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Warm regards,

Prof. Arun Kumar

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CMA Inter Group - II
Paper-11
Financial Management and Business Data Analytics

Authors:
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Editor:
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First and foremost, we are deeply grateful to the students and educators who have provided valuable feedback, helping us continuously improve the Scanner and make it an essential tool for exam preparation. Your insights and experiences have been instrumental in shaping this edition.

We would also like to thank our dedicated team of authors, editors, and designers for their hard work and commitment. Their attention to detail, meticulous research, and passion for excellence have ensured the accuracy and relevance of the content provided.

A special thanks to our colleagues at Shuchita Prakashan Private Limited for their relentless effort in ensuring the seamless production and publication of this book. The continued trust and collaboration of booksellers and distributors have been a cornerstone of our success, and we are immensely thankful for their support.

Finally, we express our sincere appreciation to our families for their constant encouragement, understanding, and patience throughout the preparation of this book.

We hope this edition proves to be a valuable resource for CMA Inter aspirants and helps them achieve their academic goals.

Thank you.

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Syllabus

Financial Management and Business Data Analytics Management

Paper - 11 **(100 Marks)**

(One Paper - Three Hours)

Syllabus Structure:

The syllabus in this paper comprises the following topics and study weightage:

Module No.	Module Description	Weight
Section A	**Financial Management**	**80%**
1.	Fundamentals of Financial Management	5%
2.	Institutions and Instruments in Financial Markets	10%
3.	Tools for Financial Analyses	15%
4.	Sources of Finance and Cost of Capital	10%
5.	Capital Budgeting	15%
6.	Working Capital Management	15%
7.	Financing Decision of a Firm	10%
Section B	**Business Data Analytics**	**20%**
8.	Introduction to Data Science for Business Decision-making	5%
9.	Data Processing, Organisation, Cleaning and Validation	5%
10.	Data Presentation: Visualisation and Graphical Presentation	5%
11.	Data Analysis and Modelling	5%

Revision Tracker for Important Questions

Use this table to keep track of important questions you wish to revise before the examination. Simply note the chapter and page number. Mark revision No in front of it after revision.

No.	Chapter	Page	Revision no.				Chapter	Page	Revision no.			
1.												
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Preface to Scanner

Financial Management and Business Data Analytics constitute Paper – 11 of Inter Gr. II Examination conducted by the Institute of Cost Accountants of India. This book is intended to make the study interesting and scoring from the examination point of view.

It contains solved answers to various questions asked in the examination of Final level conducted by the Institute. The period covered is past 20 exams. The answers are presented in lucid and understandable language and style so that the reader can understand and memorise the contents and face the exams easily.

This book is not very academic in character and should always be supplemented with the study material supplied by the Institute for better and deeper comprehension of the subject.

Suggestions for improvement are always welcome.

With Best Wishes
Prof. Arun Kumar
CS (Dr.) Himanshu Srivastava
CA (Dr.) Mohit Bahal

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Thank you for helping us make the Scanner even better, and best of luck with your studies!

Detailed Content

No.	Chapter Name	Page No.				
		OQ	SN	DB	DQ	PQ
Section A : Financial Management						
1.	Fundamentals of Financial Management	-	2	-	3	5
2.	Institutions And Instruments In Financial Markets					
2A.	Financial Institutions	-	14	16	16	19
2B.	Capital Market	-	26	28	30	35
2C.	Money Market	-	38	40	43	51
3.	Tools for Financial Analyses	-	74	77	78	80
4.	Sources Of Finance And Cost Of Capital					
4A.	Source of Finance	-	138	-	143	-
4B.	Cost of Capital	-	150	-	151	152
5.	Capital Budgeting	-	174	-	176	177
6.	Working Capital Management	-	207	-	208	209
7.	Financing Decisions Of A Firm					
7A.	Capital Structure and Capital Stacking	-	242	-	243	244
7B.	Leverage and EBIT-EPS Analysis	-	254	-	256	258
7C.	Dividend Decisions and Dividend Theories	-	278	-	279	279

No.	Chapter Name	Page No.				
		OQ	SN	DB	DQ	PQ
Section B : Business Data Analytics						
8.	Introduction to Data Science for Business Decision-Making	-	-	290	-	
9.	Data Processing, Organisation, Cleaning and Validation	-	-	-	-	-
10.	Data Presentation: Visualisation and Graphical Presentation	-	-	-	306	-
11.	Data Analysis and Modelling	-	318	-	319	-
12.	Objective Questions	325	-	-	-	-

Legend:
OQ: Objective Questions
SN: Short Notes
DB: Distinguish Between,
DQ: Descriptive Questions
PQ: Practical Questions

Revision Tracker for Important Questions

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20.												

IN THIS EDITION

Questions	Solutions
December - 2014 to December - 2024 Duly incorporated in chapters	December - 2014 to June - 2024 Duly incorporated in chapters
	December - 2024 on scanneradda.com ➡"My Books" for the Answers

UNIQUE FEATURES OF THIS EDITION

- → Trend analysis for Paper and every chapter
- → Questions are arranged according to the **subject/topic** in ascending order of examinations/years.
- → **Graphical Presentation**
- → Analytical Classification of every Chapter in **Four** Categories:
  (1) Short Notes
  (2) Distinguish Between
  (3) Descriptive Questions
  (4) Practical Questions
- → Frequency table showing distribution of marks & compulsory questions to identify important chapters
- → Time manager for Every Chapter to plan and study effectively
- → **Quick Look** Weightage Analysis for
  1. Repeatedly Asked Questions
  2. Common Answered Questions
  3. Must Try Questions
- → Complete Questions and Solutions.

Revision Tracker for Important Questions

Use this table to keep track of important questions you wish to revise before the examination. Simply note the chapter and page number. Mark revision No in front of it after revision.

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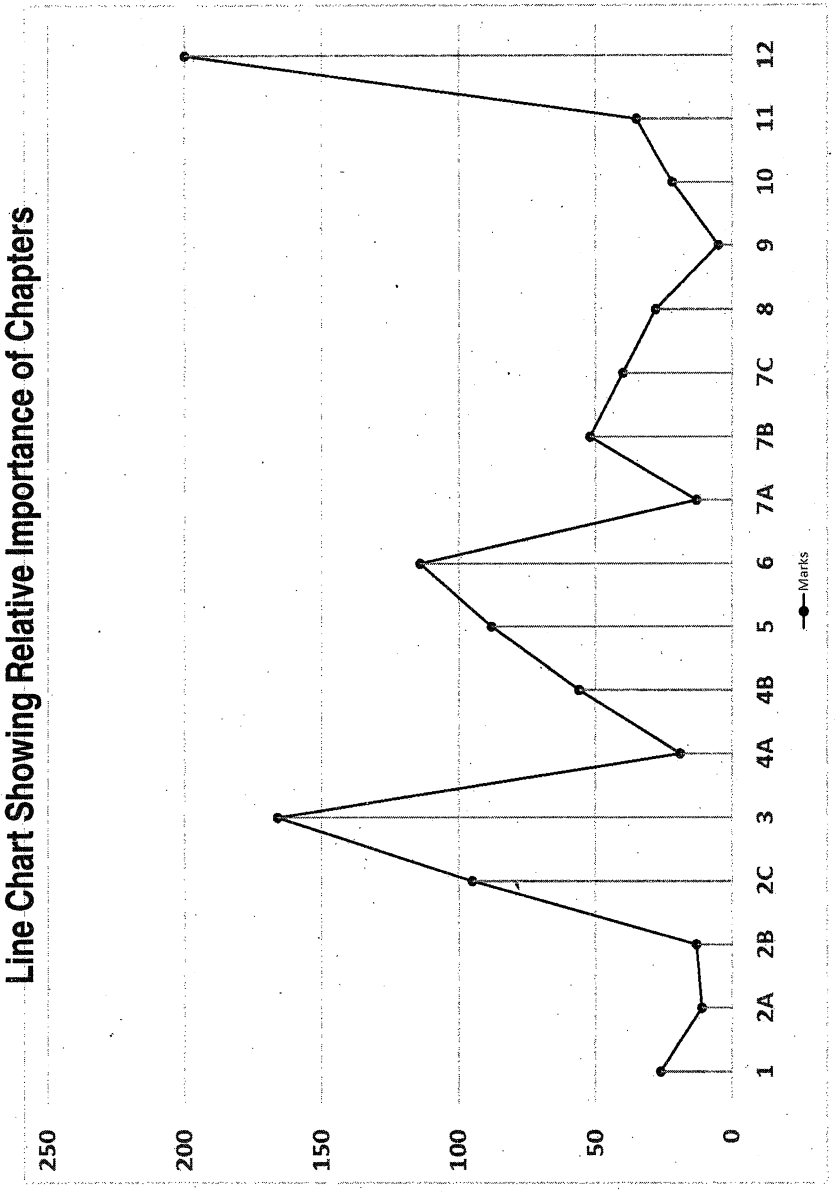
19.												
20.												

Chapter Marks Trend Graph
Financial Management and Business Data Analytics
Line Chart Showing Relative Importance of Chapters



Chapter-wise Marks Analysis

Chap. No.	Chapter Name / Years	18 Jun	18 Dec	19 Jun	19 Dec	21 Dec	22 Dec	23 Jun	23 Dec	24 Jun	24 Dec	Total	Ave.
1.	Fundamentals of Financial Management	-	-	-	-	-	4	22	-	-	-	26	2.6
2A.	Financial Institutions	-	4	-	-	-	-	-	-	7	-	11	1.1
2B.	Capital Market	-	4	-	-	2	-	-	7	-	-	13	1.3
2C.	Money Market	4	20	22	18	14	-	10	-	-	7	95	9.5
3.	Tools for Financial Analyses	22	20	16	12	12	6	15	21	21	21	166	16.6
4A.	Source of Finance	-	-	4	-	3	12	-	-	-	-	19	1.9
4B.	Cost of Capital	6	-	6	6	5	6	6	7	7	7	56	5.6
5.	Capital Budgeting	6	7	6	10	11	6	-	14	14	14	88	8.8
6.	Working Capital Management	11	11	7	10	12	6	15	14	14	14	114	11.4
7A.	Capital Structure and Capital Stacking	-	-	-	-	-	6	-	7	-	-	13	1.3
7B.	Leverage and EBIT-EPS Analysis	-	5	-	14	6	-	6	7	7	7	52	5.2
7C.	Dividend Decisions and Dividend...	5	5	5	-	1	6	4	-	7	7	40	4.0
8.	Introduction to Data Science for....	-	-	-	-	-	-	7	7	7	7	28	2.8
9.	Data Processing, Organisation, Cleaning.	-	-	-	-	-	-	5	-	-	-	5	0.5
10.	Data Presentation: Visualisation and....	-	-	-	-	-	-	15	-	7	-	22	2.2
11.	Data Analysis and Modelling	-	-	-	-	-	-	-	14	7	14	35	3.5
12.	Objective Questions	14	14	14	14	15	14	25	30	30	30	200	20.0

Chapter-Wise Compulsory Questions Analysis

Chap. No.	Chapter Name / Years	18 Jun	18 Dec	19 Jun	19 Dec	21 Dec	22 Dec	23 Jun	23 Dec	24 Jun	24 Dec	Total	Ave.
1.	Fundamentals of Financial Management	-	-	-	-	-	-	-	-	-	-	0	0.0
2A.	Financial Institutions	-	-	-	-	-	-	-	-	-	-	0	0.0
2B.	Capital Market	-	-	-	-	-	-	-	-	-	-	0	0.0
2C.	Money Market	-	-	-	-	-	-	-	-	-	-	0	0.0
3.	Tools for Financial Analyses	-	-	-	-	-	-	-	-	-	-	0	0.0
4A.	Source of Finance	-	-	-	-	-	-	-	-	-	-	0	0.0
4B.	Cost of Capital	-	-	-	-	-	-	-	-	-	-	0	0.0
5.	Capital Budgeting	-	-	-	-	-	-	-	-	-	-	0	0.0
6.	Working Capital Management	-	-	-	-	-	-	-	-	-	-	0	0.0
7A.	Capital Structure and Capital Stacking	-	-	-	-	-	-	-	-	-	-	0	0.0
7B.	Leverage and EBIT-EPS Analysis	-	-	-	-	-	-	-	-	-	-	0	0.0
7C.	Dividend Decisions and Dividend...	-	-	-	-	-	-	-	-	-	-	0	0.0
8.	Introduction to Data Science for....	-	-	-	-	-	-	-	-	-	-	0	0.0
9.	Data Processing, Organisation, Cleaning.	-	-	-	-	-	-	-	-	-	-	0	0.0
10.	Data Presentation: Visualisation and....	-	-	-	-	-	-	-	-	-	-	0	0.0
11.	Data Analysis and Modelling	-	-	-	-	-	-	-	-	-	-	0	0.0
12.	Objective Questions	-	-	-	-	-	-	-	30	30	30	90	9.0

