- (a) Examination of records;
- (b) Analytical review procedures.

ENSURE REVENUE IS NOT OVER STATED BY PERFORMING (O)

- i. Check whether a single sales invoice is recorded twice or a cancelled sales invoice could also be recorded.
 - ii. Test check few invoices with their relevant entries in sales journal.
 - iii. Obtain confirmation from few customers to ensure genuineness of sales transaction
 - iv. Whether any fictitious customers and sales have been recorded.
- Review sequence of sales invoices
 - Review journal entries for unusual transactions
 - Calculate the ratio of sales return to sales and compare it with previous year and enquire for the reasons for increase/ decrease.
 - Check the sales return with sales invoice, challan, credit note, stock register, etc.

EXAMINATION OF RECORDS (O)

1. The auditor should examine whether the basis of recognition of revenue by the entity is in accordance with the AS 9, Revenue Recognition.
2. The auditor should examine whether the entity has instituted adequate cut-off procedures in relation to sales and sale returns.
3. The auditor should examine selected entries in the sales journal with reference to the related sale invoices, dispatch documents and other supporting documents.
4. The auditor should examine selected entries in the sales return journal with reference to the receiving reports in respect of goods returned, credit notes and other supporting documents.
 - (a) In respect of goods sent on approval, the auditor should particularly examine that revenue in respect of such goods is not recognised until the goods have been formally accepted by the buyer, or
 - (b) the buyer has done an act adopting the transaction, or
 - (c) the time period for rejection has elapsed or where no time has been fixed, a reasonable time has elapsed.
5. In respect of sales to intermediate parties, the auditor should examine that revenue from such sales is not recognised until the significant risks and rewards of ownership have passed.
6. Where the consideration is receivable in instalments and includes an element of interest, the auditor should examine that the revenue attributable to the sale excludes the interest element.
7. In respect of export sales, the auditor should carry out the following additional procedures:

- (a) The auditor should examine that revenue from export sales in which consideration is receivable in a foreign currency is recorded at an appropriate amount in accordance with AS 11, Accounting for the Effects of Changes in Foreign Exchange Rates. (Measurement)
- (b) The auditor should obtain a written representation from the management to the effect that the entity has complied with the legal and regulatory requirements relating to exports.
- 8. Compare the rate of sales affected with related parties and review them for collectability, as well as whether they were properly authorized and the value of such transactions were reasonable and at arm's length. (Measurement)
- 9. In respect of revenue arising from services rendered, the auditor should examine the related agreements and other documents.

AUDIT PROCEDURE IN CONSIGNMENT SALES

- 1. Verify the terms of agreement between the consignor and the specific cases consignee to ascertain the terms and conditions regarding commission and other expenses.
- 2. Ensure that the goods consigned are not treated as ordinary sales.
- 3. Ensure that the gross sale proceeds as mentioned in the account Sales has been credited to the Consignment Account and debited to the consignee's account.
- 4. Ascertain that credit has been taken only for the profit on the goods sold through the consignee before the year end. No profit should be taken for the profit on goods remaining in the hands of the consignee.
- 5. Ensure that the stock lying with the consignee at the end should be taken in the balance sheet at cost on a consistent basis and credited to the Consignment A/c to arrive at the result of the consignment transactions.
- 6. Obtain confirmation of the balance in the account of the consignee from the consignee.
- 7. In case, goods are consigned at invoice price, auditor should ensure that the necessary adjustments to remove the loading have been made.
- 8. Examine the adjustments made at the year-end in respect of the goods not yet sold, commission and the expense incurred by consignee.

GOOD SENT OUT ON SALE OR RETURN BASIS

- (a) Check maintenance of separate memoranda records of goods sent out on sale or return. Only after approval from customer, personal account of customer is debited and the sales account is credited.
- (b) Ensure that the price of such goods is unloaded from the sales account and the debtor's record before the approval from customer.
- (c) In respect of the goods for which approval period has expired, ensure that either goods have been received back or customer's account have been debited.
- (d) In respect of the goods for which approval period has not expired till the close of the year and lying with the party, ensure that cost of such goods has been included in the closing stock.

ANALYTICAL PROCEDURES

- (a) *In addition to the audit procedures discussed above, the following analytical procedures may often be helpful as a means of obtaining audit evidence:*
- (b) *Comparison, product-wise and location-wise, of revenue for the current year with the corresponding figures for previous years.*
- (c) *Comparison of ratio of gross margin to sales for the current year with the corresponding figures for previous years.*
- (d) *Comparison of ratio of sales returns to sales for the current year with the corresponding figures for previous years.*
- (e) *Comparison of ratio of trade discount to sales for the current year with the corresponding figures for previous years.*
- (f) *Comparison of ratio of excise duty/sales tax/export incentives to sales for the current year with the corresponding figures for previous years.*
- (g) *Comparison, product-wise and location-wise, of quantity sold during the year with the corresponding figures for previous years.*
- (h) *Product-wise reconciliation of quantity sold during the year with opening stock, purchases/production and closing stock.*

AUDIT OF TRADE RECEIVABLES

ESSENTIAL FEATURES OF INTERNAL CONTROLS W.R.T. TO TRADE RECEIVABLES

In relation to credit sales, it becomes imperative to carry out compliance procedures so as to ensure that the system for receivables has the following features:

1. *Only bona fide sales lead to receivables.*
2. *Sales are made only to approved customers.*
3. *All such sales are duly recorded in the books.*
4. *Once recorded, the debts can only be eliminated by receipt of cash or on the approval by a responsible official.*
5. *Debts are collected promptly.*
6. *Balances are regularly reviewed and aged, a proper system of follow up exists and if necessary adequate provision for bad debt exists.*
7. *Clear segregation of duties relating to identification of debt, receipt of income, reconciliations and write off of debts.*

AUDIT PROCEDURE

EXISTENCE

- *Check whether there are controls in place to ensure that invoices cannot be recorded more than once and receivable balances are automatically recorded in the general ledger from the original invoice.*

- Ask for a period-end accounts receivable ageing report and trace the balance as per the report to the general ledger.
- Check whether realization is recorded invoice-wise or not. If not, check that money received from debtors is adjusted chronologically invoice-wise and on FIFO basis i.e. previous bill is adjusted first. If realization is made on account, verify whether the Company has obtained confirmations from debtors in respect of the same.
- If any large balance is due for a long time, auditor should ask for reasons and justification for the same.

COMPLETENESS

The auditor needs to satisfy himself of the cut-offs. Without a cut-off, sales could be understated or overstated, hence there is a need to perform the following cut off procedure:

- Test invoices listed in receivable report. Select few invoices from the accounts receivable ageing report and compare them to supporting documentation to see if they were billed with the correct amounts, to the correct customers, and on the correct dates.
- Match invoices to shipping/ dispatch log. Match invoice dates to the shipment dates for those items in the shipping/ dispatch log, to see if sales are being recorded in the correct accounting period. This can include an examination of invoices issued subsequent to the period being audited, to see if they should have been included in the period under audit.
- Assess bill and hold sales. If there is a situation where the Company is billing customers for sales despite still retaining the goods on-site (known as “bill and hold”), examine supporting documentation to determine whether a sale has actually taken place or not.
- Review the receiving log to see if the Company has recorded an inordinately large amount of customer returns after the audit period, which would suggest that the Company may have shipped more goods near the end of the audit period than what the customers had authorized to inflate the profits of the company;
- Review the process of giving discounts/ incentives and check whether the same were given as per the Company's policy/ general industry trends.
- Review credit memos, on a sample basis, issued during the audit period to see if they were properly authorized and whether they were issued in the correct period.

VALUATION

- Review the process followed by the Company to derive an allowance for doubtful accounts.
- Obtain the ageing report of accounts receivable (both Dr/Cr balance).
- Also, obtain the list of debtors under litigation and compare with previous year.
- Scrutinize the analysis and identify those debtors which appear doubtful; discuss with management about reasons as to why these debtors are not included in the provision for bad debts. Perform further testing where any disputes exist.
- He should check if provisions are made at appropriate rates considering the recoverability of amounts due.

DIRECT CONFIRMATION PROCEDURE

- The auditor employs direct confirmation procedure with the consent of the entity under audit. If management does not allow the auditor to seek confirmation from certain trade receivables, the auditor should consider whether there are valid grounds for such a request.
- While determining the information to be obtained, the auditor should consider all relevant factors such as the effectiveness of internal control, the apparent possibility of disputes, inaccuracies or irregularities in the accounts and the materiality of the amounts involved.
- The trade receivables may be requested to confirm the balances either (a) as at the date of the balance sheet, or (b) as at any other selected date which is reasonably close to the date of the balance sheet.
- Where the auditor decides to confirm the trade receivables at a date other than the balance sheet date, he should examine the movements in debtor balances which occur between the confirmation date and the balance sheet date and obtain sufficient evidence to satisfy himself that debtor balances stated in the balance sheet are not materially misstated.
- The form of requesting confirmation from the trade receivables may be either (a) the 'positive' form of request or (b) the 'negative' form of request.
- Where positive form of request is used, the auditor may, in appropriate cases, request the entity to follow up with a reminder to those trade receivables from whom he receives no replies.
- Any discrepancies revealed by the confirmations received or by the additional tests carried out by the auditor may have a bearing on other accounts not included in the original sample. The entity should be asked to investigate and reconcile the discrepancies.
- In addition, the auditor should also consider what further tests he can carry out in order to satisfy himself as to the correctness of the amount of trade receivables taken as a whole.

ANALYTICAL REVIEW PROCEDURES

- Auditor may also perform below mentioned analytical review procedures as a means of obtaining audit evidence regarding the various assertions relating to trade receivables, loans and advances:
- comparison of closing balances of trade receivables, loans and advances with the corresponding figures for the previous year;
- comparison of the relationship between current year debtor balances and the current year sales with the corresponding figures for the previous year;
- comparison of actual closing balances of trade receivables, loans and advances with the corresponding budgeted figures, if available;
- comparison of current year's aging schedule with the corresponding figures for the previous year;
- comparison of significant ratios relating to trade receivables, loans and advances with the similar ratios for other firms in the same industry, if available;
- comparison of significant ratios relating to trade receivables, loans and advances with the industry norms, if available.

AUDIT OF PURCHASES

AUDIT PROCEDURE

Steps to be followed

- Identify the control points over purchases.
- Tests the identified controls to determine how strong and reliable they are. If controls are assessed as strong, the auditor can reduce the amount of substantive testing.
- Selects a random sample of transactions and examines the related purchase orders, Goods Received Note (GRN), purchase invoices, inward gate entry register and vendor reconciliation/ statements.
- Performing substantive audit procedures like vouching and substantive analytical procedure (SAP). SAP will consist of purchase trend analysis, comparison of purchase figures with previous accounting period etc.
- Verification of revenue may be carried out by employing the following procedures:
 - (a) Examination of records;
 - (b) Analytical review procedures.

AUDIT PROCEDURE

Ensure purchases are not understated/ overstated by performing following audit procedures: (0)

- Whether any fictitious vendors have been booked or purchases have been recorded by reviewing the vendor selection process followed by the entity and also performing procedures to ensure existence of the vendors.
- Whether the goods were received at the factory gate and whether there exists an entry in the security gate inward register.
- Whether quality inspection of goods was done.
- Whether a goods receipt note was prepared and signed by an appropriate client personnel.
- Whether the purchase invoice was approved as per delegation of authority and whether a 3 or 2-way match (as discussed above) was done.
- Whether stock record has been updated by the stores personnel.

Special considerations during audit of purchases/SPECIAL PRECAUTIONS IN VERIFICATION OF PURCHASE INVOICES

- 1 The purchase invoice received should be the "Original" copy (and not photocopy/ carbon copy) against which the entity has recorded the purchase in its books of account.
- 2 Purchase invoice should have been booked only once risk and reward incidental to ownership has been transferred to the entity. Specific consideration for cases where the terms of delivery as agreed with vendor are F.O.B., C.I.F. etc.

- 3 Purchase invoice should be in the name of entity. However, in case of different branches, it should be addressed to the appropriate branch.
- 4 Input tax component should have been booked in the input tax ledger. The auditor should obtain tax returns filed with the authorities and tally the input tax as reflected in the books to the amount disclosed in the returns.
- 5 In case of purchases made from related parties or allied and associated concerns, the auditor needs to verify if requisite approval from Board of Directors (appropriate authority) has been obtained and should verify the selected samples and perform analytical procedures in relation to price of goods to confirm that the price charged is at arm's length.
- 6 The auditor should review whether purchases should be capitalized or expensed off in Statement of Profit and loss according to his professional judgement.
- 7 Compliance of special conditions: If supplies are received on certain special conditions, verified that these conditions are the same as were agreed to at the time the order was placed, e.g., payment of freight and insurance charges of goods while in transit, etc.
- 8 Timings of Payment: If the amount of an invoice was payable after the lapse of some time, subsequent to the receipt of goods, it should be ascertained that it has not been paid earlier and the benefit of cash discount, if any, has been obtained.
- 9 Inspection before taking delivery: Ensure that the goods were inspected on arrival and the delivery note and the goods inward note should be examined.

(COMPLETENESS) & MEASUREMENT

In addition to the procedures for establishing occurrence of purchases as discussed above, the auditor should:

- 1 Perform cut-off test
- 2 Ensure correct accounting treatment of goods – in – transit as per the agreed terms with the vendor regarding transfer of risk and reward of ownership in goods.
- 3 Obtain written representation from the management that all the purchases that took place during the year have been properly recorded in the books.

ANALYTICAL PROCEDURES (C&M)

Perform analytical procedures to obtain audit evidence as to overall reasonableness of purchase quantity and price which may include:

- 1 Consumption Analysis: Auditor should examine consumption of raw material from manufacturing account and compare the same with previous years with closing stock and ask for the reasons from management for any significant variations noticed.
- 2 Stock Composition Analysis: Auditor should collect reports from management for composition of stock
- 3 i.e. raw materials as a percentage of total stock and compare the same with previous year and ask for reasons from management for any significant variations noticed.
- 4 Ratios: Auditor should compare the creditors' turnover ratios and stock turnover ratios of the current year with previous years.

- 5** *Quantitative Reconciliation: Auditor should review quantitative reconciliation of closing stocks with opening stock, purchases and consumption.*

AUDIT OF TRADE PAYABLES AND OTHER CURRENT LIABILITIES

CLASSIFICATION OF LIABILITIES

A liability shall be classified as current when it satisfies any of the following criteria:

- (a) It is expected to be settled in the company's normal operating cycle;*
- (b) It is held primarily for the purpose of being traded;*
- (c) It is due to be settled within twelve months after the reporting date; or*
- (d) The company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.*

All other liabilities shall be classified as non-current.

AUDIT PROCEDURES

A. Compliance Procedure

The auditor should study and evaluate the system of internal control relating to liabilities to determine the NTE of his other audit procedures:

- i. The procedure should ensure proper recording of transactions.*
- ii. The payments made to trade payables should be in line with the approved policies.*
- iii. There should be specific procedures for payments against duplicate invoices as well as for payments against accounts which have remained unclaimed for quite some time.*
- iv. There should be a procedure for preparation of schedules of trade payables at periodic intervals.*
- v. Statements of account should be called for trade payables at periodic intervals and the discrepancies, if any, should be duly investigated and reconciled.*
- vi. All adjustments in the trade payable accounts such as rebates, allowances, commissions etc., should require approval of competent authority.*
- vii. There should be appropriate cut-off procedures in relation to transactions affecting the creditor accounts.*

B. Substantive Procedures

Verification of trade payables and other current liabilities may be carried out by employing the following procedures:

- (a) examination of records;*
- (b) direct confirmation procedure;*
- (c) analytical review procedures,*

The NTE of substantive procedures to be performed is, however, a matter of professional judgment of the auditor which is based, inter alia, on the auditor's evaluation of the effectiveness of the related internal controls.

Examination of Records

1. The auditor should check the adequacy of cut-off procedures adopted by the entity in relation to transactions affecting the trade payable accounts.
2. The auditor should examine the correspondence and other relevant documentary evidence to satisfy himself about the validity, accuracy and completeness of trade payables/ acceptances.
3. In case there are any unusual payments around the year-end, the auditor should examine them thoroughly.
4. The auditor should review subsequent transactions to identify/ confirm material liabilities outstanding at the balance sheet date.

(b) Direct Confirmation Procedures

1. The verification of balances by direct communication with trade payables is theoretically the best method of ascertaining whether the balances are genuine, accurately stated and undisputed, particularly where the internal control system is weak.
2. The auditor employs direct confirmation procedure with the consent of the entity under audit. There may be situations where the management of the entity requests the auditor not to seek confirmation from certain trade payables. In such cases, the auditor should consider whether there are valid grounds for such a request. Before accepting a refusal as justified, the auditor should examine any available evidence to support the management's explanations, e.g., correspondence between the entity and the trade payables.
3. While determining the information to be obtained, the form of confirmation, as well as the extent and timing of application of the confirmation procedure, the auditor should consider all relevant factors such as the effectiveness of internal control, the apparent possibility of disputes, inaccuracies or irregularities in the accounts, the probability that requests will receive consideration, and the materiality of the amounts involved.
4. The trade payables may be requested to confirm the balances either (a) as at the date of the balance sheet, or (b) as at any other selected date which is reasonably close to the date of the balance sheet.
5. The form of requesting confirmation from the trade payables may be either (a) the 'positive' form of request, wherein the creditor is requested to respond whether or not he is in agreement with the balance shown, or (b) the 'negative' form of request, wherein the creditor is requested to respond only if he disagrees with the balance shown.