Paper Trend Analysis

Paper-11 Financial Management and Business Data Analytics

Year	Q. No.		{C}	No.	Chapter Name	Mks.	Ctg.	No.
2022	6	a		12	Objective Questions	6	OQ	345
Dec		b		12	Objective Questions	4	"	346
		c		12	Objective Questions	4	"	346
	7	a		7A	Capital Structure and..	6	DQ	247
		b		3	Tools for Financial Analyses	6	"	120
	8	a		4B	Cost of Capital	6	DQ	163
		b		5	Capital Budgeting	6	"	196
	9	a		6	Working Capital Managmt...	5	"	232
		b		7C	Dividend Decisions and....	7	"	284
	10	a		4A	Sources of Finance	3	SN	141
		b		1	Fundamentals of Fina....	3	"	2
		c		4A	Sources of Finance	3	"	141
		d		4A	Sources of Finance	3	"	141
2023	1	a		12	Objective Questions	6	OQ	347
Jun		b		12	Objective Questions	4	"	350
		c		12	Objective Questions	4	"	350
	2	a		1	Fundamentals of Fina....	4	PQ	3
		b		2C	Money Market	8	"	50
	3	a		3	Tools for Financial Analyses	8	"	122
		b		3	Tools for Financial Analyses	4	"	123
	4a	(i)		4B	Cost of Capital		"	164
		(ii)		1	Fundamentals of Fina....		"	6
		b		8	Introduction to Data Scien...		"	291
	5a	(i)		7B	Leverage and EBIT-EPS.....		"	270
		(ii)		7C	Dividend Decisions and.....		"	284

Year	Q. No.		{C}	No.	Chapter Name	Mks.	Ctg.	No.
		b		9	Data Processing Org....	8	"	298
	6	a		1	Fundamentals of Fina....	6	OQ	7
		b		1	Fundamentals of Fina....	4	"	9
	7	a		6	Working Capital Managmt...	6	DQ	233
		b		6	Working Capital Managmt...	6	"	234
	8	a		10	Data Presentation: Visua...	6	"	306
		b		10	Data Presentation: Visua...	6	PQ	307
2023	1		{C}	12	Objective Questions	30	OQ	352
Dec	2	a		2B	Capital Market	7	PQ	?
		b		11	Data Analysis and Modelling	7	"	319
	3			3	Tools for Financial Analyses	14	"	125
	4	a		3	Tools for Financial Analyses	7	"	127
		b		4B	Cost of Capital	7	"	164
	5	a		5	Capital Budgeting	7	"	198
		b		5	Capital Budgeting	7	"	199
	6	a		6	Working Capital Managmt...	7	DQ	235
		b		6	Working Capital Managmt...	7	"	236
	7	a		7A	Capital Structure and..	7	"	248
		b		7B	Leverage and EBIT-EPS....	7	"	272
	8	a		8	Introduction to Data Scien...	7	"	292
		b		11	Data Analysis and Modelling	7	"	320
2024	1		{C}	12	Objective Questions		OQ	355
Jun	2	a		2A	Financial Institutions	7	PQ	18
		b		11	Data Analysis and Modelling	7	"	321
	3			3	Tools for Financial Analyses		"	128
	4	a		3	Tools for Financial Analyses	7	"	?
		b		4B	Cost of Capital	7	"	166
	5	a		5	Capital Budgeting	7	"	200

Year	Q. No.		{C}	No.	Chapter Name	Mks.	Ctg.	No.
		b		5	Capital Budgeting	7	"	202
	6	a		6	Working Capital Managmt...	7	DQ	237
		b		6	Working Capital Managmt...	7	"	238
	7	a		7C	Dividend Decisions and...	7	"	285
		b		7B	Leverage and EBIT-EPS....	7	"	273
	8	a		8	Introduction to Data Scien...	7	PQ	293
		b		10	Data Presentation: Visua...	7	DQ	308
2024	1		{C}	12	Objective Questions	30	OQ	358
Dec	2	a		2C	Money Market	7	DQ	51
		b		11	Data Analysis and Modelling	7	"	322
	3	a		3	Tools for Financial Analyses	7	PQ	132
		b		3	Tools for Financial Analyses	7	"	132
	4	a		3	Tools for Financial Analyses	7	"	133
		b		4B	Cost of Capital	7	"	169
	5	a		5	Capital Budgeting	7	"	203
		b		5	Capital Budgeting	7	"	204
	6	a		6	Working Capital Managmt...	7	"	239
		b		6	Working Capital Managmt...	7	"	239
	7	a		7C	Dividend Decisions and....	7	"	286
		b		7B	Leverage and EBIT-EPS....	7	"	274
	8	a		8	Introduction to Data Scien...	7	DQ	294
		b		11	Data Analysis and Modelling	7	"	322

Legend:
OQ: Objective Question
SN: Short Notes
DB: Distinguish Between
DQ: Descriptive Questions
PQ: Practical Questions

Star Rating of Chapter

No.	Chapter Name	No. of Attempts	Maximum Marks	Compulsory Questions
	Section A : Operations Management			
1.	Fundamentals of Financial Management			
2A.	Financial Institutions			
2B.	Capital Market			
2C.	Money Market	★★	★★	
3.	Tools for Financial Analyses	★★★★★	★★★★	
4A.	Source of Finance			
4B.	Cost of Capital	★★★★		
5.	Capital Budgeting	★★★★	★	
6.	Working Capital Management	★★★★★	★★★	
7A.	Capital Structure and Capital Stacking			
7B.	Leverage and EBIT-EPS Analysis	★★		
7C.	Dividend Decisions and Dividend Theories	★★★		
	Section B : Business Data Analytics			
8.	Introduction to Data Science for Business Decision-Making	★		
9.	Data Processing, Organisation, Cleaning and Validation			
10.	Data Presentation: Visualisation and Graphical Presentation			
11.	Data Analysis and Modelling			
12.	Objective Questions	★★★★★	★★★★★	★★★★★

Chapter Trend Analysis

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

THE GRAPH

CHAPTER **1**

Fundamentals of Financial Management

THIS CHAPTER INCLUDES

1. Introduction to Financial Management Fundamentals
   - Objective of Financial Management
   - Scope and Functions of Financial Management
   - Profit Optimisation and Value Maximisation Principle
   - Dynamic Role of a CFO in Emerging Business Environment
2. Time Value of Money
   - Rationale
   - Techniques
   - Future Value and Present Value of a Single Cash Flow
   - Annuity and Perpetuity
   - Compound Annual Growth Rate (CAGR)
   - Practical Applications
3. Risk and Return
   - Various Connotations of Return
   - Ex–ante and Ex–post Return
   - Types of Risks
   - Calculation of Return and Risk
   - Capital Asset Pricing Model

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2022 - Dec [10] Write short notes on the following:

(b) Systematic and Unsystematic Risk **(4 marks)**

Answer:

Systematic & Unsystematic Risk:

Unsystematic Risk: This is also called company specific risk as the risk is related with the company's performance. This type of risk can be reduced or eliminated by diversification of the securities portfolio. This is also known as diversifiable risk.

Systematic Risk: It is the macro-economic or market specific risk under which a company operates. This type of risk cannot be eliminated by the diversification hence, it is non-diversifiable. The examples are inflation, Government policy, interest rate etc.

DESCRIPTIVE QUESTIONS

2023 - June [2] (a) What is Wealth Maximisation as the Objective of Financial Management? Why is profit maximization, not an operationally feasible criterion? State briefly Interrelationship between Investment, Financing and Dividend Decisions. **(1 + 2 + 2 = 5 marks)**

Answer:

Wealth Maximisation means maximisation of the market price of the equity shares of the company in the long run. The long run implies a period which is long enough to reflect the normal market price of the shares irrespective of short-term fluctuations.

The long run price of an equity share is a function of two basic factors:

(i) The likely rate of earnings or earnings per share (EPS) of the company; and

(ii) The capitalisation rate reflecting the liking of the investors of a company.

Profit maximization is not an operationally feasible criterion because it suffers from the following limitations:

1. It is vague because it is not clear whether the term relates to economic profit, accounting profit, profit after tax or before tax.
2. It ignores the Timing of Returns.
3. It ignores Risk Factor.
4. It assumes Perfect Competition.
5. In new business environment profit maximization is regarded as:
   (i) Unrealistic
   (ii) Difficult
   (iii) Inappropriate
   (iv) Immoral

Investment, financing, and dividend decisions are integral components of a company's financial management, and they are closely interconnected, collectively shaping the company's overall financial strategy.

1. Investment decisions directly impact both financing and dividend decisions. When a company decides to undertake an investment project, it requires funds to finance it. This leads to financing decisions, where the company must choose the appropriate mix of debt and equity to raise the necessary capital. If the company opts for more debt, it might have higher interest obligations, affecting the available funds for dividends. Conversely, if it raises more equity, it could lead to dilution of ownership and potentially affect shareholders' dividend expectations.
2. Financing decisions, in turn, influence investment and dividend decisions. The cost and availability of financing can affect the feasibility of certain investment opportunities. If financing is costly or restricted, the company might forego potentially profitable investments. Moreover, the level of debt in the capital structure impacts the company's financial risk, affecting its dividend policy.
   High debt levels may result in the company retaining more earnings to repay debt, limiting dividend payouts.
3. Dividend decisions also play a role in the interrelationship. The company's dividend policy depends on its financial performance and the available cash flow. If the company pays out a substantial portion of earnings as dividends, it might have fewer funds available for investments.
   This could impact the company's growth prospects and, consequently, its ability to undertake profitable projects in the future.

Ultimately, the goal of these interrelated decisions is to maximize shareholder wealth while balancing risk and return. Financial managers must carefully assess the company's financial position, growth opportunities, and capital market conditions to strike an optimal balance between investment, financing, and dividend decisions. An efficient and well-structured interrelationship between these decisions can lead to a financially healthy and successful company in the long run.

PRACTICAL QUESTIONS

2014 - June [6] {C} Answer the following. (No credit will be given for answer without the reasoning)

(a) X deposits ₹ 1,00,000 at the beginning of each of years 1 and 3, and ₹ 1,00,000 at the end of each of the years 2, 4 and 5. Find the discounted value of the investments at the end of year 3 with a discount rate of 10%. (P.V. factor of 10% at the year end 0, 1, 2, 3, 4, 5 and 6 are respectively: 1, 0.909, 0.826, 0.751, 0.683, 0.621, 0.564) **(2 marks)**

Answer:

Discounted value at the end of 3 years

Year	Investment	PV factor at 10% at end of year 3	Discounted value
Beginning of year 1	1,00,000	$(1.1)^3 = 1.331$	1,33,100
End of year 2	2,00,000	$(1.1)^1 =$ 1.1	2,20,000
End of year 4	1,00,000	$1/(1.1) =$ 0.909	90,900
End of year 5	1,00,000	$1/(1.1)^2 =$ 0.826	82,600
Discounted value of the investments at the end of year 3			5,26,600

2014 - Dec [1] Answer the question:

(h) Ascertain the discounted value at 10% p.a. at the end of year 1 of an investment of ₹ 2,00,000 to be made at the end of year 2 and ₹ 30,000 made immediately. **(2 marks)**

Answer:

Discounted value at the end of year 1, Invested ₹ 30,000 now and 2,00,000 at the end of year 2.