(c) Analytical Procedures

In addition to the audit procedures discussed above, the following analytical review procedures may often be helpful as a means of obtaining audit evidence regarding the various assertions:

- (a) comparison of closing balances of trade payables with the corresponding figures for the previous year;

- (b) comparison of the relationship between current year trade payable balances and the current year purchases with the corresponding figures for the previous year;
- (c) comparison of actual closing balances of trade payables, etc., with the corresponding budgeted figures, if available;
- (d) comparison of current year's aging schedule of trade payables with the corresponding figures for the previous year;
- (e) comparison of significant ratios relating to trade payables with the similar ratios for other firms in the same industry, if available;
- (f) comparison of significant ratios relating to trade payables with the industry norms, if available.

Provision for Income Tax:

- (a) Obtain the computation of income and income tax prepared by the entity and verify whether it is as per the Income-tax Act, 1961 and Rules made thereunder.
- (b) Review adjustments, expenses, disallowed special rebates, etc. with particular reference to the last available completed assessment.
- (c) Examine relevant records and documents pertaining to advance tax, self-assessment tax and other demands.
- (d) Compute tax payable as per the latest applicable rates in the Finance Act.
- (e) Ensure that overall provisions on the date of the balance sheet is adequate having regard to current year provision, advance tax paid, assessment orders, etc.
- (f) Ensure that the requirements of AS 22 on Accounting for Taxes on Income have been appropriately followed for the period under audit.

AUDIT OF CASH AND CASH EQUIVALENTS

AUDIT PROCEDURE

Cash Balances

1. The auditor should carry out physical verification of cash at the date of the balance sheet. However, if this is not feasible, physical verification may be carried out, on a surprise basis, at any time shortly before or after the date of the balance sheet and reconcile the balance shown in the financial statements with the results of the physical verification considering the transactions for intervening period.
2. Besides physical verification at or around the date of the balance sheet, the auditor should also carry out surprise verification of cash during the year.
3. All cash balances in the same location should be verified simultaneously.
4. If there is any rough Cash Book or details of daily balance are separately kept, the auditor should test entries from the rough Cash Book with those in the Cash Book to prove that entries in the Cash Book are correct.

5. If any slip, chip or IOUs ('I owe you') are found during physical verification, the auditor should obtain explanations from a senior official of the entity as to the reasons for such IOUs remaining pending. It should also be ensured that such IOUs are not shown as cash-in-hand.
6. The auditor should also perform a cash sensitivity analysis by compiling a summary of total cash receipts and payments each month and analyzing the trends to see if there have been variations in any specific month and request brief descriptions from the management.
7. The quantum of torn or mutilated currency notes should be examined in the context of the size and nature of business of the entity.
8. If, during the course of the audit, it comes to the attention of the auditor that the entity is consistently maintaining an unduly large balance of cash in hand, he should carry out surprise verification of cash more frequently. If the cash in hand is not in agreement with the balance as shown in the books, he should seek explanations from a senior official of the entity. In case any material difference is not satisfactorily explained, the auditor should state this fact appropriately in his audit report. Auditor should satisfy himself regarding the necessity for such large balances having regard to the normal working requirements of the entity. The entity may also be advised to deposit the whole or the major part of the cash balance in the bank at reasonable intervals.
9. Where post-dated cheques are in hand on the balance sheet date, the auditor should verify that they have not been accounted for as collections during the period under audit.

CASH AT BANK

1. The auditor should advise the entity to send a letter to all its bankers to, directly confirm the balances to the auditor.
2. The auditor should examine the bank reconciliation statement prepared as on the last day of the year to identify cheques issued by the entity but not presented for payment, and cheques deposited but not credited in the bank account and their tracing in subsequent period.
3. The auditor should pay special attention to those items in the reconciliation statements which are outstanding for an unduly long period.
4. Where a large number of cheques has been issued/deposited in the last few days of the year, and a sizeable proportion of such cheques has subsequently remained unpaid/uncleared, this may indicate an intention of understating creditors/debtors or understating/ overstating bank balances. In such a case, it may be appropriate for the auditor to obtain confirmations from the parties concerned, especially in respect of cheques involving large amounts. The auditor should also examine whether a reversal of the relevant entries would be appropriate under the circumstances.
5. In respect of fixed deposits, the relevant receipts/certificates, duly supported by bank advices, should be examined.
6. Remittances shown as being in transit should be examined with reference to their credit in the bank in the subsequent period.
7. Where material amounts are held in bank accounts which are blocked, e.g., in foreign banks with exchange control restrictions or any banks which are under moratorium or liquidation, the auditor should examine whether the relevant facts have been suitably disclosed in the financial statements.

8. Where the auditor finds that the number of bank accounts maintained by the entity is disproportionately large in relation to its size, the auditor should exercise greater care in satisfying himself about the genuineness of banking transactions and balances.

DIRECT CONFIRMATION PROCEDURE

- (a) Auditor is required to confirm all year end account balance maintained with the bank.
- (b) In case of any discrepancies, client should be asked to investigate and reconcile the discrepancies, including seeking written explanations/clarifications from the banks/financial institutions on any unresolved queries.
- (c) Auditor should emphasize for confirmation of 100% of bank account balances. In remote situations where no reply is received, the auditor should perform additional testing regarding the balances. This testing could include:
 - Agreeing the balance to bank statement received by the Company or internet/online login to account in auditor's personal presence;
 - Prepare a final summary of the results of the circularization and draw the final conclusion.

AUDIT OF INVENTORIES

AUDITOR'S PROCEDURES FOR VERIFICATION

Verification of inventories may be carried out by employing the following procedures:

- (a) examination of records;
- (b) attendance at stock-taking;
- (c) obtaining confirmations from third parties;
- (d) examination of valuation and disclosure; and
- (e) analytical review procedures. The NTE of audit procedures to be performed is, however, a matter of professional judgment of the auditor.

EXAMINATION OF RECORDS (C)

- Auditor should examine the stock records with reference to the relevant basic documents like goods received notes, inspection reports, material issue notes, bin cards, etc.
- If the entity does not maintain detailed stock records, the auditor would have to suitably extend the extent of application of other audit procedures.
- Examine non-financial information related to inventory, such as weights and other measurements.
- Perform purchase and sales cut-off tests. Trace shipping documents (bills of lading and receiving reports, warehouse records, and inventory records) to accounting records immediately before and after year-end.
- With respect to tagged inventory, perform tests for omitted transactions and tests for invalid transactions.
- Verify the clerical and arithmetical accuracy of inventory listings.

ATTENDANCE AT STOCK-TAKING (E)

- (a) The physical verification of stock is the responsibility of the management. The auditor may find it appropriate to attend the stock taking, if the inventory value is material in his opinion.*
- (b) The extent of participation in inventory taking depends upon the internal control system prevailing, results of examination of inventory records and analytical review procedures.*
- (c) When auditor attend inventory taking, he ensure that the instructions given for inventory taking is followed.*
- (d) He test checks few items by himself for their existence and quantum. He selects to test high value items importantly.*
- (e) The physical conditions of stock - like its age, deterioration, obsolescence etc., are looked into by auditor. (f) The auditor reviews stores records and notes down major discrepancies for reconciling them in a subsequent date.*
- (f) The cut off arrangement is also looked into ensure that the entity accounts for stock for which liability had been booked and excludes stock which had been sold.*

CONFIRMATIONS FROM THIRD PARTIES (E)

- Where significant stocks of the entity are held by third parties, the auditor should examine that the third parties are not such with whom it is not proper that the stocks of the entity are held.*
- The auditor should also directly obtain from the third parties written confirmation of the stocks held.*
- Arrangements should be made with the entity for sending requests for confirmation to such third parties.*

EXAMINATION OF VALUATION & DISCLOSURES (V&P)

- i. The auditor should satisfy himself that the valuation of inventories is in accordance with the AS 2, "Valuation of Inventories".*
- ii. The auditor should examine the evidence supporting the assessment of NRV. In this regard, the auditor should particularly examine whether appropriate allowance has been made for defective, damaged and obsolete and slow-moving inventories in determining the NRV.*
- iii. The auditor should satisfy himself that the inventories have been disclosed properly in the financial statements. Where the relevant statute lays down any disclosure requirements in this behalf, the auditor should examine whether the same have been complied with.*

a) For Raw materials and consumables

- ☐ *Ascertain what elements of cost are included e.g. carriage inward, non- refundable duties etc.*
- ☐ *If standard costs are used, enquire into basis of standards; how these are compared with actual costs and how variances are analyzed and accounted for/ treated in accounting records.*
- ☐ *Test check cost prices used with purchase invoices received in the month(s) prior to counting.*
- ☐ *Follow up valuation of all damaged or obsolete inventories noted during observance of physical counting with a view to establishing a realistic net realizable value.*

b) For Work in progress

To carefully assess the stage of completion of the WIP for assessing the appropriateness of its valuation, the auditor may perform the following:

- hold discussions with the personnel concerned, and
- Ascertain how the various stages of production/ value additions are measured and in case estimates are made, understand the basis for such estimates.
- Ascertain what elements of cost are included. If overheads are included, ascertain the basis on which they are included and compare such basis with the available costing and financial data/ information maintained by the entity.
- Ensure that material costs exclude any abnormal wastage factors.
- obtain expert opinion, where necessary.

c) For Finished goods and goods for resale

- Enquire as to what costs are included, how these have been established and ensure that the overheads included have been determined based on normal costs and appear reasonable in relation to the information disclosed in the financial statements.
- Ensure that inventories are valued at net realizable value if they are likely to fetch a value lower than their cost. For any such items, also verify if the relevant semi/ partly processed inventories (work in progress) and raw materials have also been written down.

d) Follow up for items that are obsolete, damaged, slow moving and ascertain the possible realizable value of such items. Carefully examine the valuation of obsolete and damaged inventory.

For the purpose, request the client to provide inventory ageing split and follow up for any inventories which at time of observance of physical counting were noted as being damaged or obsolete.

- Compare recorded costs with replacement costs.
- Examine vendor price lists to determine if recorded cost is less than current prices.
- Calculate inventory turnover ratio. Obsolete inventory may be revealed if ratio is significantly lower.
- In manufacturing environments, test overhead allocation rates and ensure that only direct labor, direct material and overhead have been included.
- Verify the correct application of lower-of- cost-or-net realizable value principles.

VERIFICATION OF GOODS ON CONSIGNMENT (R)

Such transaction should be vouched and verified as under—

- (a) Vouch the Proforma invoice sent with goods to ascertain the quantity and value of goods sent.
- (b) Freight evidences given by the transporter like Challan, Bill, Receipt for freight charged.
- (c) Insurance charge to be verified from cover note and premium paid receipt issued by Insurance Company.

- (d) Account sale sent by consignee, referring to sale price of the goods sold, expenses incurred by him and stock remained unsold.
- (e) Obtain confirmation from consignee for the goods held on consignment on balance sheet date.
- (f) Unsold goods should have been taken in the closing stock valued properly inclusive of expenses (Proportionate) incurred by consignee.
- (g) Journal entries relating to such transaction be verified from the books of the Company.

ANALYTICAL REVIEW PROCEDURES

Auditor may also apply following analytical review procedures so as to obtain audit evidence regarding the various assertions:

1. Reconciliation of quantities of opening stocks, purchases, production, sales and closing stocks;
2. Comparison of closing stock quantities and amounts with those of the previous year;
3. Comparison of the relationship of current year stock quantities and amounts with the current year sales and purchases, with the corresponding figures for the previous year;
4. Comparison of the composition of the closing stock [e.g., raw materials as a percentage of total stocks, WIP as a percentage of total stocks] with the corresponding figures for the previous year;
5. Comparison of current year gross profit ratio with the gross profit ratio for the previous year;
6. Comparison of actual stock, purchase and sales figures with the corresponding budgeted figures, if available;
7. Comparison of yield with the corresponding figure for the previous year;
8. Comparison of significant ratios relating to inventories with the similar ratios for other firms in the same industry, if available;
9. Comparison of significant ratios relating to inventories with the industry norms, if available.

AUDIT OF EMPLOYEE BENEFIT EXPENSE

AUDIT PROCEDURE

- Obtain an understanding of process of recording employee attendance.
- Obtain a list of employees along with a monthly movement split between new hires, leavers and continuing employees.
- In case of new employees, select few cases on random basis and obtain the appointment letter and verify whether the salary for first month and subsequent months was processed as per the agreed terms.
- In case of employees who resigned, select few cases on random basis and obtain their full and final computation and verify whether all their dues including post-retirement benefits like gratuity, leave encashment have been paid and whether the respective employee's acknowledgement on final computation has been obtained.

- Obtain the monthly salary registers for the complete year. Compile a monthly payroll reasonability by calculating the average salary per employee per month and compare with the previous year and preceding month.
- Verify whether provision has been made for all employee benefits and obligations like bonus, gratuity, and leave encashment.
- In case provident fund (PF), employee state insurance (ESI) are applicable to the entity, determine a reasonable amount by applying the rate to the basic wages and comparing to the amount recorded in books and analyse reasons for variance, if any.
- Perform analytical procedures to obtain audit evidence as to overall reasonableness of employee benefit expense.

AUDIT OF OTHER INCOMES

(Int., Div, Profit/Loss on sale of Investments etc.)

RECOGNITION OF INCOME

Interest on Fixed Deposits

Interest income on fixed deposits is recognized on a time proportion basis taking into account the amount outstanding and the applicable interest rate.

Interest Income from debt instruments

Interest income from debt instruments is recognized using the effective interest rate method.

Dividend

Dividends are recognised in the statement of profit and loss only when:

- the entity's right to receive payment of the dividend is established;
- it is probable that the economic benefits associated with the dividend will flow to the entity; and
- the amount of the dividend can be measured reliably.

Gain (Loss) on investments

Gain/(Loss) on sale of investment is recorded as other income on transfer of title from the entity and is determined as the difference between the redemption price and carrying value of the investments.

AUDIT PROCEDURES

I. Interest on Fixed Deposits

- Obtain a list of all fixed deposits exist at the beginning of the year and newly made during the audit, along with the applicable interest rate and the number of days for which the deposit was made.
- Verify the arithmetical accuracy of the interest calculation by multiplying the deposit amount with the applicable rate and number of days during the period under audit.
- For deposits outstanding as at the year end, obtain direct confirmation from the respective bank/financial institution.

- Obtain a confirmation of interest income from the bank and verify that the interest income as per bank reconciles to the calculation shared by the entity.
- Obtain a copy of Form 26AS (TDS) and reconcile the interest reflected therein to the calculation shared by client.

2. Dividend

Verify that the dividend is recognised in the statement of profit and loss only when the entity's right to receive payment of the dividend is established, provided it is probable that the economic benefits associated with the dividend will flow to the entity and the amount of the dividend can be measured reliably.

3. Gain (Loss) on sale of investment in Mutual Funds

- Verify that Gain/(loss) on sale of investment in mutual funds is recognised as other income only on transfer of title from the entity and is determined as the difference between the redemption price and carrying value of the investments.
- For this purpose, obtain the mutual fund statement and trace the gain/loss as recorded in the books of account to the gain/ loss as reflected in the statement.

SALE OF SCRAP:

- i. Review the internal control as regards generation, storage and disposal of scrap.
- ii. Check whether the organization is maintaining reasonable record for generation of scrap.
- iii. Analyze the raw material used, production and generation pattern of scrap and compare the same with figures of earlier year.
- iv. Check the rates at which scrap has been sold and compare the rate with previous year.
- v. Vouch sales, with invoices raised, advertisement for tender, rate contract with scrap dealers.
- vi. Ensure that there exists a proper control procedure to identify scrap and good units and they are not mixed up and sold as scrap.
- vii. Make an overall assessment of the value of realization from scrap as to its reasonableness

AUDIT OF OTHER EXPENSES

(Power & Fuel, Rent, Repairs, Insurance, etc.)

COMPOSITION OF OTHER EXPENSES

Other expenses may comprise of following expenses:

- (a) Consumption of stores and spare parts;
- (b) Power and fuel;
- (c) Rent;
- (d) Repairs to buildings;

- (e) Repairs to machinery;
- (f) Insurance;
- (g) Rates and taxes, excluding, taxes on income;
- (h) Miscellaneous expenses.

AUDIT PROCEDURES

1. Rent expense

- Obtain a month wise schedule of rent payment along with the rent agreements.
- Examine whether rent expense has been recorded for all 12 months and whether the rent paid is as per the underlying agreement.
- Examine whether agreement contains any escalation clause, if yes, verify whether rent has been increased/adjusted during the period only as per escalation clause.
- Verify whether the agreement is in the name of the entity.
- Verify whether the expense pertains to premises used for running business operations of the entity.