30,000 (1 + 0.10)	= 30,000
2,00,000 /(1 + 0.10)	= 1,81,818
Total	**2,14,818**

2015 - June [I] (c) Ascertain the future value of annuity of ₹ 25,000 at the end of 6 years at 9% p.a. compounded annually. Assume that the amount is deposited at the beginning of every year. **(2 marks)**

(h) Mr. X expects to receive ₹ 2,00,000 at the end of three years. What would be the present value if the rate of discount is 10%? **(2 marks)**

Answer:

(c) Calculation of Future Value of Annuity:

Year	Annuity Amount (₹)	Future Value of (₹) 1	Future Value (₹)
1	25,000	1,677	41,925
2	25,000	1,539	38,475
3	25,000	1,412	35,300
4	25,000	1,295	32,375
5	25,000	1,188	29,700
6	25,000	1,090	27,250
Future value of Annuity at the end of 6th year			2,05,025

Answer:

(h) Present value $= \frac{\text{Future value}}{(1+i)^n}$

$= \frac{2,00,000}{(1+0.10)^3}$

$= \frac{2,00,000}{1.331}$

= ₹ 1,50,263

2023 - June [4] (a) (ii) Correlation Coefficient of Portfolio with market 0.8, Variance of Market Portfolio is 4/9th of Variance of Security, Cost of Equity 20%, Average Return on Market Portfolio 17.5%. Calculate the Risk-Free Rate of Interest on Govt. Treasury Bonds. **(2 marks)**

Answer:

ke = Rf + β (Rm- Rf)

Where, ke = Expected rate of return to the investors, or cost of equity capital

Rf = Risk free rate of return

Rm = Market rate of return

β = Beta coefficient by which the market risk is determined

Variance of Market portfolio = 4/9 variance of security

$$\frac{\text{Variance of Market Portfolio}}{\text{Variance of Security}} = \frac{4}{9}$$

$$\frac{\text{Standrard Deviation of Market Portfolio}}{\text{Standard Deviation of Security}} = \frac{2}{3}$$

$$\beta = \text{Correlation coefficient of portfolio} \times \frac{\text{Standrard Deviation of Security}}{\text{Standard Deviation of Market Portfolio}}$$

Risk Free rate of Return = .20 = Rf + 1.2(.175 - Rf)

$$Rf = \frac{.01}{.20} = .05 \text{ i.e. } 5\%$$

2023 - June [6] (a) Nona Ltd. provides you with the following information:

Particulars	Machine X	Machine Y
1. Purchase Price of Machine	₹ 6,00,000	₹ 10,00,000
2. Working Capital	₹ 3,00,000	₹ 5,00,000
3. Useful Life of the machine	5 years	8 years
4. Estimated Salvage Value at the end of useful life	₹ 1,00,000	₹ 2,00,000
5. Actual Salvage Value realised at the end of useful life	₹ 1,20,000	₹ 80,000
6. Method of Depreciation	Straight line	Straight line
7. Tax Rate	30%	30%
8. Annual Earning before Tax	₹ 4,00,000	₹ 4,00,000
9. Annuity Factor for 5/8 yrs @ 10%	3.791	5.335
10. PV Factor for 5th/8th year @ 10%	0.621	0.467

Required: Which of the above machines should be purchased?

(10 marks)

Answer:

Computation of Annual Cost

	Machine X (₹)	Machine Y (₹)
Profit Before Tax	4,00,000	4,00,000
Less: Income Tax	1,20,000	1,20,000
Profit after Tax (PAT)	2,80,000	2,80,000
Depreciation	1,00,000	1,00,000
Cash Flow after tax	3,80,000	3,80,000
Add: Release of Working capital	3,00,000	5,00,000
Add: Cash Salvage value of an asset	1,20,000	80,000
Less: Tax on profit on sale [30% of ₹20,000 i.e. (₹ 1,00,000 -1,20,000)]	(6,000)	-
Add: Tax saving on loss of sale [30% 1,20,000 i.e. (₹2,00,000- ₹ 80,000)]	-	36,000
CFAT (for last year)	7,94,000	9,96,000

Calculation of revised Net Present value

Particulars	Year	PV factor at 10%	Machine X		Machine Y	
			Amount	PV	Amount	PV
Purchase Price	0	1	(6,00,000)	(6,00,000)	(10,00,000)	(10,00,000)
Working Capital	0	1	(3,00,000)	(3,00,000)	(5,00,000)	(5,00,000)

CFAT for 1-4 year	1 to 4	3.17	3,80,000	12,04,600		
CFAT for 5th year	5	.621	7,94,000	4,93,074		
CFAT for 1-7 year	1-7	4.868			3,80,000	18,49,840
CFAT for 8th year	8	0.467			9,96,000	4,65,132
NPV				7,97,674		8,14,972
Annuity factor for	5th/8th			3.791		5.335
Annualized NPV (NPV/Annuity factor)				2,10,413		1,52,760

Machine X should be purchased since Machine X has higher annualized NPV than that of Machine Y.

2023 - June [6] (b) HONEY Ltd. having limited funds of ₹ 10,10,000 and cost of capital 10% is evaluating the desirability of following projects having useful life of 10 years:

Project	A	B	C	D	E	F
Initial Cash Outflows (₹)	50,000	1,00,000	1,50,000	2,00,000	2,50,000	6,00,000
Net Present Value (₹)	4,50,000	8,00,000	10,50,000	12,00,000	13,75,000	32,40,000
Ranking as per NPV	6	5	4	3	2	1
Ranking as per Profitability Index	1	2	3	4	5	6

Required:

(i) Which projects should be selected assuming that the projects are divisible and there is no alternative use of money allocated for capital budgeting.

(ii) Which projects should be selected assuming that the projects are indivisible and unutilised funds can be invested for a period of 10 years at a risk-free interest rate of 5%.

Note: The Compound Value of ₹ 1 @5% at the end of the 10th year is ₹ 1.629 and the Present Value of ₹ 1 @ 10% at the end of the 10th year is ₹ 0.386. **(2 + 3 = 5 marks)**

Answer:

Selection of Projects on the basis of PI Ranking when Projects are Divisible:

Project	Investment	PI Ranking	NPV
A	50,000	1	4,50,000
B	1,00,000	2	8,00,000
C	1,50,000	3	10,50,000
D	2,00,000	4	12,00,000
E	2,50,000	5	13,75,000
F	2,60,000	6	14,04,000
	10,10,000		62,79,000

Selection of Projects when Projects are Indivisible:

Combination 1:

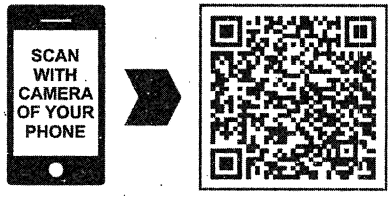
Projects	Investment	NPV Ranking	NPV
F	6,00,000	1	32,40,000
E	2,50,000	2	13,75,000
C	1,50,000	4	10,50,000
	10,00,000		56,65,000

Combination 2:

Projects	Investment	NPV
A	50,000	4,50,000
C	1,50,000	10,50,000

D	2,00,000	12,00,000
F	6,00,000	32,40,000
	10,00,000	59,40,000

Recommendation: The company is advised to undertake projects A, C, D and F since the NPV of A, C, D and F is more than the NPV of any other combination and ₹ 10,000 will remain unspent.



Scan QR Code for Additional Material

Motivational Thoughts
- **Quote:** "Success in financial management is not about having resources, but about resourcefulness."
- **Thought:** Encourage students to think of financial management as a life skill, not just a subject.

Checklist for Understanding
- Understand the concept of financial management.
- Learn the objectives: profit maximization vs. wealth maximization.
- Familiarize yourself with the scope and functions.
- Study the role of a CFO and evolving trends.

Fun Facts
- Did you know? The concept of "wealth maximization" emerged as a reaction to the industrial revolution's demand for more efficient resource allocation.
- First recorded financial management practice dates back to 1900 BCE in Mesopotamia, where receipts were written for loans!

Fun Flow
- Illustrate the flow of financial decision-making: Source Funds - Allocate Efficiently - Monitor Outcomes - Maximize Value

Last-Minute Analysis
- Objective-focused revision:
- Profit maximization: Short-term goals.
- Wealth maximization: Long-term goals.
- Role of the CFO: Strategist, Steward, Operator, and Catalyst.

Jargon Busters
- Define tricky terms: Leverage, Capital Allocation, Net Present Value (NPV).

Chapter Trend Analysis

THE GRAPH

Marks of Objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	INSTITUTIONS AND INSTRUMENTS IN FINANCIAL MARKETS
2A	**Financial Institutions**

THIS CHAPTER INCLUDES

1. Reserve Bank of India
2. Commercial Banks
3. NBFCs
4. Insurance Companies
5. Pensions Funds
6. Alternative Investment Funds (AIF): Angels, Venture Capital, Private Equity and Hedge Funds
7. SEBI Regulations (including AIF Circulars)

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2017 - Dec [10] (c), 2018 - Dec [10] (ii)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2017 - Dec [10] Write short notes on the following:
(c) Venture Capital **(4 marks)**

Answer:

Venture Capital:

Venture Capital is a form of equity financing especially designed for funding high risk and high reward projects. There is a common perception that

Venture Capital is a means of financing high technology projects. However, Venture Capital is investment of long term financial made in:

1. Ventures promoted by technically or professionally qualified but unproven entrepreneurs, or
2. Ventures seeking to harness commercially unproven technology, or
3. High risk ventures. The term 'Venture Capital' represents financial investment in a highly risky project with the objective of earning a high rate of return.

Modes of Finance by Venture Capitalists:

1. Equity Most of the venture capital funds provide financial support to entrepreneurs in the form of equity by financing 49% of the total equity. This is to ensure that the ownership and overall control remains with the entrepreneur. Since there is a great uncertainty about the generation of cash inflows in the initial years, equity financing is the safest mode of financing. A debt instrument on the other hand requires periodical servicing of dept.
2. Conditional Loan From a venture capitalist point of view, equity is an unsecured instrument hence a less preferable option than a secured debt instrument. A conditional loan usually involves either no interest at all or a coupon payment at nominal rate. In addition, a royalty at agreed rates payable to the lender on the sales turnover. As the units picks up in sales interest rate are increased and royalty amounts are decreased.
3. Convertible Loans the convertible loan "is subordinate' to all other loans which may be converted into equity if interest payments are not made within agreed time limit.

2018 - Dec [10] Write short notes on the following:
(ii) Venture Capital. **(4 marks)**

Answer:

Please refer 2017 - Dec [10] (c) on page no. **14**

DISTINGUISH BETWEEN

2015 - June [2] (c) (II) What are the differences between Merchant Banks and Commercial Banks? **(4 marks)**

Answer:

The differences between merchant banks and commercial banks are:

(i) Commercial banks do banking business i.e.,accept deposits and use deposits for giving loan but merchant bank work as consultancy type business i.e., helps in issue of management in issue of shares etc.
(ii) The nature of loan given by commercial bank is debt related but loan given by merchant bank is equity related.
(iii) Commercial bank does not take any risk of client but merchant bank takes risk of client.
(iv) Commercial bank acts as a financier but merchant bank acts as a financial advisor.
(v) Commercial Banks are regulated by the Banking Regulation Act, 1949 and are under the control of RBI whereas merchant banks are governed by rules and regulations framed by SEBI.
(vi) Commercial banks do mass banking with general public but merchant bank deals with a class of selected clients.

DESCRIPTIVE QUESTIONS

2015 - Dec [1] (a) List two direct instruments and two indirect instruments used by RBI in the implementation of its monetary policy. **(2 marks)**

Answer:

Direct Instruments:

Cash Reserve Ratio (CRR): The share of net demand and time liabilities that banks must maintain as cash balance with the Reserve Bank.

Statutory Liquidity Ratio (SLR): The share of net demand and time liabilities that banks must maintain in safe and liquid assets, such as government securities, cash and gold.

Indirect Instruments:

Liquidity Adjustment Facility (LAF): Consists of daily infusion or absorption of liquidity on a repurchase basis, through repo (liquidity injection) and reverse repo (liquidity absorption) auction operations, using government securities as collateral.

Open Market Operations (OMO): Outright sales/purchases of government securities, in addition to LAF, as a tool to determine the level of liquidity over the medium term.

2015 - Dec [2] (b) (II) What is the principal business of the following entities?

(i) Asset Finance Company (AFC)

(ii) Investment Company (IC)

(iii) Infrastructure Debt Fund-NBFC (IDF-NBFC) **(3 marks)**

Answer:

(i) **Asset Finance Company (AFC):** An AFC is a company which is a financial institution carrying on as its principal business the financing of physical assets supporting productive/economic activity, such as automobiles, tractors, lathe machines, generator sets, earth moving and material handling equipments, moving on own power and general purpose industrial machines. Principal business for this purpose is defined as aggregate of financing real/physical assets supporting economic activity and income arising therefrom is not less than 60% of its total assets and total income respectively.

(ii) **Investment Company (IC):** IC means any company which is a financial institution carrying on as its principal business the acquisition of securities,

(iii) **Infrastructure Debt Fund:** Non-Banking Financial Company (IDF-NBFC): IDF-NBFC is a company registered as NBFC to facilitate the flow of long term debt into infrastructure projects. IDF-NBFC raise resources through issue of Rupee or Dollar denominated bonds of minimum 5 year maturity. Only Infrastructure Finance Companies (IFC) can sponsor IDF - NBFCs.