2. Power and fuel expense

- Obtain a month wise expense schedule of payment towards power and fuel along with the power bills.
- Examine whether the expenses have been recorded for all 12 months.
- Compile a month wise summary of power units consumed and the applicable rate and check the arithmetical accuracy of the bill raised on monthly basis.
- Analyse the monthly power units consumed by linking it to units of finished goods produced and investigate reasons for variance in monthly trends.

3. Insurance expense

- Obtain a summary of insurance policies taken along with their validity period
- Verify whether the expense has been correctly classified between prepaid and expense for the period based on number of days.

4. Legal and professional expenses

- Obtain a month wise and consultant wise summary.
- In case of monthly retainer ship agreements, verify whether the expenditure for all 12 months has been recorded correctly.
- For non-recurring expenses, select a sample on random basis and vouch for the attributes discussed above.

- Special focus should be given while vouching for legal expenses as the same may highlight a dispute for which the entity may not have made any provision and the matter may also not have been discussed/highlighted to the auditor for his specific consideration.

5 Travel, repair and maintenance, printing and stationery, miscellaneous expenses

- Select a sample on random basis and vouch for the occurrence, completeness, measurement and appropriate disclosure.
- Wherever possible, the auditor should try and prepare a summary of expenditure on monthly basis and then analytically compare the trends.
- In addition, auditor should perform analytical procedures to obtain audit evidence as to overall reasonableness of other expense which may include expenditure per unit produced.
- Auditor should analyse expense per unit produced and compare the same with previous years and prevent industry trends and ask for the reasons from Management if any significant variations are found.

6. Foreign travel expenses.

- Examine Travelling Allowance bills submitted by the employees stating the details of tour, details of expenses, etc.
- Verify that the tour programme was properly authorised by the competent authority.
- Check the T.A. bills along with accompanying supporting documents such as air tickets, travel agents bill and hotel bills with reference to the internal rules for entitlement of the employees and also make sure that the bills are properly passed.
- See that the tour report accompanies the T.A. bill. The tour report will show the purpose of the tour. Satisfy that the purpose of the tour as shown by the tour report conforms to the authorisation for the tour.
- Check Reserve Bank of India's permission, if necessary, for withdrawing the foreign exchange. For a company the amount of foreign exchange spent is to be disclosed separately in the accounts as per requirement of Schedule III to the Companies Act, 2013 and Accounting Standard II "The Effects of Changes in Foreign Exchange Rates".

AUDIT OF PROVISIONS AND CONTINGENT LIABILITIES

FEATURES OF PROVISIONS AND CONTINGENT LIABILITIES PROVISION

A provision is a liability which can be measured only by using a substantial degree of estimation.

A provision should be recognised when:

- (a) an enterprise has a present obligation as a result of a past event;
- (b) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- (c) a reliable estimate can be made of the amount of the obligation. If these conditions are not met, no provision should be recognised.

CONTINGENT LIABILITY

A contingent liability is:

- (a) a possible obligation that arises from past events and the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the enterprise; or
- (b) a present obligation that arises from past events but is not recognised because:
 - i. it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or
 - ii. a reliable estimate of the amount of the obligation cannot be made.

AUDIT PROCEDURE FOR VERIFICATION

1. Obtain a list of all provisions and compare them with balances in the ledger.
2. Inspect the underlying arrangements like appointment agreement with employees to understand the entity's commitment towards defined benefits, agreement with customers to assess warranty commitments, any legal and other claims on the entity i.e. litigations.
3. Obtain the underlying working and the basis for each of the provisions made, from the management and verify whether the same is complete and accurate.
4. Review minutes of the meetings of the Board of Directors or other similar bodies.
5. Review list of pending law suits and obtain a certificate and opinion of the lawyer dealing with the cases.
6. Review of records relating to contingent liabilities maintained by the company.
7. Review of terms and condition of grants and subsidy availed.
8. Obtain representation from the management that all known contingent liabilities have been included in the accounts and disclosed properly.
9. Ensure that proper disclosure is made of all the contingent liabilities as per the requirements of AS-29 and Schedule III to the Companies Act, 2013.

THE END

CONCEPT-26: AUDIT OF BANKS**Q.NO.1. WHAT ARE THE PECULIARITIES INVOLVED IN BANKS?****ANSWER:**

Peculiarities involved:

1. Huge volumes and complexity of transactions.
2. Wide geographical spread of banks' network.
3. Large range of products and services offered.
4. Extensive use of technology.
5. Strict vigilance by the banking regulator etc.

Q.NO.2. WHAT ARE THE VARIOUS TYPES OF BANKING ENTITIES?**ANSWER:**

A. COMMERCIAL BANKS: Commercial banks are the widest spread banking institutions in India, that provide a number of products and services to general public and other segments of economy. Two of its main functions are:

- a. Accepting deposits and
- b. Granting advances.

B. REGIONAL RURAL BANKS: Regional Rural Banks known as RRBs are the banks that have been set up in rural areas in different states of the country to cater to the basic banking and financial needs of the rural communities.

Examples: Punjab Gramin Bank, Tripura Gramin Bank, Allahabad UP Gramin Bank, Andhra Pradesh Grameen Vikas Bank, etc.

C. CO-OPERATIVE BANKS: Co-operative Banks function like Commercial Banks only but are set up on the basis of Cooperative Principles and registered under the Cooperative Societies Act of the respective state or the Multistate Cooperative Societies Act and usually cater to the needs of the agricultural and rural sectors.

Examples: The Gujarat State Co-operative Bank Ltd., Chhatisgarh Rajya Sahakari Bank Maryadit, etc.

D. PAYMENTS BANKS: Payments Banks are a new type of banks which have been recently introduced by RBI. They are allowed to accept restricted deposits but they cannot issue loans and credit cards.

However, customers can open Current & Savings accounts and also avail the facility of ATM cum Debit cards, Internet-banking & Mobile banking.

Examples: Airtel Payments Bank, India Post Payments Bank, Paytm Payments Bank, etc.

E. DEVELOPMENT BANKS: Development Banks had been conceptualized to provide funds for infrastructural facilities important for the economic growth of the country.

Examples: Industrial Finance Corporation of India (IFCI), Industrial Development Bank of India (IDBI), Small Industries Development Bank of India (SIDBI), etc.

F. SMALL FINANCE BANKS: Small Finance Banks have been set up by RBI to make available basic financial and banking facilities to the unserved and unorganized sectors like small marginal farmers, small & micro business units, etc.

Examples: Equitas Small Finance Bank, AU Small Finance Bank, etc.

Q.NO.3. WRITE ABOUT THE REGULATORY FRAMEWORK FOR BANKING COMPANIES?

ANSWER:

1. RBI Act 1934
2. Banking Regulation Act, 1949. State Bank of India Act, 1955.
3. Companies Act, 2013. State Bank of India (Subsidiary Banks) Act 1959.
4. Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970.
5. Regional Rural Banks Act, 1976.
6. Banking Companies (Acquisition and Transfer of Undertakings) Act, 1980.
7. Information Technology Act, 2000.
8. Prevention of Money Laundering Act, 2002.
9. Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002.
10. Credit Information Companies Regulation Act, 2005.
11. Payment and Settlement Systems Act, 2007.

Q.NO.4. WRITE A SHORT NOTE ON: REPORTING BY AUDITOR OF A BANK.

ANSWER

A. REPORTING TO CG:

In the case of a nationalised bank, the auditor is required to make a report to the Central Government in which he must state the following:

1. Whether the balance sheet and profit and loss containing all the necessary particulars and is properly drawn up so as to exhibit a true and fair view of the affairs and Profit or loss of the bank.
2. Whether he has been given any explanation or information requested, and whether it is satisfactory;
3. Whether the transactions of the bank, which have come to his notice, have been within the powers of that bank.
4. Whether the returns received from the offices and branches of the bank have been found adequate for the purpose of his audit.

B. FORMAT OF REPORT:

1. **Compliance with SA'S:** The auditors, central as well as branch, should also ensure that the audit report issued by them complies with the requirements of relevant Standards on Auditing.
2. **Additional disclosure by Central Auditor:** The auditor should ensure that not only information relating to number of unaudited branches is given but quantification of advances, deposits, interest income and interest expense for such unaudited branches has also been disclosed in the audit report. (SA 600 requirement)
3. **Matters to be stated as per Sec. 143:** It may be noted that, in addition to the aforesaid, the auditor of a banking company is also required to state in his report in respect of matters covered by Section 143 of the Companies Act, 2013.
4. **CARO applicability:** The reporting requirements relating to the Companies (Auditor's Report) Order, 2020 is not applicable to a banking company.

C. LONG FORM AUDIT REPORT:

1. The terms of appointment of auditors of public sector banks, private sector banks and foreign banks (as well as their branches), require the auditors to also furnish a long form audit report (LFAR).
2. The matters in the long form audit report have been specified by the Reserve Bank of India.
3. The LFAR is to be submitted before 30th June every year
4. To ensure timely submission of LFAR, proper planning for completion of the LFAR is required.
5. While the format of LFAR does not require an executive summary to be given, members may consider providing the same to bring out the key observations from the whole document.

D. REPORTING TO RBI (or) REPORTING OF FRAUD:

1. **As per RBI Circular:** The RBI issued a Circular relating to Legal Aspects of Bank Frauds applicable to all scheduled commercial banks (excluding Regional Rural Banks).
2. The said circular provided as under: "If an accounting professional, whether in the course of internal or external audit, finds anything susceptible to be fraud or fraudulent activity or act of excess power or smell any foul play in any transaction, he should refer the matter to the regulator. Any deliberate failure on the part of the auditor should render himself liable for action".
3. As per SA 240: Also, if the auditor while performing his normal duties comes across any fraud, he should report the matter to the RBI in addition to Chairman/Managing Director/Chief Executive of the concerned bank.

4. It must be noted that auditor is not expected to look into each and every transaction but to evaluate the system as a whole. Therefore, if the auditor while performing his normal duties comes across any instance, he should report the matter to the RBI in addition to Chairman/Managing Director/Chief Executive of the concerned bank.

E. DUTY TO REPORT ON FRAUDS UNDER SECTION 143(12) OF THE COMPANIES ACT, 2013: Same as company auditors appointed under section 139 of the company's act, 2013. This is in addition to reporting to RBI.

Auditing Aspects of Banks' Financial Statements

Apart from the general considerations such as confirming the validity of his appointment, communicating with the previous auditor, agreeing on the terms of audit engagements etc. the auditor should consider the following aspects in conducting the audit of a bank.

General Issues:

- a) **Understand the Bank and its Environment:** Obtain an understanding of the bank and the control environment to identify and assess risk and develop an audit plan to determine the effectiveness of controls and address specific risk issues.
- b) **Understand the Accounting Process:** Obtain an understanding of the accounting process – computerised or manual – of the bank.
- c) **Understand the Risk Management Process:** Obtain a clear understanding of the process adopted by the bank for managing financial as well as operational risks.
- d) **Develop a detail audit plan.**
- e) **Determine audit materiality**
- f) **Obtain a detail understanding of the relevant BASEL framework applicable for the bank.**
- g) **Determine the extent of reliance on reports of previous auditor, RBI reports, internal audit report etc.**

Specific Issues:

A. Advances: In relation to advances made by bank an auditor needs to review the followings:

- (i) Ensure that the internal control is in place in relation to advances made.
- (ii) Scrutinise the subsidiary, ledger, & control accounts
- (iii) Ensure the proper documentation of account.
- (iv) Scrutinise the overdue account and scheme for recovery of such amount.

B. Cash in hand: The auditor should

- (i) Ensure that the internal control is in place.
- (ii) Visit the bank branch and inspect physical cash and ensure that it tallies with the bank's cash book balance.
- (iii) Verify the amount of foreign currency held by bank and its translation at market rate on the date at which financial statement is prepared.

C. Balance with RBI: The auditor should

Inspect the ledger balance in each account with (a) bank confirmation certificates from Reserve Bank of India and (b) Reconciliation Statement.

D. Balance with Other Bank: The auditor should

Inspect the reconciliation statement to ensure that no debit or credit for interest have been taken to Revenue account to the year.

- (i) *Examine the large transition and balances with banks outside India.*
- (ii) *Ensure that they are converted at market rate as on financial statement preparation date.*

E. Money at call & short notice: He should

- (i) *Examine the system of authorisation for money at call and short notice.*
- (ii) *Ensure that call loan made by bank are not netted off against call loan received by it.*
- (iii) *Ensure that money market lending for more than 6th days are not classified under this head but as a deposit or advance based on their nature of lending.*

F. Fixed and other Assets: He should

The auditor has to ensure the following while auditing the fixed assets held by banks:

- (i) *Ensure that accounting method of bank is appropriate and ownership document is adequate.*
- (ii) *Examine with reference to schedule of fixed assets to find new assets acquired.*
- (iii) *Examine sale deed in relation to sale of assets by bank.*
- (iv) *Ensure appropriateness of basis of revaluation of fixed assets.*
- (v) *Ensure compliance of Section 9 of Banking Regulation Act, 1949.*

G. Borrowings: He should

- (i) *Ensure that the amount has been properly disclosed for borrowing in India from RBI and borrowing from outside India.*
- (ii) *Ensure that the rate of interest is commensurate with the duration of borrowing.*
- (iii) *Verify whether the borrowings of money at call and short notice are properly authorized.*

H. Deposits: He should

- (i) *Ensure that the interest accrued but not due on deposits has not been taken under other liabilities and provision*
- (ii) *See whether there is any instance of window dressing.*

I. Capital: He should

- (i) *Examine the opening balance of capital.*
- (ii) *Examine the special resolution of shareholders' meeting or MOA about increase in authorized capital during the year.*
- (iii) *Examine the prospectus regarding increase in subscribed/ paid up capital.*
- (iv) *Examine the Government notification for any fresh contribution from them.*

J. Reserve and Surplus: He should

- (i) *Examine the opening balance of different type of reserve, addition/ deduction from reserves, reason for appropriation from such account and dividend paid by bank.*
- (ii) *In respect of foreign branch ensure compliance with foreign laws*

K. Bills Payable:

- (i) *He should Evaluate the existence, effectiveness and continuity of internal controls over bills payable. Such controls should usually include the following:*
 - *Drafts, mail transfers, traveller's cheques, etc., should be made out in standard printed forms.*

➤ *Unused forms relating to drafts, traveller's cheques, etc., should be kept under the custody of a responsible officer.*

- (ii) *The bank should have a reliable private code known only to the responsible officers of its branches. Coding and decoding of the telegrams should be done only by such officers.*
- (iii) *The signatures on a demand draft should be checked by an officer with the specimen signature book.*
- (iv) *The telegraphic transfers and demand drafts issued by a branch should be immediately confirmed by advices to the branches concerned. On payment of these instruments, the paying branch should send a debit advice to the originating branch.*
- (v) *If the paying branch does not receive proper confirmation of any telegraphic transfers or demand draft from the issuing branch, it should take immediate steps to ascertain the reasons. In case an instrument prepared on a security paper, e.g., draft, has to be cancelled (say, due to error in preparation), it should be examined whether the manner of cancellation is such that the instrument cannot be misused. Cases of frequent cancellation and reissuance of drafts, pay orders, etc., should be carefully looked into by a responsible official.*

L. Contingent Liabilities:

- (i) *In respect of contingent liabilities, the auditor is primarily concerned with seeking reasonable assurance that all contingent liabilities are identified and properly valued. To this end, the auditor should generally follow the audit procedures given below:*
- (ii) *The auditor should verify whether there exists a system whereby the non-fund-based facilities to parties are extended only to their regular constituents, etc.*
- (iii) *Ascertain whether there are adequate internal controls to ensure that transactions giving rise to contingent liabilities are executed only by persons authorised to do so and in accordance with the laid down procedures.*
- (iv) *The auditor should also examine whether in case of LCs (Letter of Credits) for import of goods, the payment to the overseas suppliers is made on the basis of shipping documents and after ensuring that the said documents are in strict conformity with the terms of LCs.*
- (v) *He should also ascertain whether the accounting system of the bank provides for maintenance of adequate records in respect of such obligations and whether the internal controls ensure that contingent liabilities are properly identified and recorded.*
- (vi) *He must perform substantive audit tests to establish the completeness of the recorded obligations. Such tests include confirmation procedures as well as examination of relevant records in appropriate cases.*
- (vii) *He should review the reasonableness of the year-end amount of contingent liabilities in the light of previous experience and knowledge of the current year's activities.*
- (viii) *He should also review whether comfort letters issued by the bank has been considered for disclosure of contingent liabilities.*

M. Bills for Collection

- (i) *The auditor should examine whether the bills drawn on other branches of the bank are not included in bills for collection.*

- (ii) *Inward bills are generally available with the bank on the closing day and the auditor may inspect them at that time. The bank dispatches outward bills for collection soon after they are received. They are, therefore, not likely to be in hand at the date of the balance sheet. The auditor may verify them with reference to the register maintained for outward bills for collection.*
- (iii) *The auditor should also examine collections made subsequent to the date of the balance sheet to obtain further evidence about the existence and completeness of bills for collection.*
- (iv) *In regard to bills for collection, the auditor should also examine the procedure for crediting the party on whose behalf the bill has been collected. The procedure is usually such that the customer's account is credited only after the bill has actually been collected from the drawee either by the bank itself or through its agents, etc. This procedure is in consonance with the nature of obligations of the bank in respect of bills for collection.*

N. Treasury Operation-Foreign Exchange and Derivatives:

- (i) *While innovative products and ways of trading create new possibilities for earnings for the bank, they also introduce novel and sometimes unfamiliar risks that must be identified and managed.*
- (ii) *Failure to do so can result losses entailing financial and reputational consequences that linger long after the loss has been recognized in financial statements. Hence, auditor should assess controls as part of audit work.*
- (iii) *It is imperative that an auditor obtains a complete overview of the treasury operations of a bank before the commencement of the statutory audit. After conducting appropriate risk assessment of the treasury processes, the audit program needs to be designed in a manner that it dovetails into not just the control assessments of the treasury process but there is an assurance that the figures appearing in the financial statements as well as the disclosures are true and reflect fairly the affairs of the bank treasury*

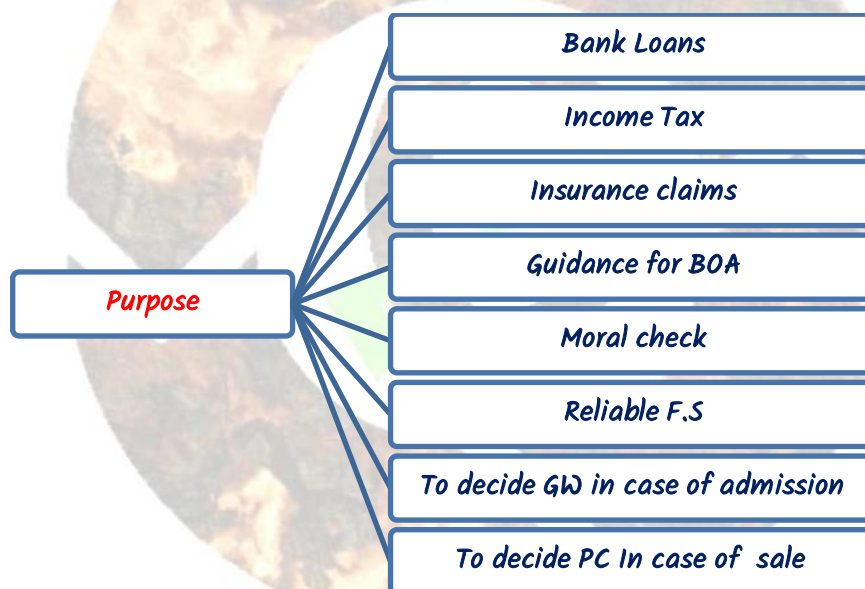
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THE END

CONCEPT 27: AUDIT OF DIFFERENT TYPES OF ENTITIES

AUDIT OF SOLE PROPRIETOR:

- Not Compulsory.
- Non statutory Audit – So LOE is Important here.
- Less No. of Transactions.
- Internal controls – Weak –Due to no professional management.
- Detail checking
- Reporting.



PARTNERSHIP FIRM:

- Same points of Sole Proprietor.
- Compliance with Partnership Deed.
- Obtain deed – read T&C
- Deed signed by all the partners.
- Minutes of partners (if any)
- Verifying business conducted is in accordance with Deed.
- Verifying BOA are reasonable.

PARTNERSHIP:

- Verify whether the working partners decisions are in prejudicial to the sleeping partners.
- Verify that transaction are authorized by the deed

SMALL COMPANIES:

- Statutory Audit.
- Management responsibilities.
- Internal controls- Weak.
- Detailed Checking.
- Sec-143- Reporting
- Ownership is not separate from management.
- Information depends on 2 or 3 persons only.
- So take written representations.
- Compliance of provisions of Co. Act 2013.
- Perform Analytical procedures

INCOMPLETE RECORDS:

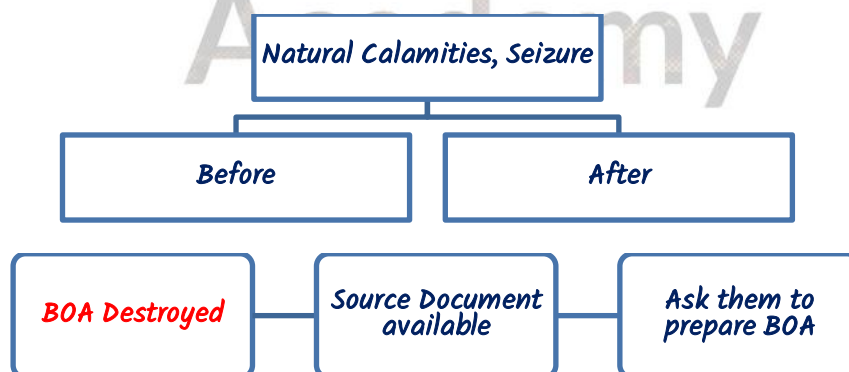


INCOMPLETE RECORDS:

- Management Responsibilities – complied or not
- If management responsibilities are not followed then reject the Audit.

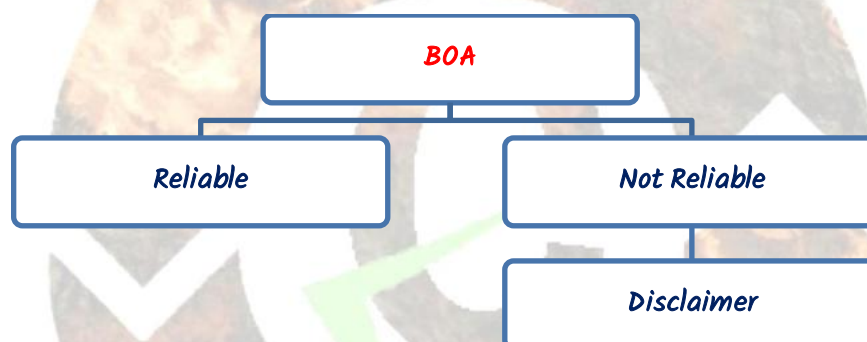
IN CASE OF SINGLE ENTRY:

- Reject the Audit- Because Double entry system is not followed- BOA not maintained- So Mng Responsibilities.



IF SOURCE DOCUMENT IS DESTROYED:

- Bank statement- Receipts & Payments.
- Statements of Accounts from Debtors, Creditors, & Other Parties.
- Physical Verification of Inventory, Fixed Assets.
- F.S Submitted to Bank.
- If they are seizure – Photo copies.
- Insurance Claims –in case of Natural Calamities.
- Perform Analytical Procedures after performing the procedures and ensure whether BOA built are reliable or not.

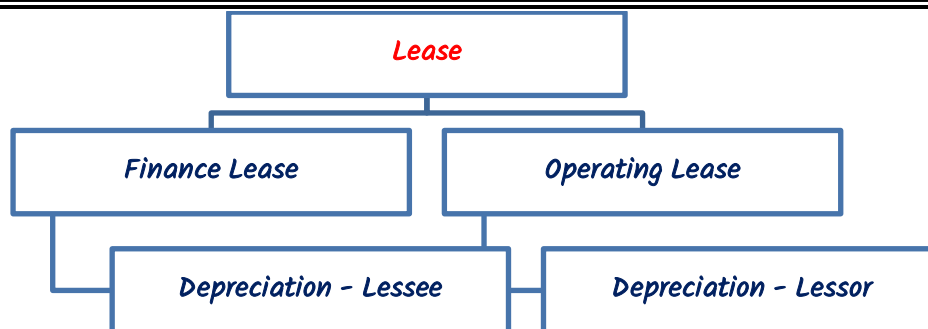


HIRE PURCHASE TRANSACTIONS:

- It is a NBFC
- MOA & AOA- Object Clause
- BOD Minutes.
- Verify whether RBI & Other Rules followed or not.
- We are indirectly giving loan – So see credit appraisal System
- Hire Purchase Agreement
- T & C in Hire purchase Agreement.- Installments- Due Date – Failure to Payment – Safe guarding of Assets – Insurance.
- Repayment
- Recovery steps- In case of improper payment.
- Recognition of Income.
- Follow prudential norms or not – Provision for NPA

LEASING TRANSACTIONS:

- Same points of Hire Purchase.

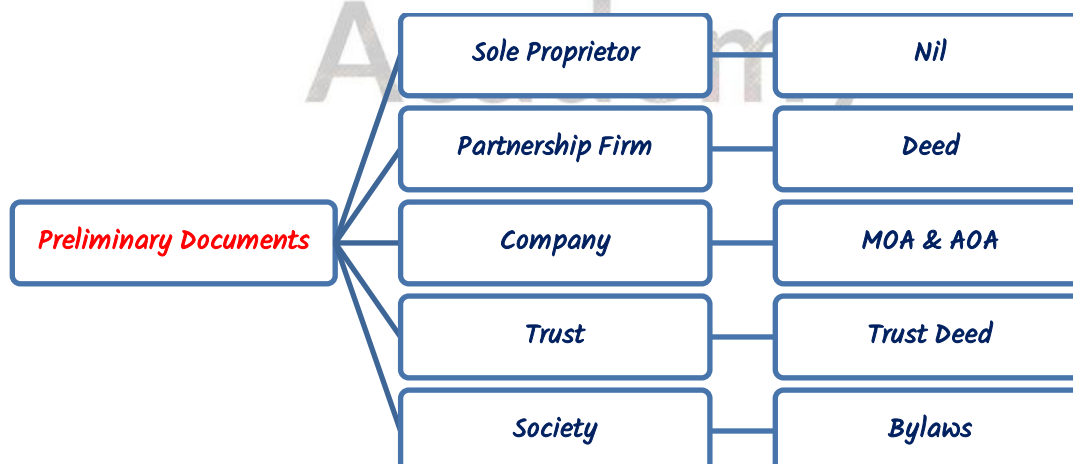


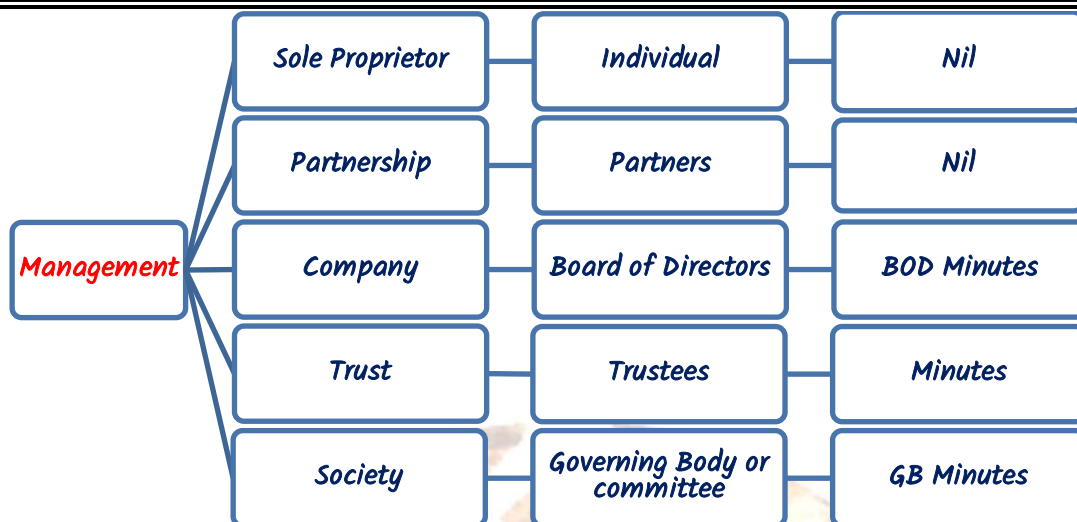
IMPORTANT AREAS:

- Education Institutions.
- Club Houses.
- Cinema Theater.
- Hospitals.
- Hotels.
- Charitable Institutions.
- NGO.
- Local Bodies.

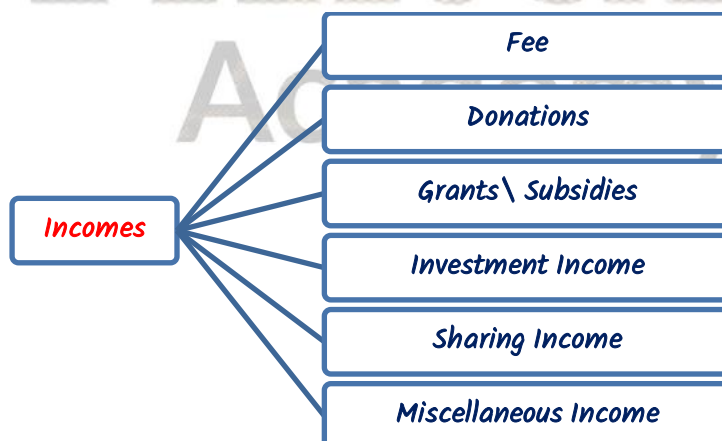
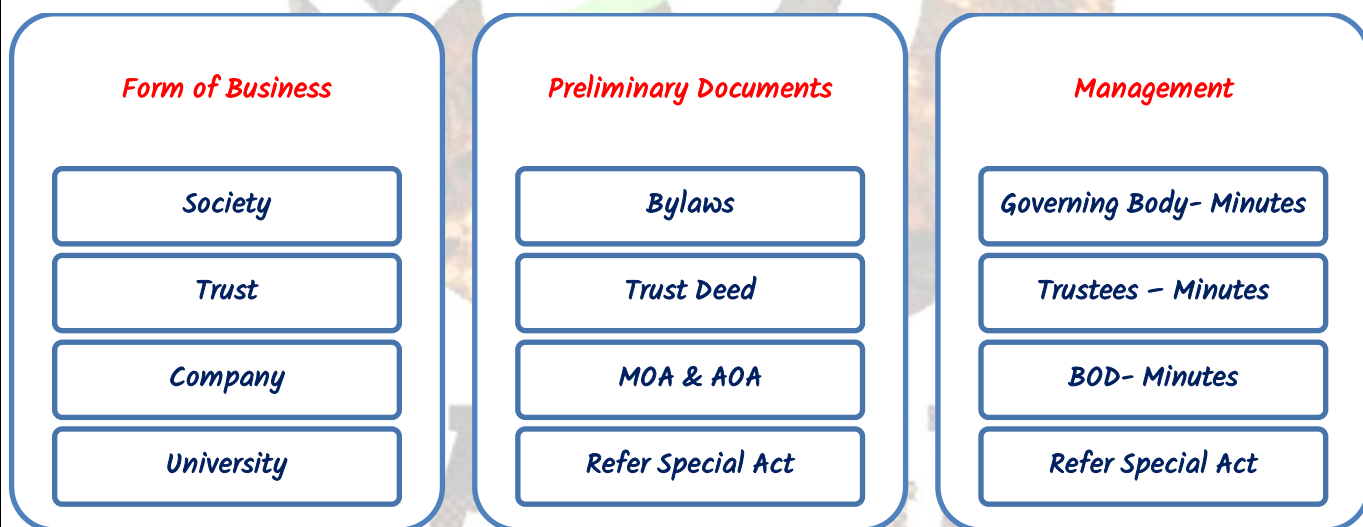
HOW TO PRESENT ANSWER IN EXAMS”

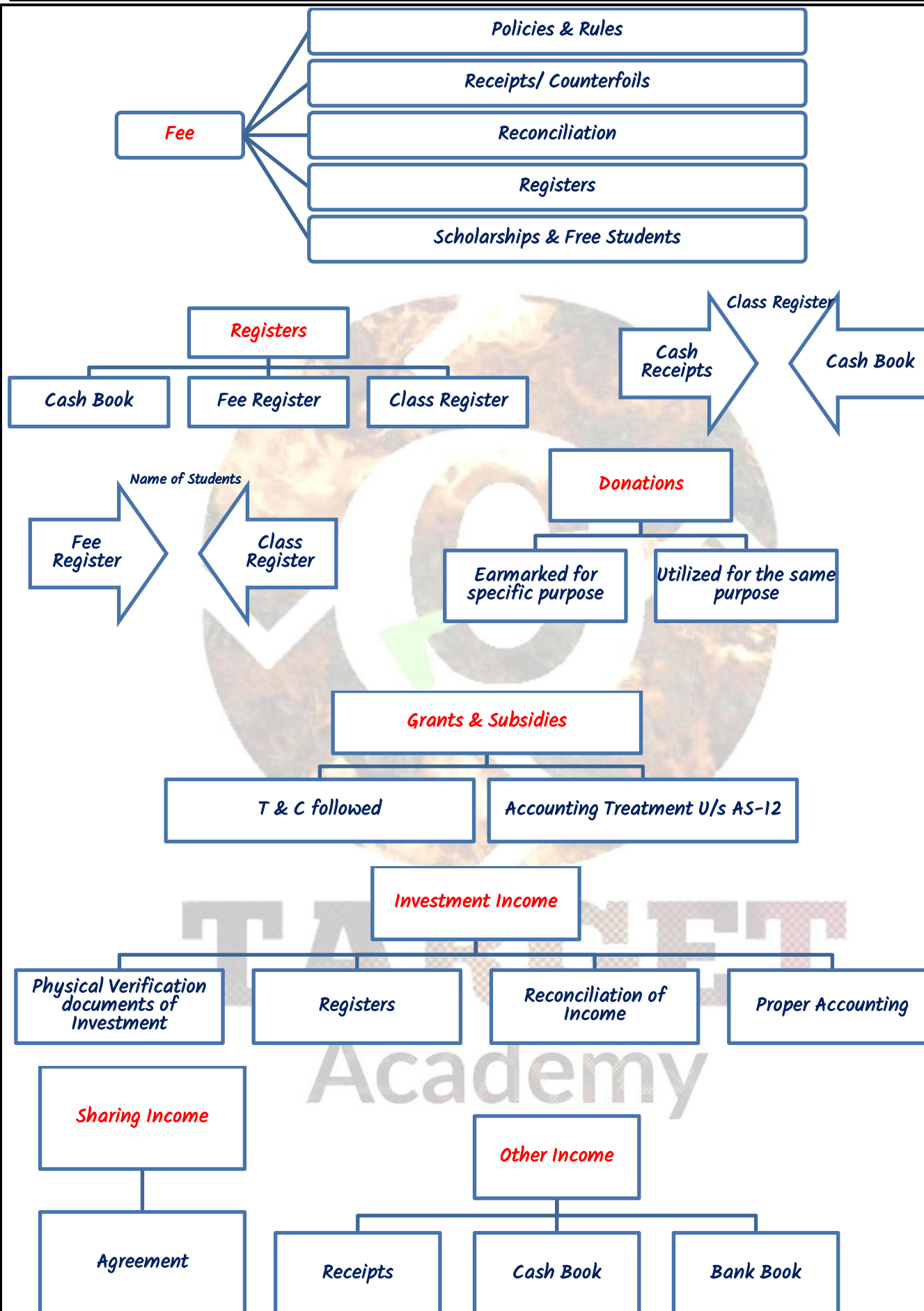
- Answer is mainly divided in to 5 Parts.