2017 - June [8] Answer the following question:

(a) What are the tools and techniques used by RBI to maintain financial stability? **(4 marks)**

Answer:

The Reserve Bank makes use of a variety of tools and techniques to assess the build-up of systemic risks in the economy and to provide critical inputs in this respect to its policy making departments.

The tools include:

- **A Financial Stress Indicator** - a contemporaneous indicator of conditions in financial markets and in the banking sector.
- **Systemic liquidity Indicator** for assessing stresses in availability of systemic liquidity.
- **A Fiscal Stress Indicator** for assessing build up of risks from the fiscal.
- **A Network Model** of the bilateral exposures in the financial system - for assessing the inter- connectedness in the system.
- **A Banking Stability Indicator** for assessing risk factors having a bearing on the stability of the banking sector; and
- A series of **Banking Stability Measures** for assessing the systemic importance of individual banks.

2024 - June [2] (a) Briefly describe the primary functions of commercial banks in India. **(7 marks)**

Answer:

The primary functions of commercial banks in India are:

1. **Acceptance of Deposits from Public:** Bank accepts following deposits from publics:
   (a) Demand deposits can be in the form of current account or savings account. These deposits are withdrawable any time by depositors by cheques. Current deposits have no interest or nominal interest.
   (b) Fixed deposits are those deposits which are withdrawable only after a particular period. It earns a higher rate of interest.
   (c) In recurring deposits, people deposit a fixed sum every month for a fixed period of time.

2. **Advancing Loans:** It extends loans and advances out of money deposited by public to various business units and to consumers against some approved.

Generally, banks grant short-term or medium-term loans to meet requirements of working capital of industrial units and trading units. Banks discourage loans for consumption purposes.

Banks do not give loan in form of cash. They make the customer open account and transfer loan amount in the customer's account.

Banks grant loan in following ways:

(i) Overdraft
(ii) Cash Credit
(iii) Discounting Trade Bills
(iv) Term Loan
(v) Consumer Credit
(vi) Money at Call or Short-term Advances

3. **Credit Creation:** Credit creation is other banking function of commercial bank. i.e., it manufactures money.
4. **Use of Cheque System:** Banks have introduced the cheque system for withdrawal of deposits.
5. **Remittance of Funds:** Banks provides facilities to remit funds from one place to another for their customers by issuing demand drafts, mail transfer etc.

PRACTICAL QUESTIONS

2016 - Dec [5] (b) Name the Regulatory Authority of the following entities:

(i)	Chit Funds
(ii)	Insurance Companies
(iii)	Housing Finance Companies
(iv)	Venture Capital Funds
(v)	Non-Banking Financial Companies

(vi)	Stock Broking Companies
(vii)	Nidhi Companies
(viii)	Private Banks

(You may mention the Roman numeral and the corresponding Regulatory Authorities without copying the entities in the answer books). **(4 marks)**

Answer:

Sl. No.	Regulatory Authority	Entity
(i)	Respective State Govts.	Chit Fund
(ii)	IRDA	Insurance Companies
(iii)	NHB (National Housing Bank)	Housing Finance Companies
(iv)	SEBI	Venture Capital Funds
(v)	RBI	NBFC
(vi)	SEBI	Stock Broking Companies
(vii)	Ministry of Corporate Affairs (MCA), Govt. of India	Nidhi Companies
(viii)	RBI	Private Banks

2017 - Dec [8] (a) Fill in the following table - Identify the function of the bank under the appropriate classification and tick to mention whether it is a banking or a non-banking function:
(You are required to write only columns I, III, IV and V in your answer.)

I	II	III	IV	V
Sl. No.	Activity	Category of Function	Banking Function	Non- Banking Function
(i)	Discounting bills of exchange			

(ii)	Electronic Funds Transfer between accounts of customers			
(iii)	Periodic payments of electricity bills of customers			
(iv)	Acceptance of Public Provident Fund Deposits			

(4 marks)

Answer:

I	II	III	IV	V
Sl. No.	**Activity**	**Category of Function**	**Banking Function**	**Non-Banking Function**
(i)	Discounting bills of exchange	Advancing loans	√	
(ii)	Electronic funds transfer between accounts	Remittance of Funds	√	
(iii)	Periodic payments of electricity bills of customers	Agency service		√
(iv)	Acceptance of Public Provident Fund Deposits	General Utility Service		√

Paper 11 Financial Management and Business Data Analytics

Feedback	I Need More	Scanner Preparation Key
Scan to Share your Experience	Scan for Quick Assistance	Scan & go to "My Books"

Motivational Thoughts

- Quote: "A strong financial institution is the backbone of a thriving economy."
- Thought: Highlight how understanding financial institutions is key to understanding the flow of money in the economy.

Checklist for Understanding

- Definition and types of financial institutions.
- Roles of central banks, commercial banks, and non-banking financial companies (NBFCs).
- Importance of financial markets in the economy.
- Regulatory framework and institutions like SEBI.

Fun Facts

- The first modern bank, Banca Monte dei Paschi di Siena, was founded in 1472 and is still operational!
- The concept of central banking originated in Sweden in 1668 with Sveriges Riksbank.

Fun Flow
- Illustrate the flow of money: Depositor - Bank - Loan - Investment - Economic Growth

Last-Minute Analysis
- Central Banks: Roles in monetary policy and economic stability.
- Commercial Banks: Functions like deposits, loans, and credit creation.
- NBFCs: Importance in niche financial services (e.g., leasing, microfinance).

Smart Study Tips
- Focus on key roles and differences between types of institutions.
- Use simple diagrams to map their interconnections.
- Relate functions to real-life examples (e.g., home loans from commercial banks).

Quick Study Tips
- Memorize acronyms for types of institutions: CCN (Central, Commercial, Non-Banking).
- Focus on their core functions and differences.

Practical Analysis
- Study the role of Reserve Bank of India (RBI) in managing inflation.
- Analyze how NBFCs cater to underserved sectors like rural areas.

Real-World Experience
- Example: How HDFC Bank revolutionized retail banking in India.
- Case: Role of central banks during the 2008 financial crisis.

Visual Storytelling
- Comic strip showing how a loan application progresses through a commercial bank.

Storytelling
- Case Study: How microfinance institutions like Grameen Bank uplifted rural economies.
- The story of SEBI ensuring fair practices in stock markets.

Fun Mnemonics
- **FUND for financial institutions:**
  - Financial Intermediation
  - Unlocking Capital
  - Networking Funds
  - Driving Economic Growth

Diagrammatic Representations
- Visualize the hierarchy of financial institutions: Central Bank - Commercial Banks - NBFCs.
- Flowchart of regulatory mechanisms by institutions like SEBI.

Motivational Case Studies
- How ICICI Bank transformed from a development bank to a global financial institution.
- The role of World Bank in developing economies.

Key Takeaways
- Financial institutions enable efficient resource allocation.
- Each type has a distinct role in the economy.

Jargon Busters
- Simplify terms like credit creation, financial intermediation, and monetary policy.

Chapter Trend Analysis

THE GRAPH

Marks of Objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	INSTITUTIONS AND INSTRUMENTS IN FINANCIAL MARKETS
2B	**Capital Market**

THIS CHAPTER INCLUDES

1. Primary and Secondary Markets and its Instruments
2. Compulsory / Optionally Convertible Financial Instruments, Deep Discount Bonds
3. Euro Bond and Masala Bond
4. Rolling Settlement, Clearing House Operations
5. Dematerialization, Re-materialisation and Depository System
6. Initial Public Offering (IPO), Follow on Public Offer (FPO), Book Building, Green-shoe Option
7. Offer for Sale, Private Placement and Preferential Allotment
8. Insider Trading
9. Credit Rating - Credit Rating Methods and Rating Agencies in India

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2015 - June [3] (a) (ii), 2016 - June [8] (b)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2013 - Dec [6] (b) Write short note on the following:

(iii) Sources of credit rating information. **(5 marks)**

Answer:

Sources of Credit Rating Information: The following are the important sources:

1. Trade references	Prospective customer may be required to give 2 or 3 trade references. Thus, the customers may give a list of personal acquaintances or some other existing credit-worthy customers. The credit rating agency may contact the references given by customer. The information provided by such references may provide valuable information about the customer.
2. Bank references	Customer requests his banker to provide the required information to the rating agencies.
3. Credit bureau reports	Associations for specific industries may maintain a credit bureau which provides useful and authentic credit information for their members.
4. Past experience	Past experience of dealings with an existing customer also provides requisites information. The transactions should be carefully scrutinized and interpreted in the light of changes in the ensuing period for finding out the credit risk involved.
5. Published Financial Statements	These statements of a customer, read along with its audit report and observations can be examined to determine the credit- worthiness.
6. Reports from point of sale	Credit-worthiness can be evaluated by the reports provided by the consulting salesmen or persons engaged at the point of sale. Such reports are useful as they are first hand reports.
7. Reports from other agencies	Non-Banking Financial Companies (leasing companies, etc) may maintain a defaulting customers/ suit-filed cases, etc. CRISIL is one of the entities which maintain detailed list defaulters.

2017 - June [8] Answer the following question:

(d) Write a short note on price based auction in securities market. **(4 marks)**

Answer:

Price Based Auction in Securities Market:

In this type of auction, RBI announces the issue size or notified amount and the tenor of the paper to be auctioned, as well as the coupon rate. The bidders submit bids in terms of the price. This method of auction is normally used in case of reissue of existing Government Securities. Bids at price lower than the cut off price are rejected and bids higher than the cut off price are accepted. Price Based auction leads to a better price discovery than the Yield based auction.

DISTINGUISH BETWEEN

2016 - June [8] Answer the following:

(a) Differentiate between capital market and money market with respect to the following aspects:

(i) Type of Investment
(ii) Participants
(iii) Regulators
(iv) Risk **(4 marks)**

Answer:

Aspect	Capital Market	Money Market
(i) Type of Instruments	Debt and Equity Instruments	Debt Instruments only.
(ii) Participants	Retail Investors, Institutional Investors (Mutual Funds), Financial Institutions, etc.	Banks, Financial Institutions, Reserve Bank of India, Government.

(iii) Risk	Low credit and market risk involved	High credit and market risk.
(iv) Regulator	SEBI	RBI.

2023 - Dec [2] (a) Examine the difference between Primary Market and Secondary Market. **(7 marks)**

Answer:

Primary Market	Secondary Market
It deals with new securities, i.e., securities which were not previously avail-able, and are offered for the first time to the investors.	It is a market for old securities which have been issued already and granted stock exchange quotation.
Securities are acquired from issuing companies themselves.	Securities are purchased and sold by the investors without any involvement of the companies.
It provides funds to new enterprises & also for expansion and diversification of the existing one and its contribution to company financing is direct.	It does not supply additional funds to company since the company is not involved in transaction.
It does not lend any liquidity to the securities.	The secondary market provides facilities for the continuous purchase and sale of securities, thus lending liquidity and marketability to the securities.
It is not rooted in any particular spot and has no geographical existence. it has neither any tangible form nor any administrative organizational set up.	Secondary markets have physical existence in the form of stock exchange and are located in a particular geographical area having an administrative organization.

Helps in creating new capital.	Helps in maintenance of existing capital.
Volume of transaction is low as compared to secondary market.	Volume of transaction is high as compared to primary market.

DESCRIPTIVE QUESTIONS

2013 - Dec [5] (b) Estimate the disadvantages of Book Building system, in relation to Indian Capital Market. **(4 marks)**

Answer:

Book building system is part of initial public offer (IPO) of Indian Capital Market.

Following are the disadvantages:

1. There is a possibility of price rigging on listing.
2. The system works very efficiently in matured market conditions. Such conditions are not found in India.
3. It is appropriate for mega issues only. In case of small and medium issues, the book building process is not cost effective.
4. The company should be fundamentally strong and well known to investors; without it, Book building process will be unsuccessful.

2014 - June [5] (a) What is 'Follow-on Public Offer (FPO)' with reference to Capital market? **(5 marks)**

Answer:

Follow-on Public Offer (often but incorrectly called "Secondary Offering") is an offer of sale of securities by a listed company.

Follow-on offering can be either of two types (or a mixture of both): Dilutive and non-dilutive. A secondary offering is an offering of securities by a shareholder of the company (as opposed to the company itself, which is a primary offering). Follow-on offering is preceded by release of prospectus similar to IPO.