EDUCATION INSTITUTIONS:



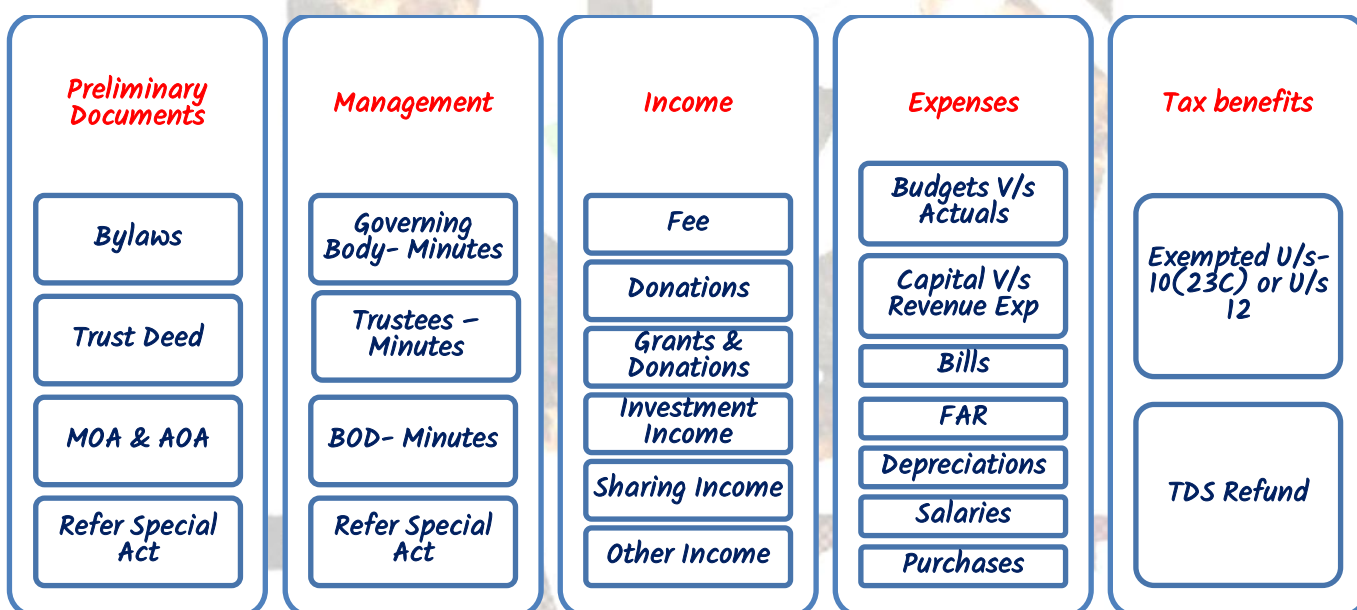


EXPENDITURE:

- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.
- Purchase – Furniture, office equipments, Sport items.
- Verify Inventories- Stationary, Library Books etc.

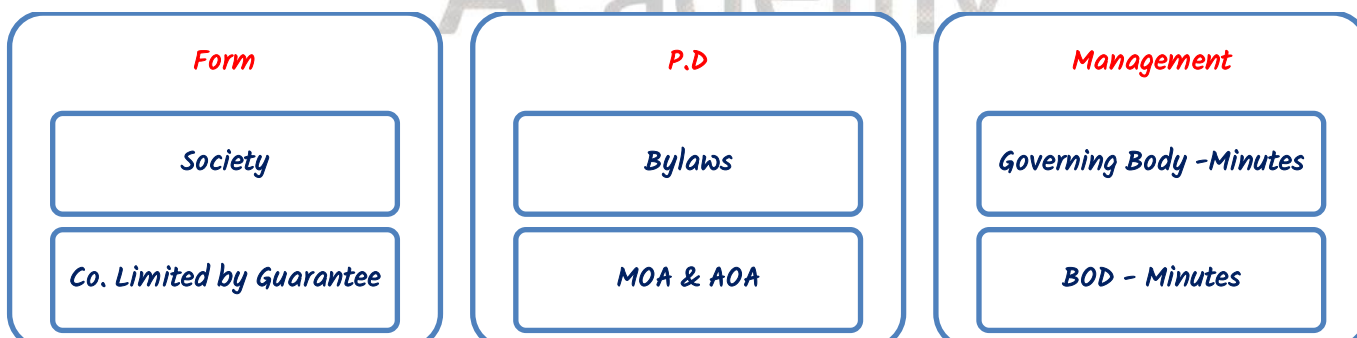
TAX BENEFITS:

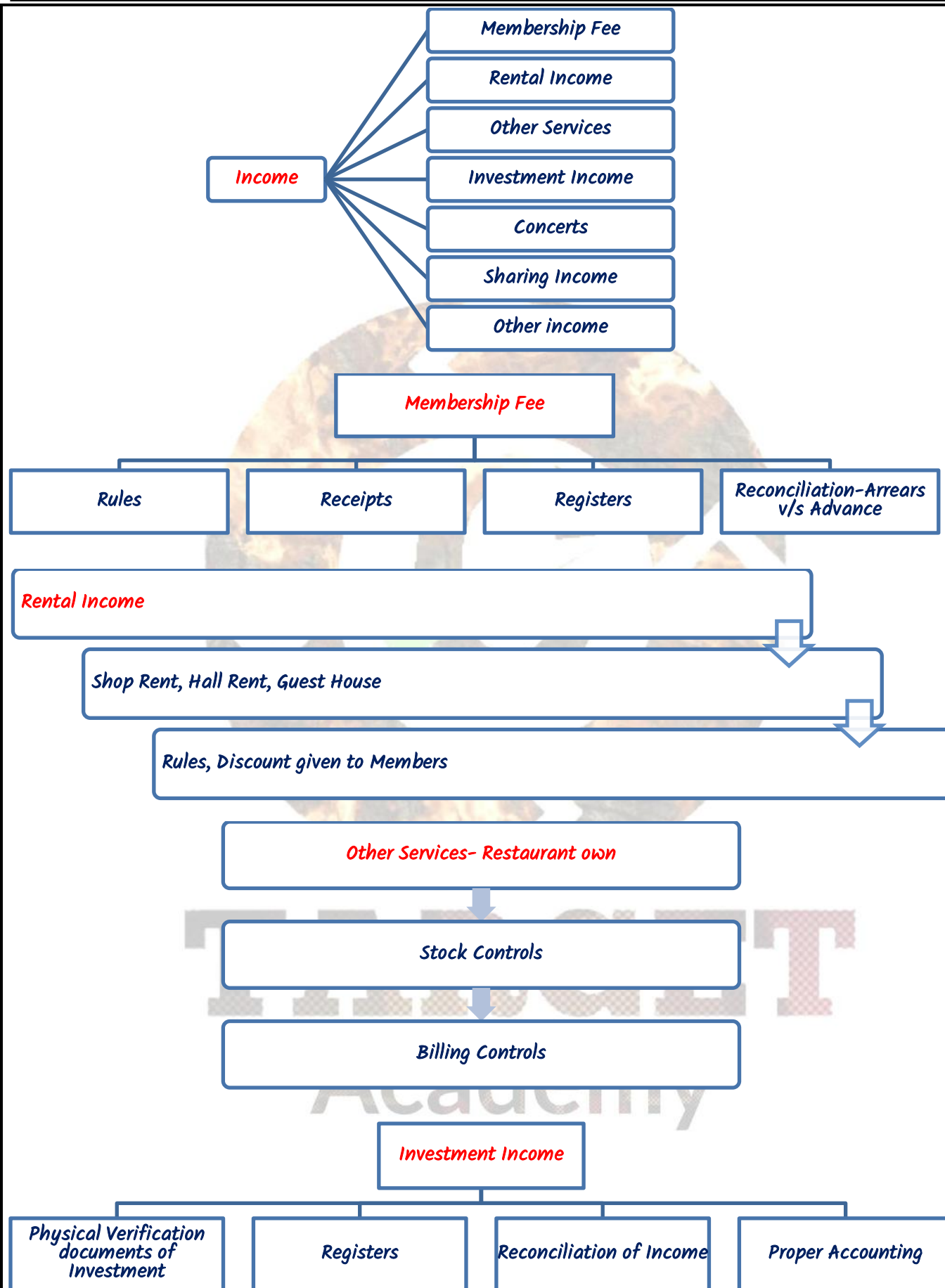
- Exempted U/s 10 or U/s 12.
- TDS Refund.

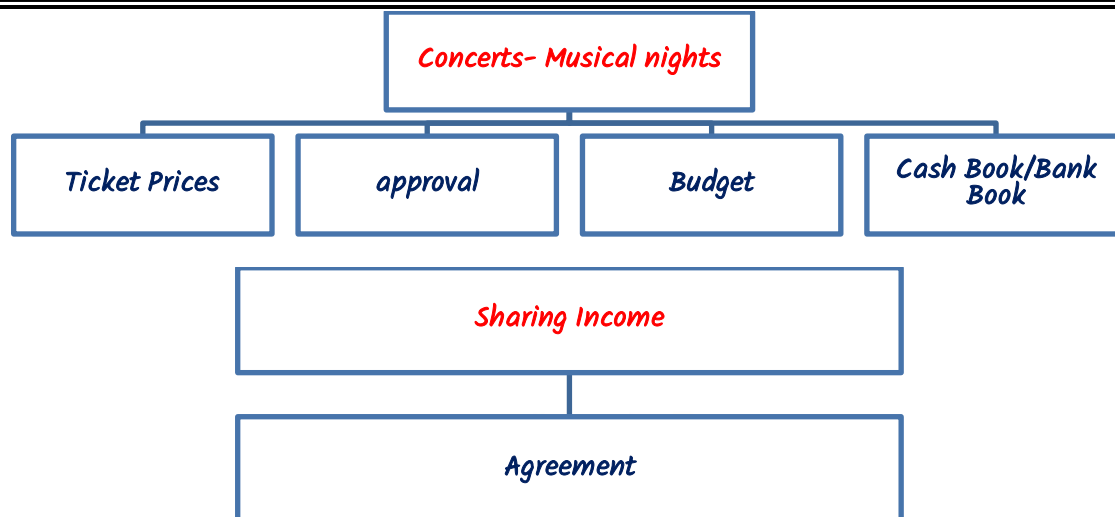


CLUB HOUSES:

- Club houses are mainly in the form of Society or Company limited by guarantee.



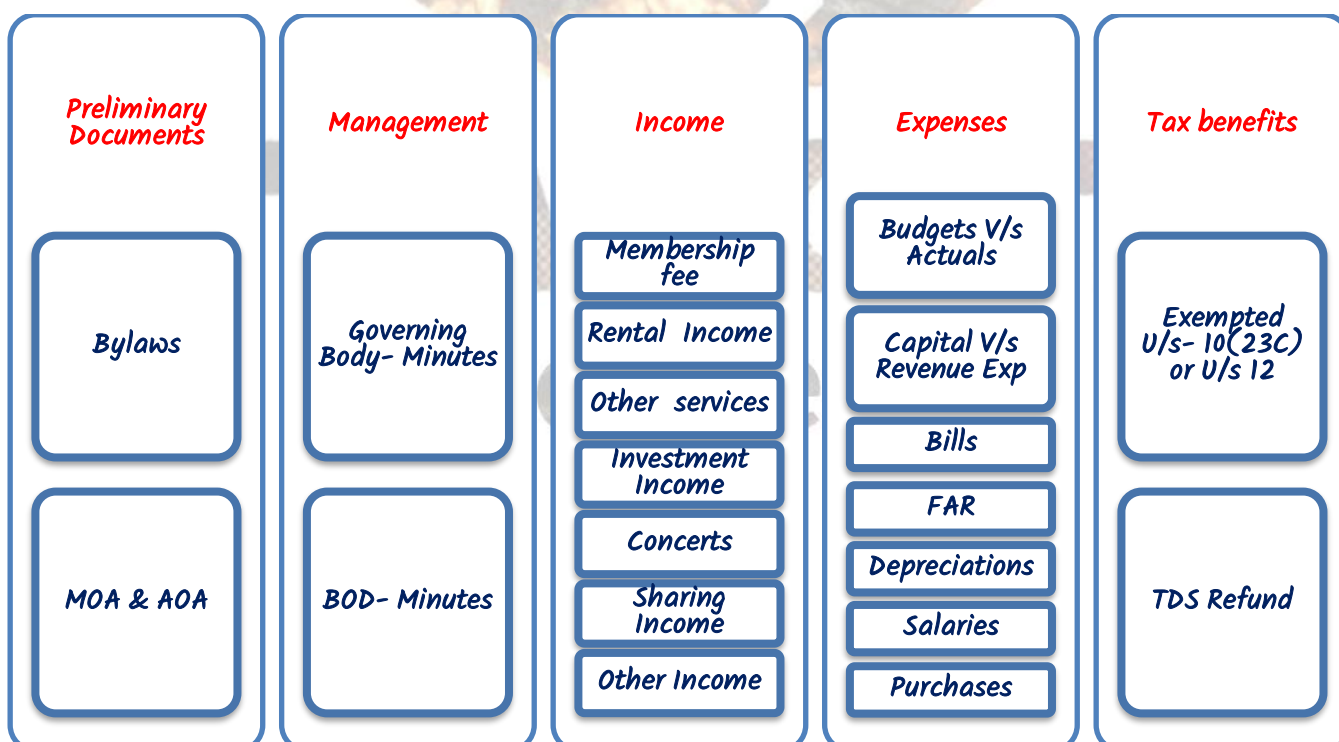




EXPENDITURE:

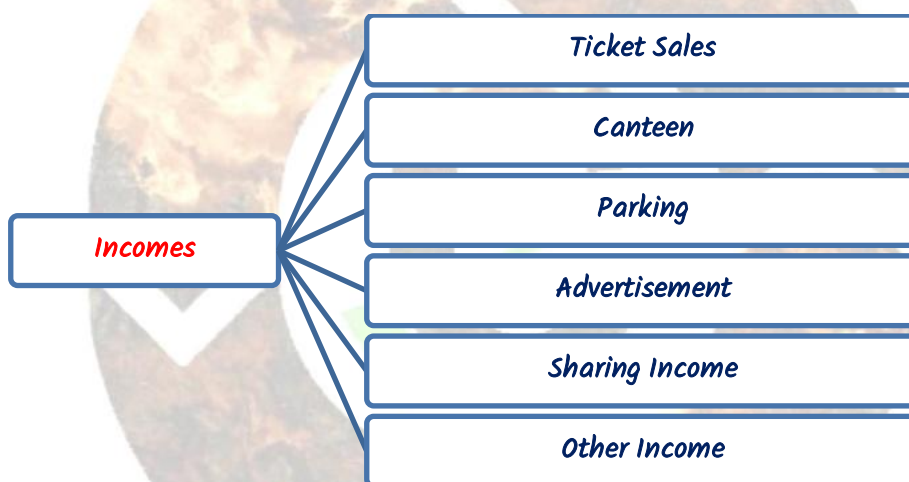
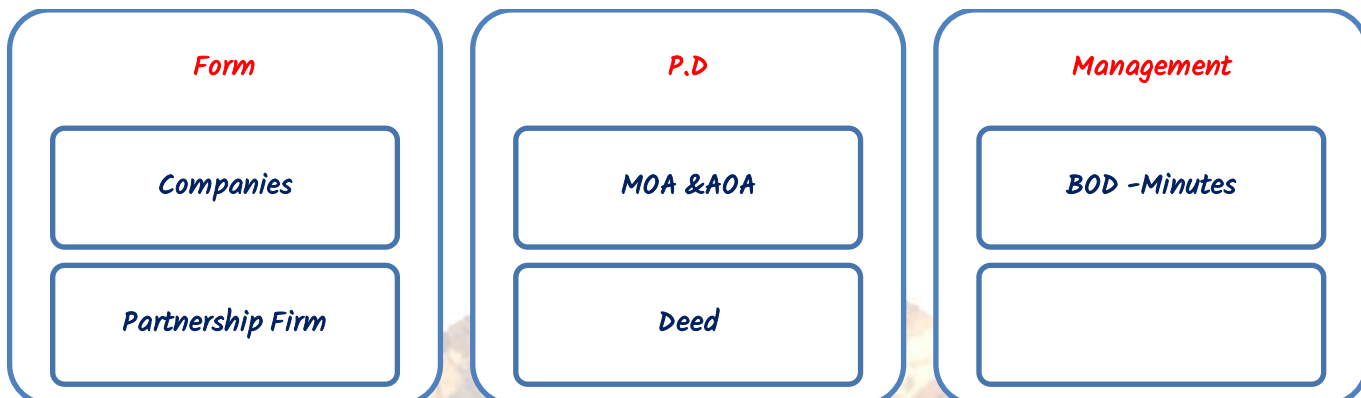
- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.
- Purchase – Furniture, office equipments, Sport items.
- Verify Inventories- Stationary, Sport items etc.

TAX:

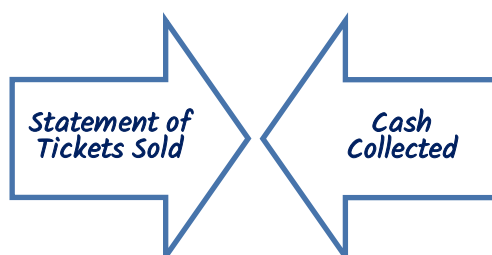


CINEMA THEATER:

- Generally Cinema Theaters conduct business in the form of Companies, Partnership firms



Serial No.	· Don't Reveal to Ticket selling person
Benefit Shows	· Cash Collection Separately · Show timings
Class of seating	· Cash collection Statement V/s · Tickets sold for different Class
Statement of Tickets Sold	· Reconcile with Cash collected
Cash Collection	· Reconcile with Cash Book & Bank Deposit

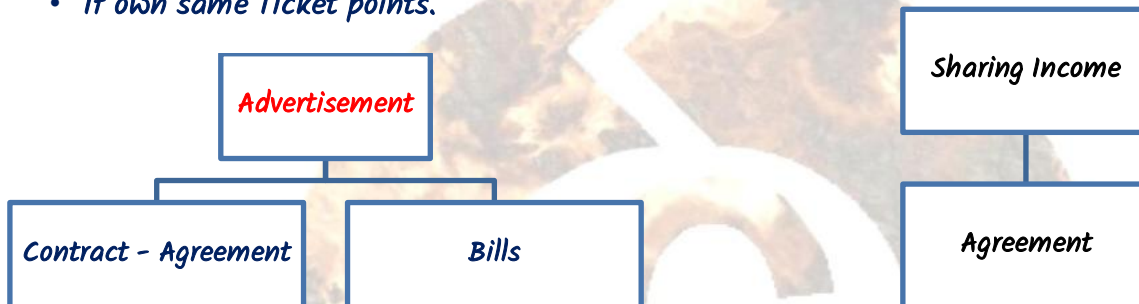


CANTEEN:

- Stock Verification
- No Billing Controls :
- Sales = Purchases - Closing Stock

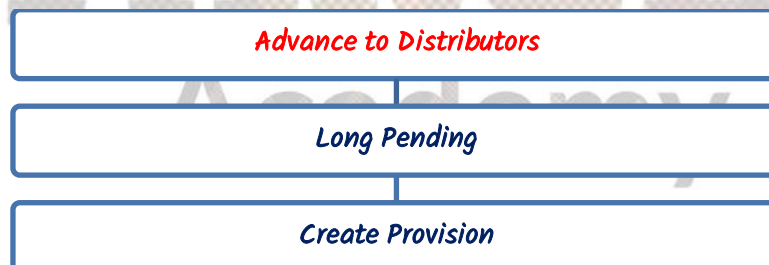
PARKING:

- Sharing Income
- If own same Ticket points.



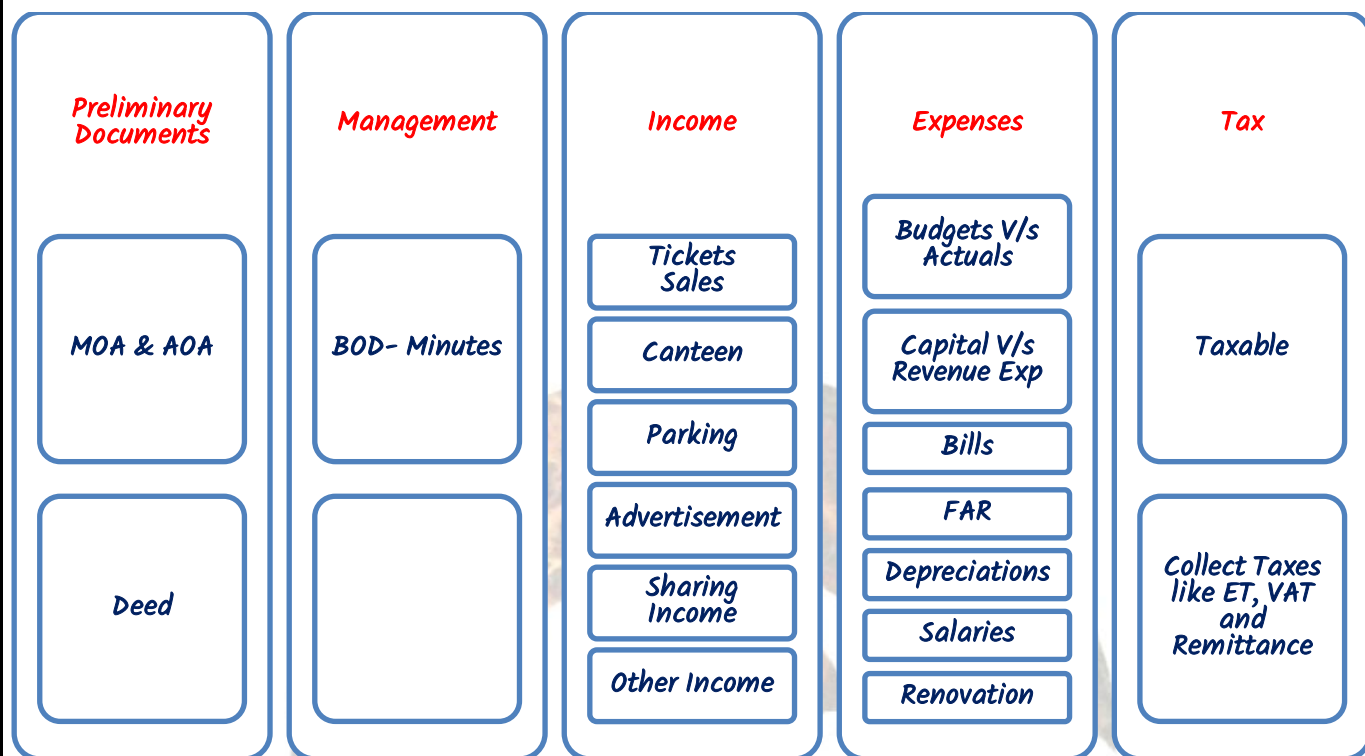
EXPENDITURE:

- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.
- Verify Inventories- Stationary
- Renovation Expenditure-Capital & Revenue Segregation.
- Furniture & Fixtures – High Rate of Depreciation.



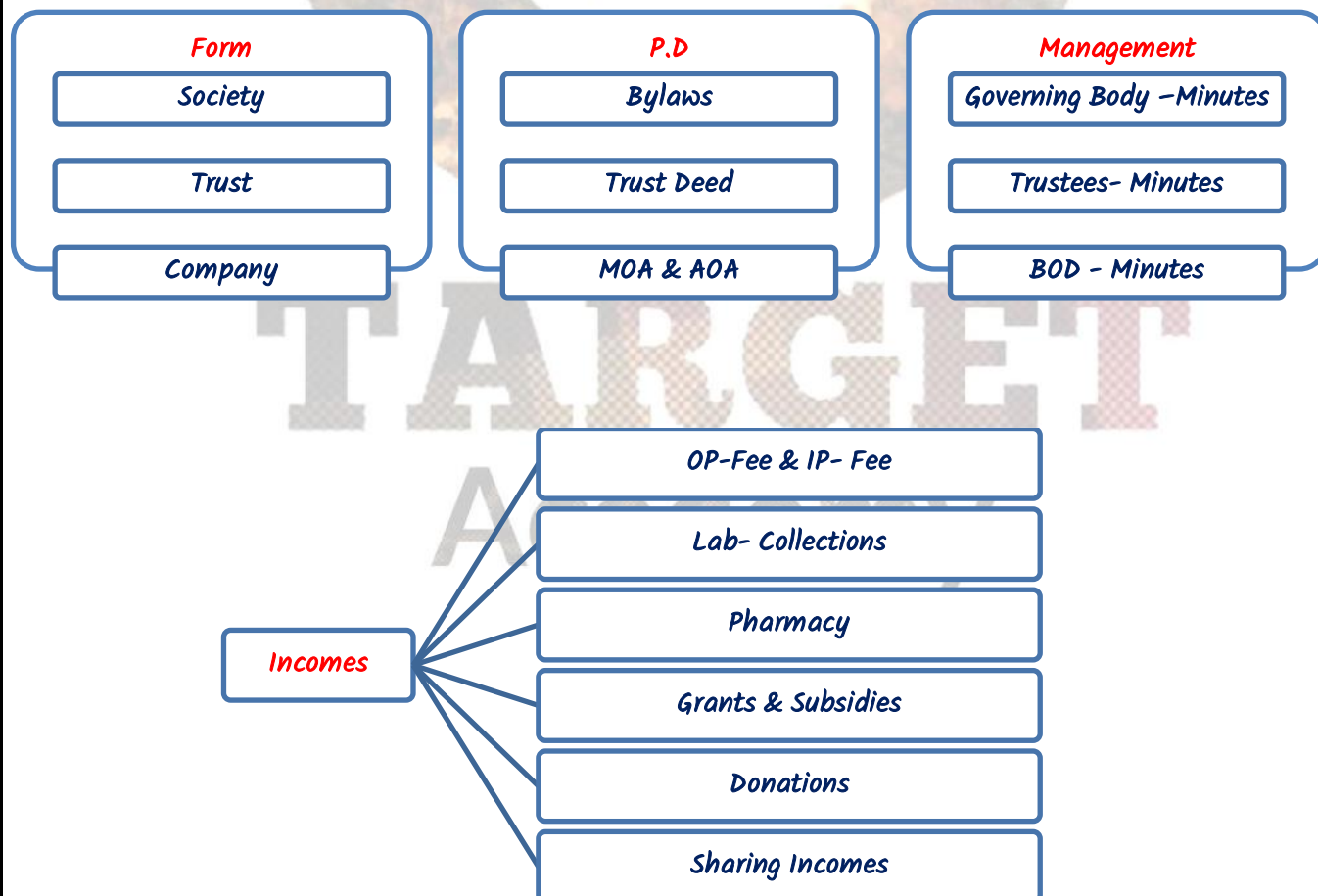
TAX:

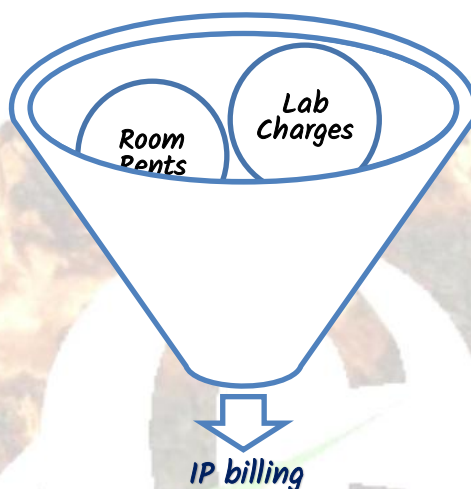
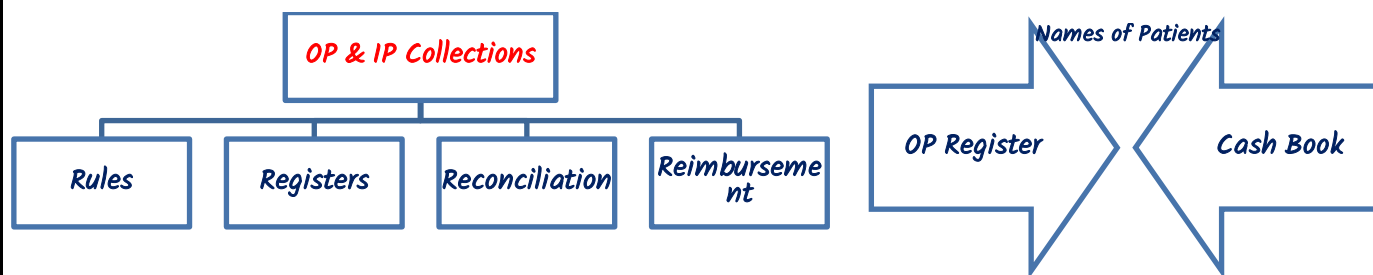
- Taxable
- No Tax Benefit
- Collection of Taxes and there remittance like ET, VAT,



HOSPITALS:

- Generally Hospitals will do business in the form of Society, Trust, Company.