In the case of Dilutive Offering, the company's Board of Directors agrees to increase the share float for the purpose of selling more equity in the company.
This new inflow of cash might be used to pay off some debt or used for needed company expansion.
When new shares are created and then sold by the company, the number of shares outstanding increases and this causes dilution of earnings on a per share basis.
Usually the gain of cash inflow from the sale is strategic and is considered positive for the longer-term goals of the company and its shareholders.
Some owners of the stock however may not view the event as favorably over a more short-term valuation horizon.
The Non-dilutive type of follow-on offering is when privately held shares are offered for sale by company directors or other insiders (such as Venture Capitalists) who may be looking to diversify their holdings.
Because no new shares are created, the offer is not dilutive to existing shareholders, but the proceeds from the sale do not benefit the company in any way.
Usually however, the increase in available shares allows more institutions to take non-trivial positions in the company.
A non-dilutive offering is also called a secondary offering. Follow-on Public offering is different from Initial Public Offering.

2014 - Dec [1] (d) What is Rolling settlement? **(2 marks)**
Answer:

(a) Meaning: Rolling settlement is a system of netting or finalization of stock-exchange transactions on daily - basis, in other words in a rolling settlement system, each trading day is considered as a trading period and trades period and trades executed during the day are settled based on the net obligation for the day.

(b) Example: At present trades in securities at the 2 working day, excluding public holiday, which comes between the settlement period. However, with straight through processing (STP), now settlement period has shrinked to T + 1.

(c) Significance of rolling settlement system: (a)In rolling settlement system, risks become manageable and transactions costs are less in the long run since margins are not more necessary.
(b) It is globally accepted settlement system because it creates a safer market by reducing risk.
(c) Price - volatility, default etc., will be minimized.
(d) It enables both the trader & investors to rotate funds more quickly.

2014 - Dec [3] Answer the questions:
(a) (ii) Explain any two processes of Credit Rating. **(2 marks)**
Answer:

Process of Credit Rating:	
1. Rating Request	The Customer (prospective issuer of Debt Instrument) makes a formal request to the Rating Agency. The request spells out the terms of the rating assignment and contains analysis of the issues viz. historical performance, competitive position, business risk profile, business strategies, financial policies and evaluation of outlook for performance.
2. Formation of Rating Team	The Credit Rating Agency forms a team, whose composition is based on the expertise and skills required for evaluating the business of the Issuer.
3. Initial Analysis	On the basis of the information gathered, the analysts submit the report to the Rating team. The authenticity and validity of the information submitted influences the credit rating activity.

2015 - June [3] (a) (II) Explain the advantages of the Book Building Process. **(4 marks)**
(b) (II) Explain any two limitations of Credit Rating. **(4 marks)**
Answer:

(a) (II) Advantages of Book Building:
1. The book building process helps in discovery of price & demand.

2. The costs of the public issue are much reduced.
3. The time taken for the completion of the entire process is much less than that in the normal public issue.
4. In book building, the demand for the share is known before the issue closes. Infact, if there is not much demand, the issue may be deferred.
5. It inspires investor's confidence leading to a large investor universe.
6. Issuers can choose investors by quality.
7. The issue price is market determined.

(b) (II) Limitations of Credit Rating are

(a) Rating Changes	Rating given to instruments can change over a period of time. They have to be kept under rating watch. Downgrading of an instrument may not be timely enough to help investors.
(b) Industry Specific rather than Company Specific	Downgrades are linked to industry rather than company performance. Agencies give importance to macro aspects and not to micro ones; over react to existing conditions which come from optimistic / pessimistic views arising out of up / down turns.
(c) Cost -Benefit of Rating	Ratings being mandatory, it becomes a must for entities rather than carrying out Cost Benefit Analysis of obtaining such, ratings. Rating should be optional and the entity should be free to decide on the issue of obtaining a credit rating.

2016 - June [8] Answer the following:
(b) List four advantages of the book building process. **(4 marks)**

Answer:

Please refer 2015 - June [3] (a) (II) on page no. 32

2016 - Dec [7] (c) What is "Rolling Settlement" in the context of Clearing House Operations? **(3 marks)**

Answer:

Rolling Settlement:

Settlement is the process in which traders who have made purchases make payments while those who have sold shares deliver them.

The Exchange ensures that buyers receive their shares and sellers receive their payment.

The process of settlement is managed by stock exchanges through Clearing Houses.

A Rolling Settlement is the settlement cycle of the Stock Exchange where all trades outstanding at the end of the day have to be settled, i.e. the buyer has to make payments for securities purchased and the seller has to deliver the securities sold.

Example: In case of T + 1 settlement, transactions entered into on a day must be settled within the next working day. In the case of T + 2, settlement has to happen within two working days from the date of the transaction.

2018 - Dec [8] (c) Classify the following items under the appropriate category– whether Money Market (MM) or Capital Market (CM): (You may choose to write only the Roman numeral under the appropriate head. Do not use brackets for the Roman numerals.)

(i) Inter Bank Participation Certificate
(ii) Equity Shares
(iii) SWAPS
(iv) REPOS
(v) RBI and government are participants
(vi) Commercial paper
(vii) Global Depository Receipts (GDRs)
(viii) Deep Discount Bonds (DDBs)

You may use the following format in your answer books:

MM	CM

(4 marks)

Answer:

(i) Money Market
(ii) Capital Market
(iii) Money Market
(iv) Money Market
(v) Money Market
(vi) Money Market
(vii) Capital Market
(viii) Capital Market

PRACTICAL QUESTIONS

2015 - June [1] (j) Nile Ltd. issues 12% debentures of face value ₹ 100 each and realized ₹ 90 per debenture. The debentures are redeemable after 12 years at a premium of 10%. The Company is paying tax of 35%. What will be the Cost of Debt? **(2 marks)**

Answer:

Cost of Debt (K_d) = {12(1-0.35) + (110 – 90)/12}/(110 + 90)/2
= 7.8 + 1.67 = 9.47%.

2016 - June [1] (a) Answer the sub-division:

(ii) Mr. Ravi is planning to purchase the shares of X Ltd. which had paid a dividend of ₹ 2 per share last year. Dividends are growing at a rate of 10%. What price would Mr. Ravi be willing to pay for X Ltd.'s shares if he expects a rate of return of 20%? **(2 marks)**

Answer:

(ii) Rate of return $= \frac{D_1}{P_0} + g$

$$0.2 = \frac{2(1+0.1)}{P_0} + 0.1$$

$$0.2 = \frac{2.2}{P_0} + 0.1$$

$$0.1 = \frac{2.2}{P_0}$$

$$P_0 = \frac{2.2}{0.1} = ₹\ 22$$

2016 - Dec [7] (b) Identify the defects in the following statement:
A purchased for ₹ 90,000 a 10% Deep Discount Bond with face value ₹ 1,00,000 and maturity period of one year. **(3 marks)**

Answer:

Defect:

10 % is wrong. DD Bonds are zero per cent bonds.
Maturity Period one year is wrong. Usually for long periods up to 30 years, at least five year period.
Hence, Discount amount would not be a mere ₹ 10,000. It will be very high, i.e. issue price will be much lower than ₹ 90,000. So that interest for the tenure is covered in the form of the discount.

2021 - Dec [1] Y is an instrument that entitles the holder to buy the underlying stock from the issuer company itself at a fixed exercise price until the expiration date. Identify Y.? **(1 mark) [Sec. B - SAQ]**

Answer: Y is a warrant

2021 - Dec [7] X is type of negotiable financial security that is traded on a local stock exchange but represents an equity that is issued by a foreign publicly listed company. Identify X? **(1 mark) [Sec. B - SAQ]**

Answer:

Depository Receipt

Chapter Trend Analysis

THE GRAPH

Marks of Objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	INSTITUTIONS AND INSTRUMENTS IN FINANCIAL MARKETS
2C	**Money Market**

THIS CHAPTER INCLUDES

1. Call Money
2. Treasury Bills
3. Commercial Bills
4. Commercial Paper
5. Certificate of Deposits
6. Repo, Reverse Repo
7. Promissory Notes and Government Securities

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2013 - Dec [8] (b), 2015 - June (iii) (b) (ii)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2013 - Dec [8] (b) Write a short note on Commercial Paper in India.

(4 marks)

Answer:

Issue of Commercial Papers in India: Commercial Paper (CP) is an unsecured money market instrument issued in the form of a promissory note. It was introduced in India in 1990 with a view to enabling highly rated corporate borrowers to diversify their sources of short-term borrowings and

to provide an additional instrument to investors. Subsequently, primary dealers and all-India financial institutions were also permitted to issue CP to enable them to meet their short-term funding requirements for their operations. Since the CP represents an unsecured borrowing in the money market, the regulation of CP comes under the purview of the Reserve Bank of India:

(a) CP can be issued in multiples of ₹5 Lakhs.
(b) CP can be issued for a minimum duration of 7 days and maximum period of 1 year.
(c) For issuing CP the company's net worth should be more than ₹ 5 crores.
(d) CP can neither be redeemed before maturity nor can be extended beyond the maturity period.
(e) CP issue requires a credit rating of P2 from CRISIL or A2 from ICRA.

2015 - June [III] (b) (ii) Write short notes on:
(b) Issue of commercial papers in India **(4 marks)**

Answer:

Please refer 2013 - Dec [8] (b) on page no. 38

2016 - June [8] Answer the following:
(e) Write a short note on Liquidity Adjustment Facility (LAF). **(4 marks)**

Answer:

Liquidity Adjustment Facility (LAF):

1. LAF is a facility extended by the Reserve Bank of India to the scheduled commercial banks (excluding RRBs) and primary dealers to avail of liquidity in case of requirement or park excess funds with the RBI in case of excess liquidity on an overnight basis against the collateral of Government securities including State Government securities.
2. Basically LAF enables liquidity management on a day to day basis.
3. The operations of LAF are conducted by way of repurchase agreements with RBI being the counter-party to all the transactions.
4. The interest rate in LAF is fixed by the RBI from time to time.

2018 - Dec [8] (d) Write short notes on 'repo' and 'reverse repo'. **(4 marks)**

Answer:

Repo or ready forward contact is an instrument for borrowing funds by selling securities with an agreement to repurchase the said securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed. Repo rate is the return earned on a repo transaction expressed as an annual interest rate.

The reverse of the repo transaction is called 'reverse repo' which is lending of funds against buying of securities with an agreement to resell the said securities on a mutually agreed future date at an agreed price which includes interest for the funds lent. It can be seen from the definition above that there are two legs to the same transaction in a repo/reverse repo. The duration between the two legs is called the 'repo period'. Predominantly, repos and undertaken on overnight basis, i.e., for one day period. Settlement of repo transactions happens along with the outright trades in Government securities.

DISTINGUISH BETWEEN

2013 - Dec [2] (c) Distinguish between 'Inter Corporate Deposits' and 'Public Deposits'. **(3 marks)**

Answer:

Inter-Corporate Deposits:

- When a company borrows funds from another company, it is called inter-corporate borrowings or inter-corporate deposits.
- Generally a low rated company which is not able to get finance from bank goes to other companies to provide loans.
- Some companies having surplus cash may lend the money knowing very well the risk involved, in the expectation of higher than market rate of interest.
- Such deposits or loans are not secured by any assets and are very risky.
- Such transactions are subject to the provisions of the Companies Act 2013, even then the risk involved is high because the paying capacity of the loan taking company is questionable.

Other salient features are :

(i) Short term finance;
(ii) Deposits made by one company to another company and are subject to the provisions of the Companies Act, 2013;
(iii) Rate of interest varies depending upon amount involved and time period; and
(iv) the risk is very high.

Public Deposits: Deposits from public may be accepted by (i) banks; (ii) companies; (iii) other financial institutions. If a company accepts deposits from public, it has to stick to the guidelines issued by the Companies Act, 2013 as well as the RBI. Any deposit from public can be made only after following the guidelines of RBI. Other salient features are:

(i) Both short term and medium term finance;
(ii) Deposits from public and shareholders, subject to the rules prescribed by RBI;
(iii) The maximum amount that can be raised, maturity period, and procedures as per conditions laid down by the RBI;
(iv) These deposits are unsecured loans and are used for working capital requirements.