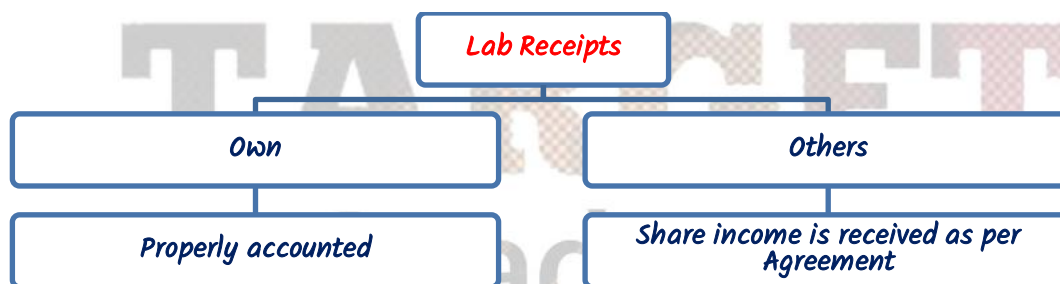


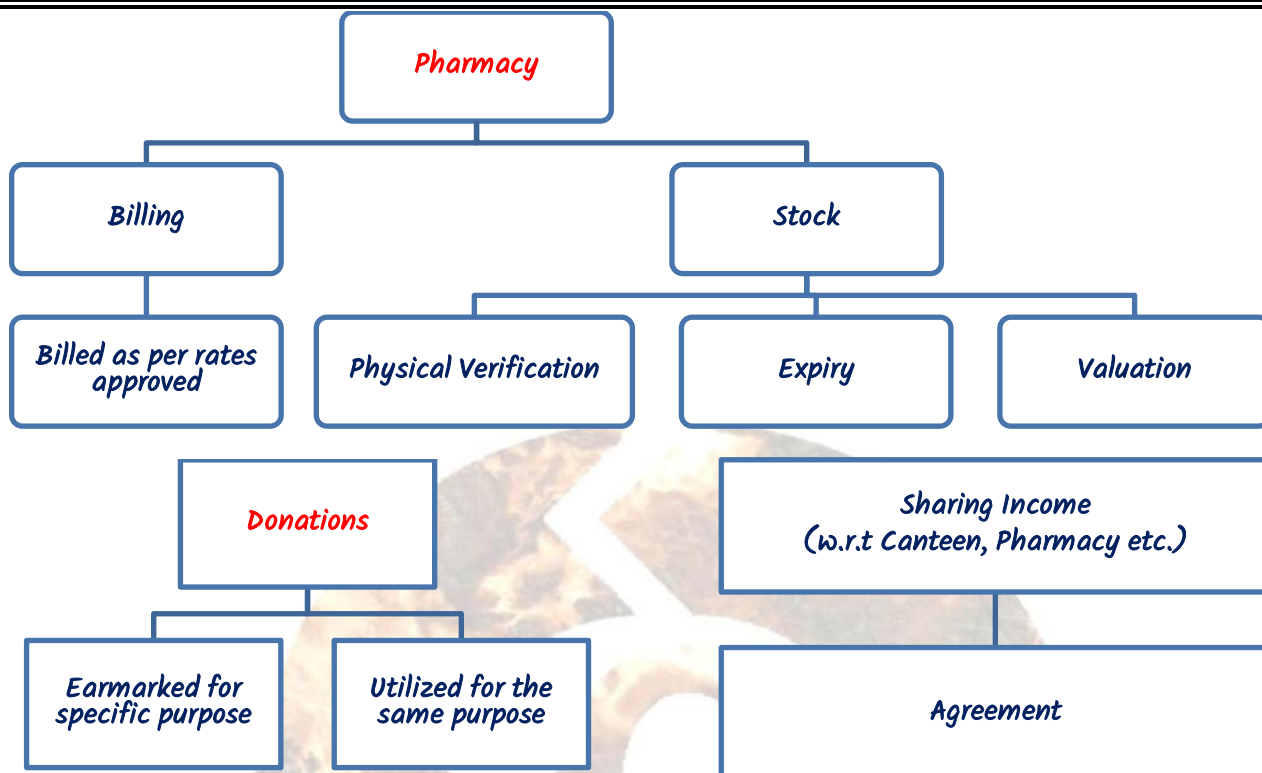
As per Management
Approved Rates

Income sharing with Outside Doctors

Properly collected form Patients

Shared as per Agreement



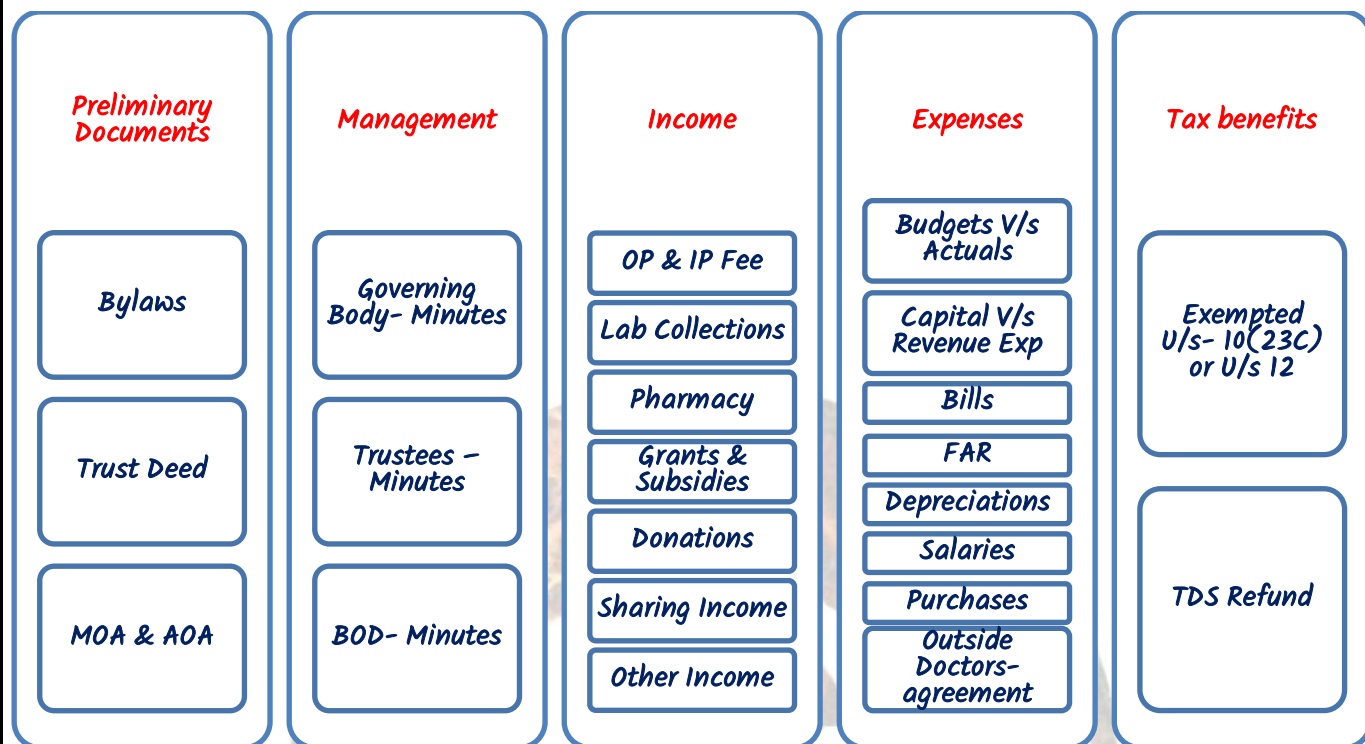


EXPENDITURE:

- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.
- Depreciation – High Rates
- Outside Doctors (Hired)- Payment as per Agreement.

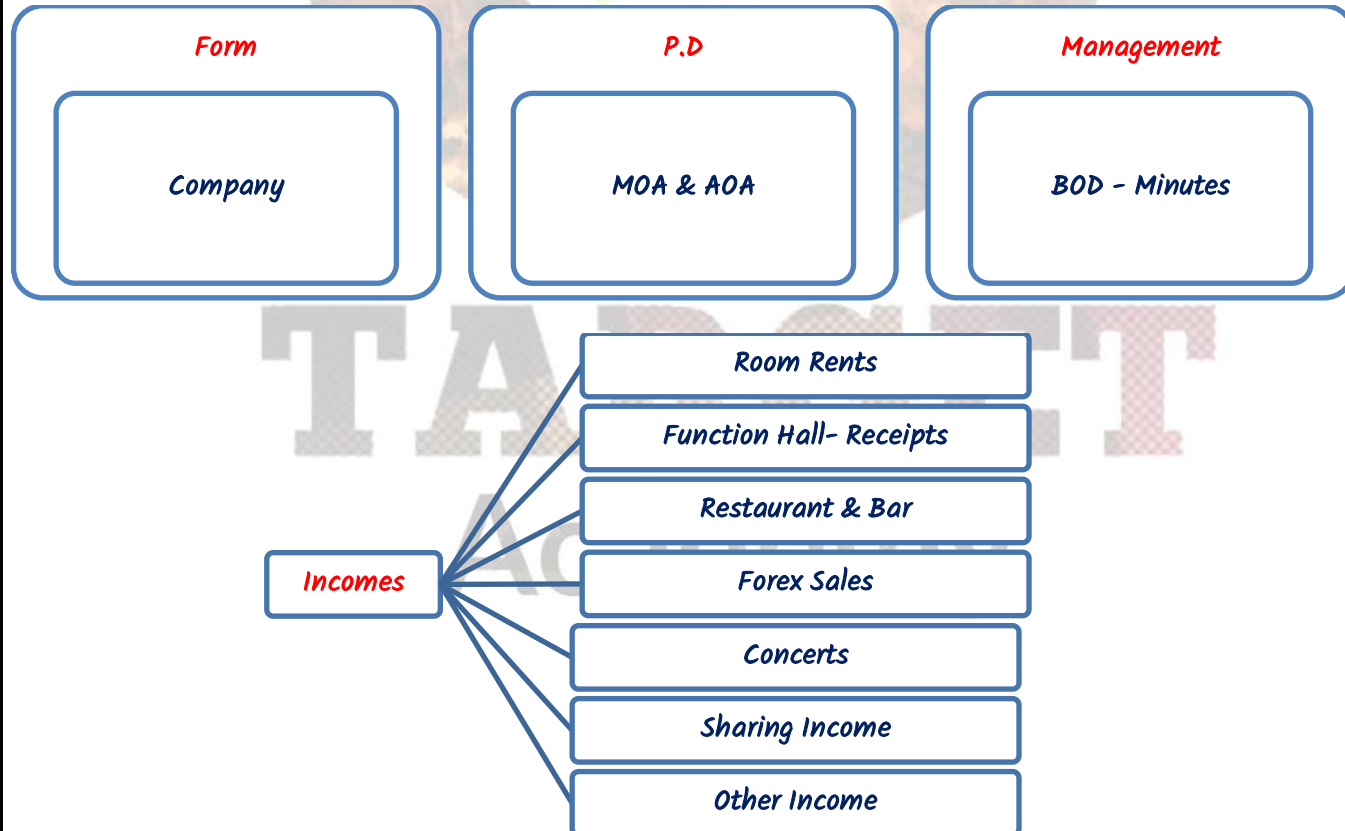
TAX BENEFITS:

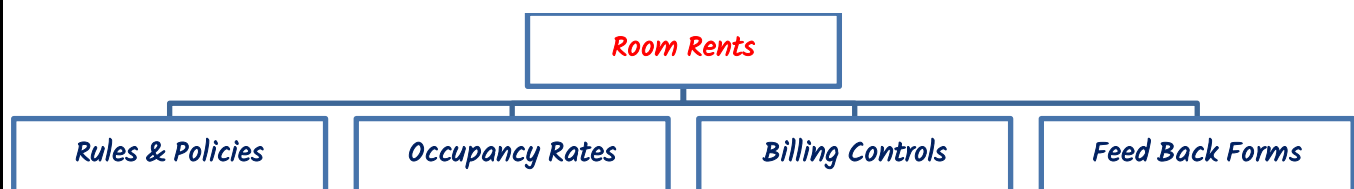
- Exempted U/s 10(23C) or U/s 12.
- TDS Refund.



HOTELS:

- Hotels generally run business in the form of Companies



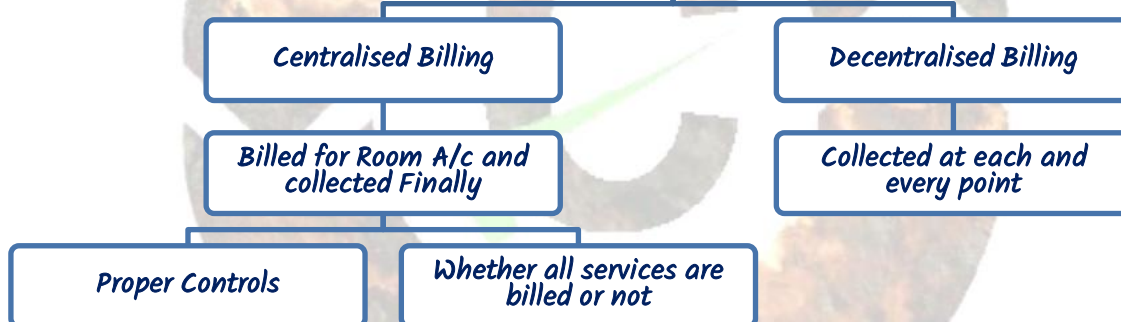


Occupancy Rates

Compare with Rates of other Hotels

In case of Abnormal Differences – Enquire Reasons

Billing Controls



Function Hall



Restaurant & Bars



Stock Controls

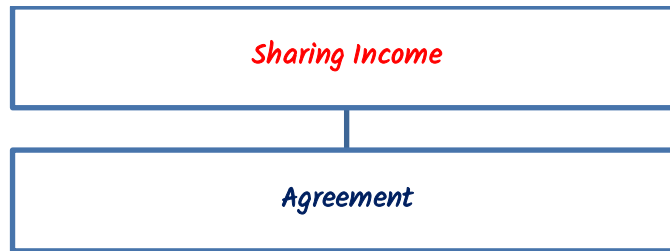


Forex Sales

Compliance of RBI Rules

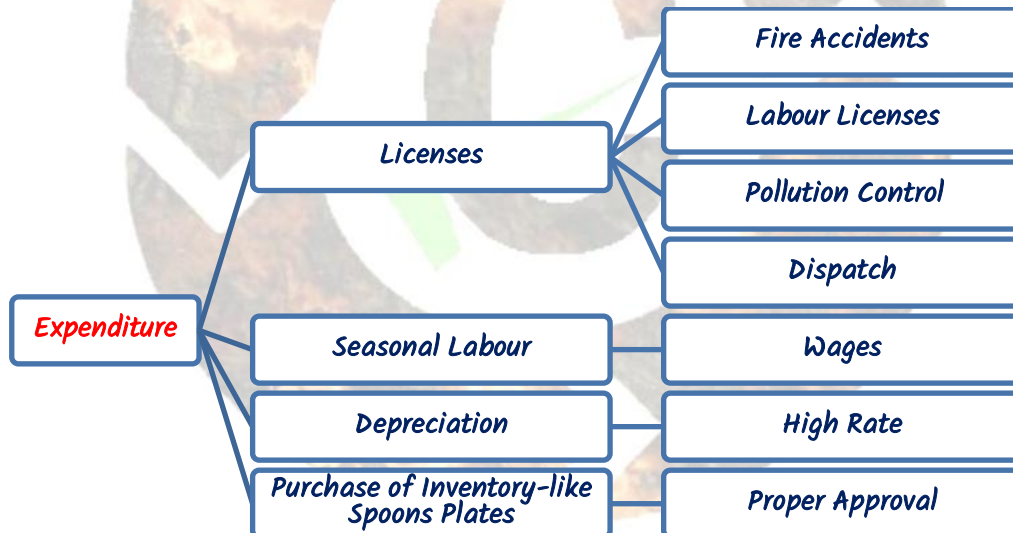
Concerts





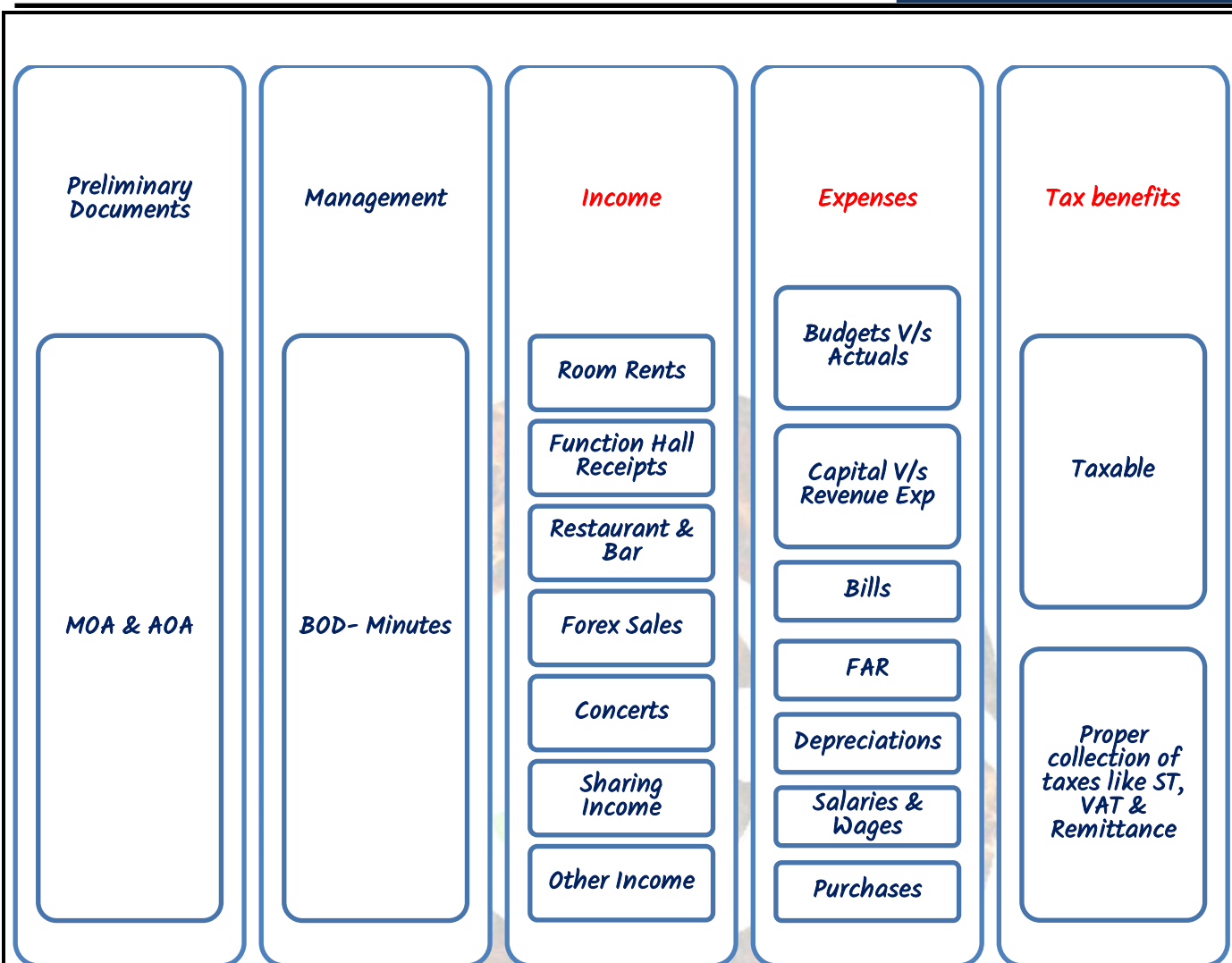
EXPENDITURE:

- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.



TAX:

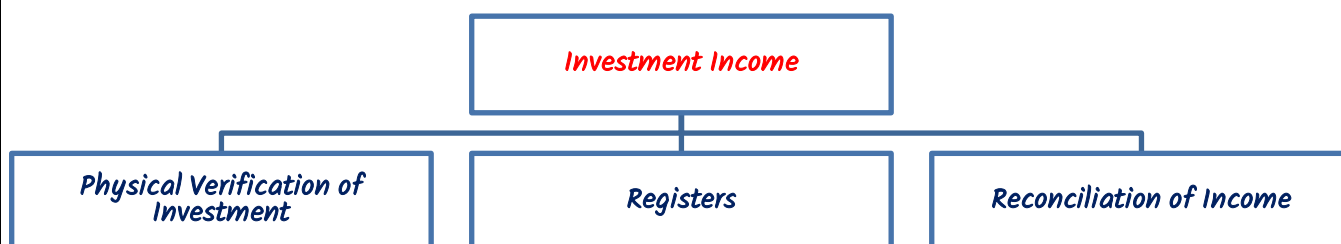
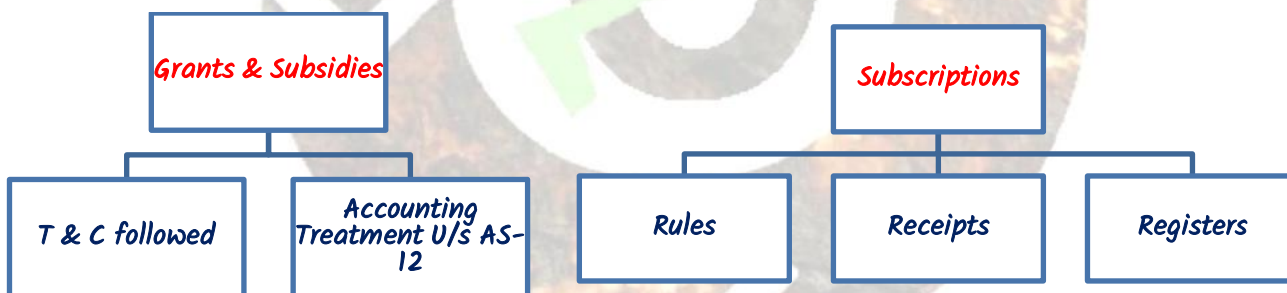
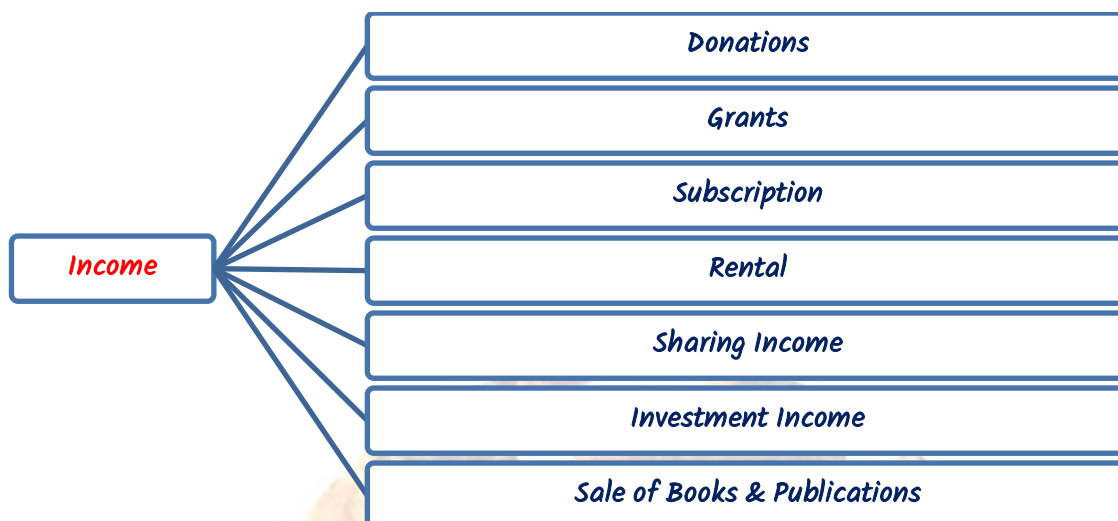
- Taxable
- Verify proper collection of Taxes like Service Tax, VAT and proper remittance to government.



CHARITABLE INSTITUTIONS:

- Generally Charitable Institutions form in nature of Society or Trust or Sec.8 company





Sales of Books & Publications

$\text{Stock} = \text{opening st} + \text{Purchases} - \text{Sales}$

Sales to eligible persons only

EXPENDITURE:

- Budgets V/s Actuals- any deviation – report to managing Body.
- Capital Expenditure V/s Revenue Expenditure.
- FAR
- Depreciation.
- Salaries.
- Purchase – Furniture, office equipments.
- Verify Inventories- Stationary.

TAX:

- Not Taxable U/s 12
- Deduction U/s 80 G also given to Donor – only if the Charitable institution registered for 80G Deduction in addition to reg U/s 12.

Preliminary Documents	Management	Income	Expenses	Tax benefits
Bylaws	Governing Body- Minutes	Donations	Budgets V/s Actuals	Exempted U/s- 10(23C) or U/s 12
Trust Deed	Trustees – Minutes	Grants	Capital V/s Revenue Exp	TDS Refund
MOA & AOA	BOD- Minutes	Subscriptions	Bills	
		Rental	FAR	
		Investment Income	Depreciations	
		Sharing Income	Salaries	
		Sale of Books & Publications	Purchases	

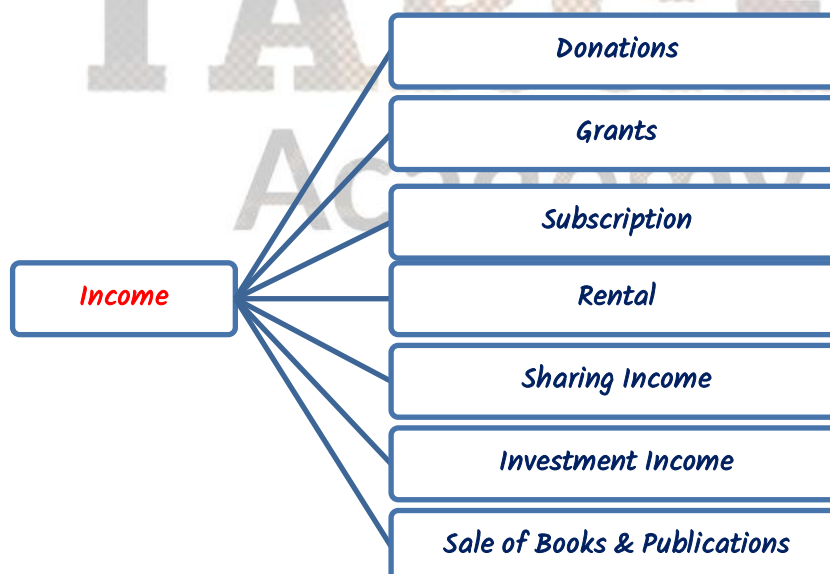
NGO:

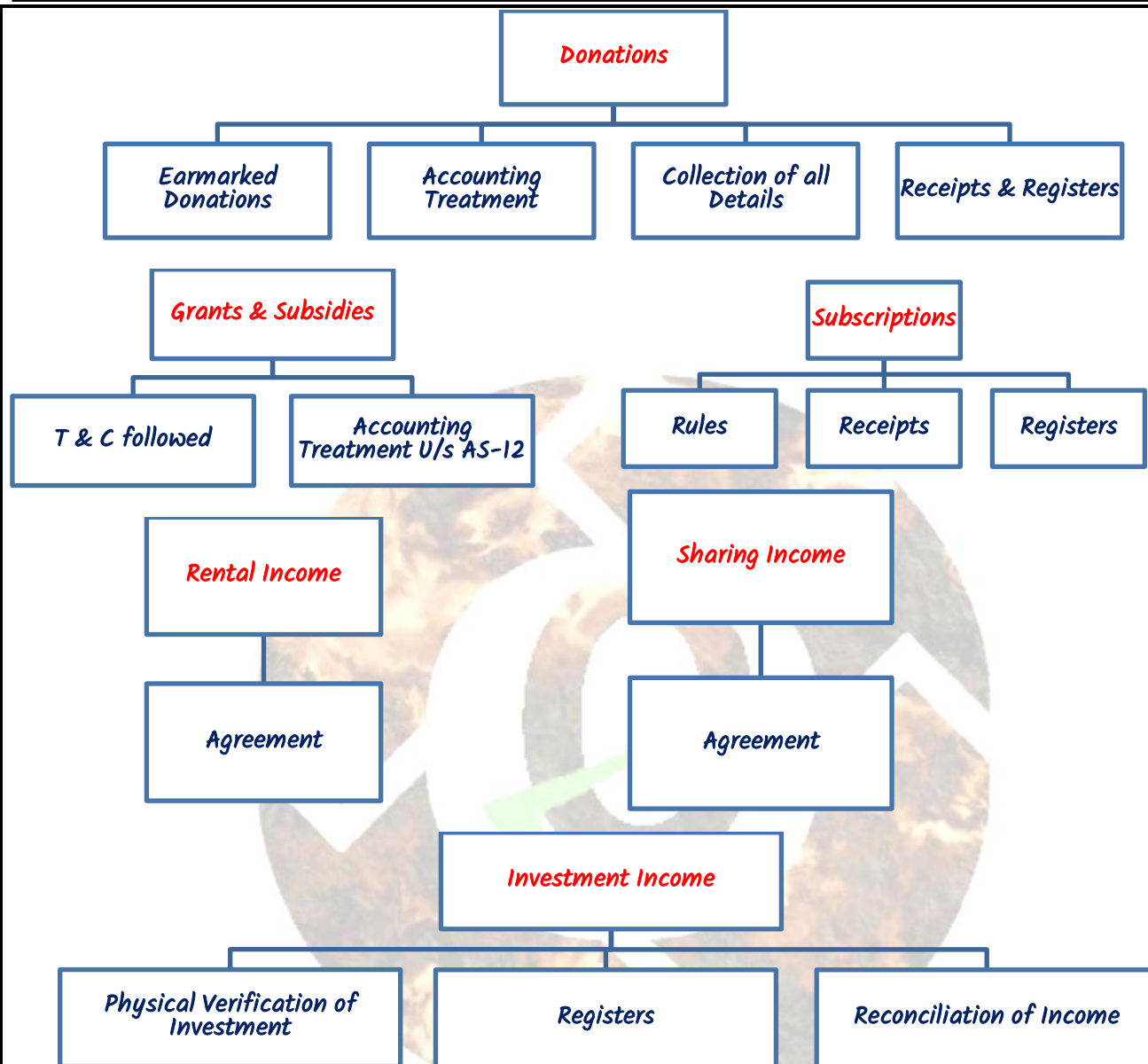
- Same Points as Charitable Institution.
- NGO has professional Management but charitable institutions have no professional management.
- Each & every NGO has its main Objective
- They Run Services as a Business.
- Verify whether the funds utilised for its main objective.
- There are predetermined policies for raising donations and expending
- Verify whether the policies are followed or not.
- BOD approval
- Agreement with donors
- Sending of periodical reports to donors.
- Fulfilling of T&C in the agreement.



CHARITABLE INSTITUTIONS V/S NGO:

Charitable Institutions	NGO
Low Scope	High Scope
No professional Management	Professional Management
They don't approach donors	Approach Donors
No agreement with Donors	Agreement with Donors





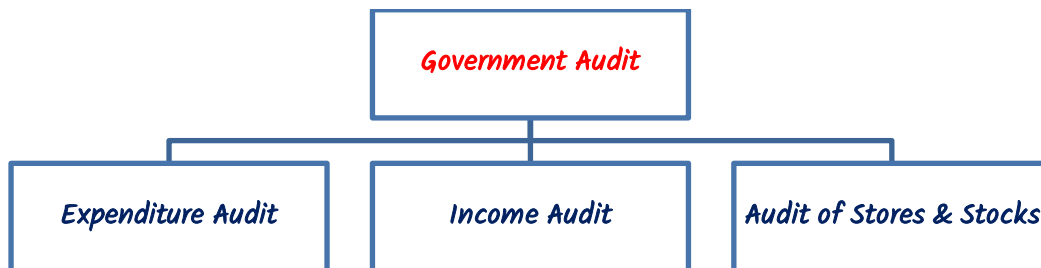
EXPENDITURE:

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LOCAL BODIES:

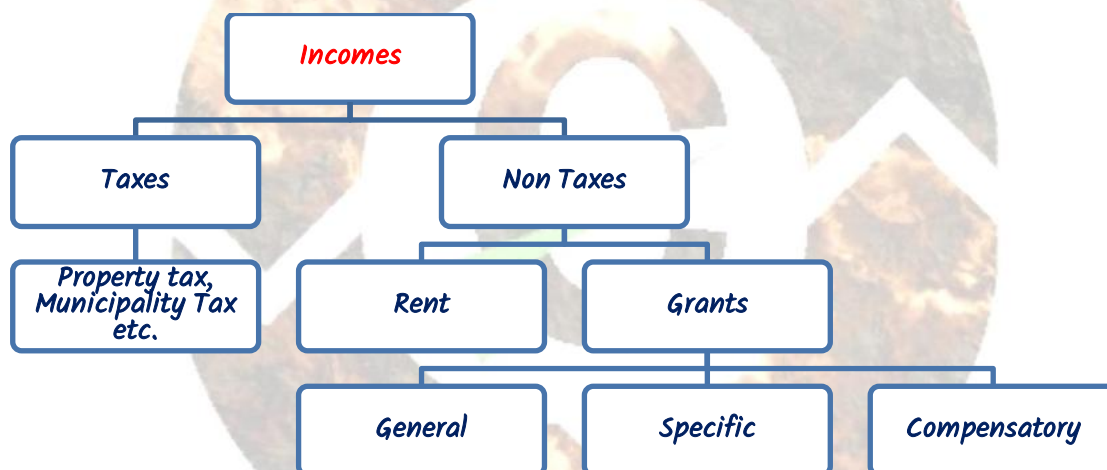
- Local Bodies are the part of Government
- Like Municipalities, Panchayaties.

- Same as Government Audit.



PRIMARY ACTIVITIES:

- Providing Primary Education.
- Health & Sanitation.
- Maintenance of Public assets.

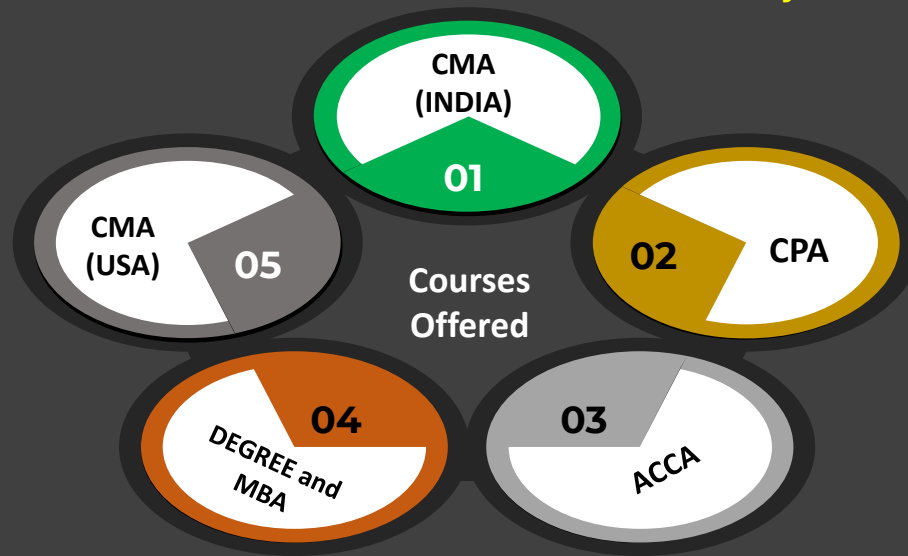


FINANCIAL ADMINISTRATION:

- Budgetary System.
- Most of the Local Bodies are cash Basis of Accounting.
- Subsidiary & Statistical Registers.
- Different Transactions have different Vouchers.

THE END

Courses Offered at TARGET Academy



1. ONLY INSTITUTE FOR EXCLUSIVE CMA
2. ONLY INSTITUTE TEACHING CMA IN GROUP WISE
3. ONLY INSTITUTE HAVING STUDENTS PASSED CMA INTER SINGLE GROUP WITH IN 6 MONTHS FROM PASSING CMA FOUNDATION

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1. Tally
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5. CRT
6. Practical Training

MCQ- Explanation

1. Detailed Explanation of MCQ
2. Coverage of all variety of MCQ

Software

1. We have Specially designed Software based on main exam model.



Classes

1. Physical Classes, Online Classes, Recorded Classes
2. Detailed Explanation
3. Doubts clarification
4. Access to videos if you missed out the classes
5. Most experienced faculty

Material

1. Main Material (Coloured)
2. Fast Track Material (coloured)
3. Booster Material (Coloured)
4. MCQ Material (with Solutions)

Revision Exams

1. Practice Tests (Topic Wise)
2. Revision Exams
3. Mock Tests
4. Computerized Exams