2015 - Dec [1] (b) Differentiate between open-end and closed-end mutual funds. **(2 marks)**

Answer:

Open End and Closed End Funds:

Aspect	Open End Funds	Closed End Funds
Initial Subscription	Open End Fund is one which is available for subscription all through the year.	Fund is open for subscription only during a specified period.
Maturity	Do not have a fixed maturity.	Stipulated maturity period (3 to 15 Years)

Subsequent Transactions	Investors can buy and sell units at Net Asset Value related prices.	Investors can invest at the time of the initial public issue and thereafter they can buy or sell the units of the scheme on the stock exchanges where they are listed.
Repurchase	Any time.	Based on terms of the fund. Periodic repurchase at NAV related price.

2016 - Dec [5] Illustrate the difference between 'money market' and 'capital market'. **(5 marks)** ***[CSPP M - III]***

Answer:

Distinguish between Money Market and Capital Market

	Money Market	Capital Market
1.	Lending or borrowing of short-term, one year or below.	Lending borrowing of short-term more than one year.
2.	Call Money, Treasury Bills, Commercial Bills, Commercial Papers, and Bills of Exchange.	Stocks, Shares, Debentures, Bonds, Corporate Deposits.
3.	Commercial banks, acceptance houses, non-banking financial institutions, bill brokers.	Stock exchanges, banks, insurance, mortgage banks.
4.	Provides working capital.	Provides capital to buy land machinery.
5.	Low risk and high liquidity.	High risk and low liquidity.
6.	Central bank has close and direct link.	Central bank indirect link.
7.	Commercial bank are closely regulated.	Institutions are not much regulated.

2019 - June [8] Answer the following question:

(b) State the differences between Indian Treasury Bills and Central Government securities on the following aspects:

(i) Purpose of issue

(ii) Tenor **(4 marks)**

Answer:

	Treasury Bills	Central Government Securities
Purpose	To tide over short term liquidity shortfalls	To meet Govt, expenditure commitments
Tenor	91 days, 182 days, 364 days.	More than 1 year, up to 30 years

DESCRIPTIVE QUESTIONS

2014 - June [4] (a) What are the pre-requisites for an efficient money market? What are its benefits? **(4 + 2 = 6 marks)**

Answer:

Pre-requisites for an efficient money market are:	
(i) Economic system	A political instable system is never good for an efficient money market. Politically stable environment supported by a well developed network of banking and financial system is basic requirement of an efficient money market.
(ii) Integrity	Transactions in money market are concluded over telephone followed by written confirmation from the contracting parties. Hence, integrity is a basic necessity. Thus, banks and other players in the market may have to be licensed and effectively supervised by the regulators.

(iii) Short-term funds	Suppliers and consumers of short term money should be well connected with each other by means of a common platform. The market should be able to provide an investment outlet for any temporarily surplus funds that may be available.
(iv) Clearing mechanism	Development of money market is impossible without an efficient and effective clearing mechanism. Efficient clearing and settlement systems. Electronic Fund Transfer (EFT), Depository System, Delivery versus payment, High value inter-bank payment system etc. are essential pre-requisites for ensuring a risk-free and transparent payment and settlement system.
(v) Regulation	Enough, efficient and effective regulation should be at place to control and set right the defaulters. Government and Central Bank intervention to moderate liquidity profile.
(vi) Apex body	An empowered Central Bank to ensure credibility in the system and to supervise and regulate the players in the market.
(vii) Instruments	Many financial instruments and products should be available in the market with different interest rates, returns, risks, liquidity and maturity options.
(viii) Integration	Market should be integrated with the rest of the markets in the financial system to ensure perfect equilibrium. The funds should move from one segment of the market to another for exploiting arbitrage opportunities.

Benefits of an efficient money market may be as follows:

- Provides a stable source of funds to Banks.
- Encourages development of non-bank entities.

- Facilitates Government market borrowing.
- Makes effective monetary policy actions.
- Helps in pricing different floating interest products.

2014 - June [5] Evaluate the following instruments from the perspective of investors:
(a) Treasury Bills
(b) Certificate of Deposit
(c) Commercial Paper. **(5 marks)** ***[CSPP M - III]***

Answer:

(a) Treasury Bills : Treasury Bills are very useful instruments to deploy short term surpluses depending upon the availability and requirement. Besides, better yields and availability for very short tenures, another important advantage of treasury bills over bank deposits is that the surplus cash can be invested depending upon the staggered requirements. The benefits of treasury bill can be summarized as under:
(a) No tax deducted at source
(b) Zero default risk being sovereign paper
(c) Highly liquid Money Market instrument
(d) Better returns especially in the short term
(e) Transparency
(f) Simplified settlement
(g) High degree of tradability and active secondary market facilitates 'meeting unplanned fund requirements.

(b) Certificate of Deposit: Certificate of Deposit (CD) provides higher yield than Treasury bills and savings account. CDs are liquid instruments as they are transferable by endorsement and delivery. The holder can resell his certificate to another. As the rate of interest is fixed, the return on investment is secured despite the rate fluctuations in the market. There is no lock-in period for the CDs.

(c) Commercial Paper: Commercial Paper (CP) is a quick and cost effective way of raising working capital. Investing in CP is the best way to take the advantage of short term interest rate fluctuations in the market. It provides an easy exit option to the investors by quitting the investment. It has a wide range of maturity period.

2014 - Dec [1] (a) Mention any three economic functions of Financial markets. **(2 marks)**
(c) Write down the objective of Inter Bank Participation Certificate. **(2 marks)**

Answer :

(a) Financial markets and their economic functions: A financial market is a market where financial instruments are exchanged or traded. Financial markets provide the following three major economic functions:
(i) Price discovery
(ii) Liquidity
(iii) Reduction of transaction costs.

(c) Inter Bank Participation Certificate:
Objective: To provide a degree of flexibility in the credit-portfolio of Banks. It can be issued by Scheduled Commercial Bank and can be subscribed by any Commercial Bank.
Types: There are two types of participation certificates:

Aspect	Without Risk to Lender	With Risk to Lender
Period	Period not exceeding 90 Days	91 Days to 180 Days
Disclosure	**Issuing Bank:** Disclose as Liability under Borrowing from Banks. **Participating Bank:** Advances to Bank	**Issuing Bank:** Reduce from Advances Outstanding. **Participating Bank:** Under Advances

2014 - Dec [3] Explain briefly about money market mutual funds (MMMFs). **(5 marks)** ***[CSPP M - III]***

Answer:

One of the recent developments in money market is the establishment of Money Market Mutual Funds, the guidelines of which have been prescribed by the Reserve Bank of India. These can be set up by the Banks and Financial Institutions. There can also be Money Market Deposit Accounts (MMDAs).

The main features are given below:

(a) Limit:

(i) The resources raised under Money Market Mutual Funds should not exceed 2% of the sponsoring bank's fortnightly average aggregate deposits.

(ii) If the limit is less than 50 crores for any bank, it may join with some other bank for the purpose.

(iii) In case of Financial Institution, the limit should not exceed 2% of the long term domestic borrowings as per latest audited balance sheet.

(b) Eligibility: MMMFs are primarily intended for individual investors including NRIs who may invest on a non-repatriable basis and would be free to determine the minimum size of the investment by a single investor.

(c) Minimum Rate of Return: There is no guaranteed minimum rate of return.

(d) Lock-in Period: The minimum lock-in period is 46 days.

(e) Deployment of Capital: The resourced mobilized by MMMFs should be invested exclusively in various Money Market Instruments.

(f) Money Market Mutual Funds Investment Limits:

(i) Treasury Bills and dated government securities having unexpired maturity up to one year-Minimum 25%.

(ii) Call/Notice Money-Minimum 30%.

(iii) Commercial Paper - maximum 15%. The exposure to CP issued by an individual company should not be more than 3%.

(iv) Commercial Bills accepted/co-opted by Banks - Maximum 20%.

(v) Certificate of Deposits- No limits.

2016 - June [6] "Money market mutual funds are the lowest-risk variety of mutual funds, but they are not risk-free." Discuss.

(5 marks) ***[CSPP M - III]***

Answer:

Money Market Mutual Fund (MMMF) is a scheme of a mutual fund set up with the objective of investing exclusively in money market instruments. Money market funds are regarded as high liquidity oriented as investor attaches more value for safety and liquidity. MMMFs are exclusively

governed by SEBI (Mutual Funds) Regulations, 1996 w.e.f. March 07, 2000. MMMFs are the lowest-risk variety of mutual funds, but they aren't risk-free.

The risks associated with MMMFs are as under:

1. MMMFs are subject to market risks and do not have any risk cover like "Deposit Insurance and Credit Guarantee Corporation" for upto ₹ 1,00,000(Rupees one lakhs only) against defaults by banks in India.
2. **Negative returns:** Over a period, Money Market Mutual Funds can result in negative yield to the investors in real value if inflation rate is higher than the risk free rate of return.
3. While Money Market Mutual Funds generally invest in government securities and other vehicles that are considered comparatively safe, they may also take some risks in order to obtain higher yields for their investors.
   So, in order to try to capture another tenth of a percentage point of return, it may invest in bonds or commercial paper that carry additional risk.
4. **Expenses charged by Money Market Mutual Funds can result in fall in returns to the investors:** Being relatively safe investments, the returns on Money Market Mutual Funds are lowest and even a small annual fee can substantially reduce the profits on such funds. This may make it even more difficult for money market investors to keep pace with inflation.

2016 - Dec [1] (iv) State 4 features of Government Securities. **(2 marks)**

(vii) What is an entry load and an exit load in the context of a Mutual Fund? **(2 marks)**

Answer:

(iv) The students may write any four features from the following:

(1) Government Securities are mostly interest bearing dated securities issued by RBI on behalf of the Government of India.

(2) These securities are generally fixed maturity and fixed coupon securities carrying semi-annual coupon.

(3) Issued at face value.

(4) No default risk as the securities carry sovereign guarantee.
(5) Ample liquidity as the investor can sell the security in the secondary market.

(vii) Mutual Funds recover their initial marketing expenses from the fund subscribers either at the time of joining, by allotting lesser units (entry load) or by deducting from the existing NAV while making payment when unit holders exit the Fund (exit load).

2017 - Dec [8] (b) Discuss the nature of call money market in India with reference to the duration, borrowers and security. **(4 marks)**

Answer:

Nature of call money market with reference to duration, borrowers and security are discussed below:

Duration: These loans are given for a very short duration, between 1 day to 15 days.

Borrowers: These are mainly interbank loans, among commercial banks from each other. Other borrowers are bill market, dealers in stock exchange for purpose of dealings in stock exchange, individuals of high financial status in Mumbai etc. for ordinary trade purpose in order to save interest on cash credit and overdrafts.

Security: There are no collateral securities demanded against these loans, i.e., unsecured.

2019 - June [8] Answer the following question:

(a) State the differences between Commercial Paper (CP) and Certificate of Deposit (CD) on the following aspects:
(i) Issuer
(ii) Conditions to be satisfied by an issuer to be eligible for an issue.
(4 marks)

Answer:

	CP	CD
Issuer	Corporates, Primary Dealers	Scheduled Commercial Banks other than RRBs, Local Area Banks
Eligibility	Tangible net worth not less than ₹ 4 cr. Working capital limit not to be less than ₹ 4 cr. Credit rating to be at least P-2 of CRISL or PP2/ P2 of D2 of other rating agencies	Banks have to maintain CLR and SLR on the issue price of CDs

2023 - June [2] (b) List any four Alternative Investment Funds (AIF) and four Credit Rating Agencies in India. List any six Money Market Instruments Traded. List any four features of Treasury bills. How is Yield on Treasury Bills calculated? **(2 + 2 + 3 + 2 + 1 = 10 marks)**

Answer:

Four Alternative Investment Funds (AIF)

1. Angel Fund
2. Venture Capital Fund
3. Private Equity Fund
4. Hedge Funds

Credit Rating Agencies in India:

1. CRISIL Ratings Limited (Formerly the Credit Rating Information Services of India Limited):
2. ICRA limited (Formerly Investment Information and Credit Rating Agency of India):
3. Care Ratings Limited (Credit Analysis and Research Limited)
4. India Ratings and Research Pvt. Ltd. (Formerly Fitch Ratings India Pvt. Ltd.):
5. Brickwork Ratings India Private Limited
6. Acuite Ratings & Research Limited (Formerly SMERA)

Money Market Instrument:

1. Commercial Bills
2. Commercial Paper
3. Certificate of Deposits (CD)
4. Treasury Bills
5. Call Money
6. Swaps
7. Inter Corporate Deposits

Features of Treasury Bills:

1. They are negotiable securities.
2. They are highly liquid as they are of shorter tenure and there is a possibility of inter-bank repos in them.
3. There is an absence of default risk.
4. They have an assured yield; low transaction cost, and is eligible for inclusion in the securities for SLR purposes.
5. At present, there are 91-day, 182-day, and 364-day T-bills in vogue.

Yield in Treasury Bills:

It is calculated as per the following formula:

$$\text{Yield} = \frac{100 - P}{P} \times \frac{365}{D} \times 100$$

Where, P = Purchase price D= Days to maturity

Day Count for Treasury Bill: Actual number of days to maturity/ 365

2024 - Dec [2] (a) What are the principal features of a commercial paper? Discuss the advantages offered by commercial paper to its issuers. **(7 marks)**

PRACTICAL QUESTIONS

2015 - June [1] (a) X purchased 182 days, Indian T-Bills of face value 35 lacs at an issue price of P. If the effective yield is 10% for the T-Bill, determine P. **(2 marks)**

Answer:

Yield = (F – P)/P × 365/182

0.1P + 2.005P = 35,00,000 × 2.005

i.e., 2.105P = 70,19,230

P = 33,34,551

2015 - June [2] (a) The following particulars relates to Gilt Fund Scheme:

1.	Investment in Shares (at cost)	
	IT and ITES Companies	₹ 20 Crores
	Infrastructure Companies	₹ 22 Crores
	FMCG	₹ 15 Crores
	Automotive	₹ 20 Crores
	Banking/Financial Services	₹ 8 Crores
2.	Cash and other Assets in Hand (even throughout the fund period)	₹ 4 Crores
3.	Investment in Fixed Income Bearing Bonds	
	Listed Bonds [10,000 10% Bonds of ₹ 10,000 each]	₹ 10 Crores
	Unlisted Bonds	₹ 10 Crores
4.	Expenses payable as on closure date	₹ 2 Crores
5.	Market Expectation on Listed Bonds	9%
6.	No. of Units Outstanding	₹ 4 Crores

The particulars relating to sectoral index are as follows:

Sector	Index on the date of purchase	Index on the valuation date
IT and ITES	1,800	2,800
Infrastructure	1,400	2,500

FMCG	1,600	2,500
Automotive	2,000	3,000
Banking/Financial Services	1,500	2,200

The Fund has incurred the following expenses:

Management Advisory Fees	₹ 260 Lakh
Administration Expenses	₹ 300 Lakh
Publicity and Documentation	₹ 100 Lakh
Total	₹ 660 Lakh

The period under consideration is 2 years. The Fund has distributed ₹ 1.5 per unit as annual cash dividend. Compute the annualised net return (%) and the expense ratio of the Fund. **(8 marks)**

(b)(II) Classify the following items under the appropriate category- Whether Money Market (MM) or Capital Market (CM):

(i) RBI and Government are participants
(ii) Regulated by SEBI
(iii) Tenor of instruments is usually less than a year
(iv) Treasury Bills
(v) Commercial Papers
(vi) Zero Coupon Bonds
(vii) Equity Shares
(viii) Debentures **(4 marks)**

Answer:

(a) (i) Net Asset Value of the Fund

Particulars	₹ in Crore
1. Market Value of Shares in -	
(a) IT and ITES [Cost ₹ 20 × Closing Sector Index 2,800 ÷ Opening Sector Index 1,800]	31.11
(b) Infrastructure [Cost ₹ 22 × Closing Sector Index 2,500 ÷ Opening Sector Index 1,400]	39.29

(c) FMCG [Cost ₹ 15 × Closing Sector Index 2,500 ÷ Opening Sector Index 1,600]	23.44
(d) Automotive [Cost ₹ 20 × Closing Sector Index 3,000 ÷ Opening Sector Index 2,000]	30.00
(e) Banking [Cost ₹ 8 × Closing Sector Index 2,200 ÷ Opening Sector Index 1,500]	11.73
2. Market Value of Investment in Listed Bonds [Face Value ₹ 10 Crores × Interest on Face Value 10% ÷ Market Expectation 9%]	11.11
3. Cost of Investment in Unlisted Bonds	10.00
4. Cash and Other Assets	4.00
Total Assets of the Fund	160.68
Less: Outstanding Expenses	2.00
Net Asset Value of the Fund	158.68

Note: It is assumed that Cash and other Assets existed from the beginning of the period at the same values.

(ii) Net Asset Value per Unit

NAV per Unit = Net Asset Value of the Fund ÷ No. of the Outstanding
= ₹ 158.68 Crores ÷ 4 Crore Units
= ₹ 39.67

(iii) Annualized Return on Fund

(a) Computation of Opening NAV

	Particulars	₹ in Crore
1.	Investment in Shares (at Cost)	
	• IT and ITES companies	20.00
	• Infrastructure Companies	22.00

	• FMCG	15.00
	• Automotive	20.00
	• Banking / Financial Services	8.00
2.	Investment in Fixed Income Bearing Bonds	
	• Listed Bonds [10,000 10% Bonds of ₹ 10,000 each]	10.00
	• Unlisted Bonds	10.00
	Net Asset Value	105.00

Note: Cash and Other Assets are not included because they arise out of investments made in the beginning.

(b) Computation of Opening NAV per Unit

NAV per Unit = Net Asset Value of the Fund ÷ No. of Units Outstanding
= ₹ 105.00 Crores ÷ 4.00 Crore Units
= ₹ 26.25

(c) Computation of Returns per Unit

- Capital Appreciation = Closing NAV per Unit – Opening NAV per Unit
  = ₹ 39.67 – ₹ 26.25 = ₹ 13.42
- Cash Dividend = ₹ 1.5 × 2 Years – ₹ 3
- Returns = [Cash Dividend + Capital Appreciation] ÷ Opening NAV
  = [₹ 3.00 + ₹ 13.42] ÷ ₹ 26.25 = ₹ 16.42 ÷ ₹ 26.25
  = 62.55%
- Return p.a. = Total Return/ Period = 62.55% ÷ 2 Years
  = 31.28%

(iv) Expense Ratio

(a) Total Expense = Management Advisory Fee ₹ 2.60 Cr. + Administration Exp. ₹ 3.00 Cr. + Publicity and Documentation ₹ 1.00 Cr.
= ₹ 6.6 Crores

(b) Average Value of Portfolio = (Opening Net Asset Value + Closing Net Asset Value) ÷ 2
= (₹105 Crores + ₹158.68 Crores) ÷ 2
= ₹263.68 Crores ÷ 2
= ₹ 131.84 Crores

(c) Expense Ratio = Total Expenses ÷ Average Value of Portfolio
= (₹ 6.6 Crores ÷ ₹ 131.84 Crores) × 100
= 5.01%

(d) Expense Per Unit = Total Expenses ÷ No. of Units
= ₹ 6.6 Crores ÷ 4.00 Crores = ₹ 1.65

(b) (II) (i) MM (ii) CM (iii) MM (iv) MM (v) MM (vi) CM (vii) CM (viii) CM

2016 - June [4] A trade bill is drawn by a supplier of goods as follows:

Value of goods sold	:	₹ 10,00,000
Number of days of the bill (take 365 days per year)	:	60 days
Rate of discount (to be charged by banker)	:	12.50% p.a.

You are required to calculate —

(a) Discount on the bill; and **(3 marks)**

(b) Amount to be paid by the bank on the date of presentment of the bill at the bank for discounting. **(2 marks)**

Answer:

(a) Discount on bill = (face value of the bill*time in years × rate of interest)/10

$$= \frac{10,00,000 \times 60 \times 12.50}{365 \times 100} = ₹\ 20,547.94$$

Discount on the bill can be stated as the Simple Interest on the face value of the bill for unexpired time.

(b) Amount to be paid by the Bank = Face value of the bill – Discount on the Bill = ₹ 9,79,452.06
(i.e. ₹ 10,00,000 – ₹ 20,547.94).

2016 - Dec [8] (c) State the features of the Call Money Market on the following aspects:

(i) Purpose
(ii) Duration
(iii) Security
(iv) Call Rate
(v) Lenders (Name four lenders) **(6 marks)**

Answer:

Call Money Market – Features:

(i) **Purpose:**
Close to Money;
Provide liquidity for Government and banks;
Low risk;
Short term;
Banks use this for CRR or SLR requirements;
Bill market, Stock Exchange Dealers and high net worth individuals;
To meet sudden demand for funds arising out of large outflows.

(ii) **Duration:** One day to fifteen days.

(iii) **Securities:** Unsecured; No collateral security.

(iv) **Call rate:** Varies as per market demand and supply conditions. It is high during March (even around 25%) and low in April, October, etc. (even as low as 7%). It also varies according to place. It is higher in Kolkata and lower in Mumbai.

(v) **Lenders:** RBI, Banks, Primary Dealers, Financial Institutions like LIC, UTI, GIC, IDBI, NABARD, ICICI, Specified All India Financial Institutions, Mutual Funds.

2017 - June [3] (a) A Mutual Fund made an issue of 10,00,000 units of ₹ 10 each on 01.01.2016. No entry load was charged. It made the following investments after incurring initial expenses of ₹ 2 lacs.

Particulars	₹
50,000 Equity Shares of ₹ 100 each @ ₹ 160	80,00,000
7% Government Securities	8,00,000
9% Debentures (unlisted) of ₹ 100 each	5,00,000
10% Debentures (Listed) of ₹ 100 each	5,00,000
Total	98,00,000

During the year, dividends of ₹ 12,00,000 were received on equity shares, interest on all types of debt securities was received as and when due. At the end of the year, equity shares and 10% debentures are quoted at 175% and 90% of their respective face values. Other investments are quoted at par.

(i) Find out the Net Asset Value (NAV) per unit given that the operating expenses during the year amounted to ₹ 5,00,000.

(ii) Also find out the NAV, if the Mutual Fund had distributed a dividend of ₹ 0.90 per unit during the year to the unit holders. **(8 marks)**

Answer:

Computation of Closing Net Asset Value

Particulars	Opening Value of Investments (₹)	Capital Appreciation (₹)	Closing Value of Investments (₹)	Income (₹)
Equity Shares	80,00,000	7,50,000	87,50,000	12,00,000
7% Govt. Securities	8,00,000	Nil	8,00,000	56,000

9% Debentures (unlisted)	5,00,000	Nil	5,00,000	45,000
10% Debentures (Listed)	5,00,000	-50,000	4,50,000	50,000
Total	98,00,000	7,00,000	1,05,00,000	13,51,000
Less: Operating Expenses during the period				(5,00,000)
Net Income				8,51,000
Net Fund Balance = ₹ (1,05,00,000 + 8,51,000)				1,13,51,000
Less: Dividend = ₹ 9,00,000 (10,00,000 × 0.90)				(9,00,000)
Net Fund balance (after Dividend)				1,04,51,000
Net Asset Value (Before Considering Dividends) = ₹ 1,13,51,000 ÷ 10,00,000				11.351
Net Asset Value (After Dividends) = ₹ 1,04,51,000 ÷ 10,00,000				10.45

Note: It has been assumed that the Closing Market Price of the investments have been quoted at a percentage of the Face Value.

2017 - Dec [3] (b) The NAV of a mutual fund having 4,00,000 units are ₹ 9.25 and 9.95 per unit at the beginning and end of the year respectively. If the fund has to pay a dividend of ₹ 0.85 per unit and ₹ 0.70 as capital gain per unit what would be the annual returns expressed as a percentage?
If instead of paying dividend and capital gain, the scheme decided to reinvest the distributable amounts at an average NAV of ₹ 9.15 per unit, compute the revised returns and show how the balance sheet would appear after the reinvestment. **(8 marks)**

Answer:

NAV on closing date = 4,00,000 × 9.95 = ₹ 39,80,000
Dividend Payable = 4,00,000 × 0.85 = ₹ 3,40,000
Capital Gain to be distributed = ₹ 2,80,000
Closing Fund Assets = ₹ 46,00,000

$$\text{Returns} = \frac{\text{Closing Fund Assets - Opening Assets Value}}{\text{Opening Assets Value}} = \frac{46,00,000 - 37,00,000}{37,00,000}$$

$$= \frac{9,00,000}{37,00,000} = 24.32\%$$

Total Distribution = 3,40,000 + 2,80,000 = ₹ 6,20,000
No. of units @ ₹ 9.15 per unit = 6,20,000/9.15 = 67,759.56
The return will be the same as the above.

Balance Sheet (After Reinvestment)

Liabilities	₹	Assets	₹
NAV on closing date		Fund Assets (Balancing Figure)	
4,00,000 units @ 9.95	39,80,000		
67,759.56 units @ 9.15 per unit	6,20,000		46,00,000
Total	**46,00,000**	**Total**	**46,00,000**

2018 - June [8] Answer the following question:

(c) Identify the following financial instruments: (You may present only the Roman numeral and the name of the instrument in your answers)

(i) X is a negotiable instrument issued in US $ and issued by a US Depository Bank for the benefit of a non US company that wishes to raise money in the US. X is listed on NYSE and NASDAQ. Issue of X offers access to both institutional and retail markets in the US.

(ii) Y is an instrument issued abroad by authorized overseas corporate bodies against shares or bonds of Indian companies held with nominated domestic custodial banks. An Indian company intending to issue Y will issue the corresponding number of shares to an overseas depository bank. Y is freely transferable outside India and dividend in respect of the shares represented by Y are paid in Indian rupees. Y is traded on OTC basis (Over the Counter). Y is listed on the London Stock Exchange.

(iii) Z is a zero-interest bond sold at a discount and redeemed at face value on maturity. Investors in Z are not looking for immediate return. Z is issued by the issuer to meet the long term requirements spanning 20-30 years. Z can also be traded in the market.

(iv) W is a negotiable certificate issued by a company or the Government, entitles the holder to repayment of principal and interest. Interest is paid periodically at predetermined intervals and the principal is repaid at a specified maturity date. **(4 marks)**

Answer:

(i) American Depositor Receipt
(ii) Global Depository Receipt
(iii) Deep Discount Bond
(iv) Bond

2018 - Dec [6] The following are the data on five mutual funds:

Mutual Fund	Return	Standard Deviation	Beta
A	15	7	1.25
B	18	10	0.75
C	14	5	1.40
D	12	6	0.98
E	16	9	1.50

(i) Compute the Sharpe Ratio and Treynor's Ratio and rank these funds assuming the risk free rate as 6%.

(ii) Compute the unsystematic risk of these funds.

(iii) Which of the two measures in (i) is more appropriate? Why?

(iv) Assuming that the risk free rate is not known, would you still be able to rank the funds using the Sharpe's and Treynor's ratios? Why?

(16 marks)

Answer:

(i) & (ii)

	Return	Rf	R-Rf	Std dev	Sharpe ratio	Shar - pe rank	Beta	Treynor ratio	Rank Trey	Unsystematic risk
A	15	6	9	7	1.285714	2	1.25	7.2	2	5.75
B	18	6	12	10	1.2	3	0.75	16	1	9.25
C	14	6	8	5	1.6	1	1.4	5.714286	5	3.6
D	12	6	6	6	1	5	0.98	6.122449	4	5.02
E	16	6	10	9	1.111111	4	1.5	6.666667	3	7.5

(iii) Treynor's method assumes that there is no unsystematic risk and that there is full diversification, whereas Sharpe's method does not assume this. Moreover, as is seen, standard deviation represents the total risk consisting of systematic and unsystematic risk. Unsystematic risk is high and hence, Treynor's assumption is not satisfied. Hence Sharpe's method results in a more appropriate ranking.

(iv) In practical application, the mean return and the standard deviation are estimated from historical data over the period of interest (for which the comparison to be made) and the risk free return is chosen accordingly Rate of return is required for the computation.

2019 - June [5] (b) A mutual fund made an issue of 20,00,000 units of ₹ 10 each at the beginning of the year. No entry load was charged. It made the following investments:

Particulars	Amount (₹)
1,00,000 Equity shares of ₹ 100 each @ ₹ 160	1,60,00,000
8% Government Securities	16,00,000

11% Debentures (unlisted)	10,00,000
10% Debentures (listed)	10,00,000
Total	1,96,00,000

During the year, dividends of ₹ 24,00,000 were received on equity shares. Interest on all securities was received for a full year as on the valuation date. Equity shares have a value of ₹ 180 per share as on valuation date and unlisted debentures are to be valued at 85% of the invested value. Initial expenses were ₹ 3 lacs, which are fully charged to the scheme in the first year. Up to the end of the year, operational expenses incurred were ₹ 4 lacs, of which ₹ 1.5 lacs remains payable next year. Just before the year end, 60,000 units were redeemed when the NAV was ₹ 12.5 NAV per unit and an exit load of 1% was charged. Find the NAV per unit as on valuation date which is at the end of the year. **(8 marks)**

Answer:

	₹
Investment made as per question	1,96,00,000
Initial Expenses	3,00,000
Cash balance (initial)	1,00,000
Amount collected = 20 lakh units × ₹ 10/u.	2,00,00,000

Value of Investments at valuation date	**(₹)**	**Income (₹)**
Equity share	1,80,00,000	24,00,000
8% Govt. securities	16,00,000	1,28,000
11% Debenture (Unlisted)	8,50,000	1,10,000
10% Debenture (Listed)	10,00,000	1,00,000
	2,14,50,000 (A)	**27,38,000**

Less:	Redemption ₹ 12.5 × 60,000U	(7,50,000)
Add:	Exit load 1%	7,500
Less:	Expenses paid	(2,50,000)
Add:	Cash	1,00,000
		(B) 18,45,000
Total:	Assets (A) + (B)	2,32,95,500
Less:	Expenses payable	(15,00,000)
	Net Assets	**₹ 2,31,45,500**

Units = 20,00,000 - 60,000 = ₹ 19,40,000

NAV per unit = $\frac{231,45,500}{19,40,000}$ = ₹ 11.93

2019 - June [6] (b) An 8.5% bond of ₹ 1,000 face value with five year maturity at par and a yield to maturity of 10% has ₹ 954.74 as the current market value, Calculate the price of the bond and compare it with the market price. What action should the holder of the bond take? **(6 marks)**

Answer:

Year	**PV factor 10%**	**Cash Flow (₹)**	**PV at 10% (₹)**
1	0.909	85	77.27
2	0.826	85	70.21
3	0.751	85	63.84
4	0.683	85	58.06
5	0.621	85	52.79
5	0.621	1000	621.00
Total			**943.17**

The bond is overpriced since the present value at 10% is only ₹ 943.17 whereas the market price is ₹ 954.74. Hence it should be sold.

2019 - Dec [5] (a) A has invested in different points in time, in three schemes of a mutual fund. The following details are given

Scheme	MF-P	MF-Q	MF-R
Amount of investment (₹)	2,00,000	4,00,000	2,00,000
NAV (₹/unit) on purchase date	10.30	10.10	10.0
Dividend received up to 30-11-2019 (₹)	6000	0	5000
NAV (₹/unit) on 30-11-2019	10.25	10.0	10.20
Effective annual yield (%) as on 30-11-2019	9.66	–11.66	24.15

Find out the following:

Number of units			
Holding period (no. of days)			
Holding period yield (%) up to two decimal places			
NAV (₹) on 30-11-2019			

Also compute the overall effective annual yield for A. Consider 365 days p.a. **(10 marks)**

Answer:

Scheme		MF – P	MF – Q	MF – R
Investment	(a)	2,00,000	4,00,000	2,00,000
NAV per unit on purchase date	(b)	10.30	10.10	10.00
No of units	(c) = (a)/(b)	19417.48	39603.96	20000
NAVp.u.30/11	(d)	10.25	10.00	10.20
NAV ₹ 30/11	(e) = (c) × (d)	199029.17	396039.6	204000
Dividend/u	(f)	0.31	0	0.25

Cap gain/u	(g) = (d) – (b)	–0.05	–0.10	+0.20
Return p.u	(h) = (f) + (g)	0.26	–0.10	+0.45
Annual yield	(i)	9.66	–11.66	24.15
Holding period (days)	(j) = $\frac{(h \times 365)}{(i) \times (b)}$	95.38 = 95	30.99 = 31	68.01 = 68
Holding period yield (%)	(k) = (j × i)/365	2.52%	–0.989%	4.5%

Overall effective annual yield = (a) × (i)/8,00,000 = 2.62%

Alternative Answer:

(i) Number of units in each Scheme

MF-P	$\frac{₹2,00,000}{₹10.30}$	= 19,417.48
MF-Q	$\frac{₹4,00,000}{₹10.10}$	= 39,603.96
MF-R	$\frac{₹2,00,000}{₹10.00}$	= 20,000.00

(ii) Total NAV on 30.11.2019

MF-P	= 19,417.48 × 10.25	₹1,99,029.17
MF-Q	= 39,603.96 × 10.00	₹3,96,039.60
MF-R	= 20,000.00 × 10.20	₹2,04,000.00
Total		**₹7,99,067.77**

(iii) Total Yield

	Capital Yield	Dividend Yield	Total
MF-P	₹1,99,029.17 – ₹2,00,000 = – ₹970.83	₹6,000	₹5,029.17

MF-Q	₹3,96,039.60 – ₹4,00,000 = – ₹3,960.40	Nil	– ₹3,960.40
MF-R	₹2,04,000 – ₹2,00,000 = ₹4,000	₹5,000	₹9,000.00
Total			**₹10,068.77**

(iv) No. of days investment held

	MF-P	MF-Q	MF-R
Initial investment (₹)	2,00,000	4,00,000	2,00,000
Yield (₹)	5,029.17	–3,960.40	9,000.00
Yield (%)	2.5146	-0.9901	4.5
Period of Holding (days)	$\frac{2.5146}{9.66} \times 365$	$\frac{-0.9901}{-11.66} \times 365$	$\frac{4.5}{24.15} \times 365$
	= 95 days	= 31 days	= 68 days

Overall effective annual yield = $\frac{1932^* - 46640^* + 48300^*}{8,00,000} \times 100 = 2.62\%$

*(Yield × 365)/ Period of holding in days

2019 - Dec [8] Answer the following questions:

(a) (i) B is an Indian buyer of goods from S, a seller in USA. B's bank, BK, issues a document undertaking to pay S, a sum of $ 5000 on presenting evidence of shipping the goods. BK's agent bank in USA, upon confirmation by BK, pays S the $ 5000.
You are required to identify the document. **(2 marks)**

(ii) 'K' is a short term instrument issued by the RBI on behalf of the Government. K is issued at a discount to face value and is repaid at par on maturity. K is negotiable, with no default risk and eligible for SLR purposes. It is issued through the SGL account and only in book entry form. K has a secondary market also.
You are required to identify instrument 'K'. **(2 marks)**

(c) M is a person who has studied the trends and analysed the equity market. He feels that he is certain to gain due to increasing prices, but does not have the required money to invest and hold shares. He would like to benefit from the purchase of 10,000 shares of A Ltd. which is trading on BSE at ₹205 per share. According to his estimate, it will fetch him at least ₹215 per share within a month. He can spare only ₹3,00,000 for a month. Advise him on whether and how he can or cannot fulfil his desire, assuming that he will not borrow and invest, but is willing to trade in the equity market and assuming that his prediction comes true. **(4 marks)**

Answer:

(a) (i) Letter of Credit.
(ii) Treasury Bills.

(c) He can trade in the futures market.
215 ×10,000 = 21,50,000.
Approx 10 % margin = 2.15 lacs. He can buy futures for 10,000 shares and with 3 lacs, maintain the margin.
His gain will be 10 × 10,000 = 1,00,000 for an investment of less than 3 lacs for the month.
However, in the event of fall in prices, he will have to use the cash or liquidate part of the futures if he cannot provide for the maintenance margin. But if his prediction comes true, his margin will be restored when prices move up.

2021 - Dec [11] The face value of a 182 day T-Bill is ₹ 100. If the purchase price is ₹ 98.5 after 10 days of issue, calculate the yield of the T-Bill? **(1 mark) [Sec. B – SAQ]**

Answer:
3.23%

2021 - Dec [19] An investor has invested in a mutual fund when the NAV was ₹ 15.50 per unit. After 90 days the NAV was ₹ 14.45 per unit. During the period the investor got a cash dividend of ₹ 1.35 per unit and capital gain distribution of ₹ 0.20. Calculate the annualized return based on 360 days year count.? **(1 mark) [Sec. B – SAQ]**

Answer:
12.9%

2021 - Dec [1] The following information is available for Mutual Fund A, Mutual Fund B and Market Portfolio (M) for six months:

Month (2021)	April	May	June	July	August	September
Fund	Return (%)					
Fund A	3.00	1.75	(1.00)	3.50	1.50	0.00
Fund B	2.25	(1.25)	0.00	3.00	2.50	1.00
Market		(0.75)	2.00	1.50	0.25	3.50
Portfolio (M)	1.00					

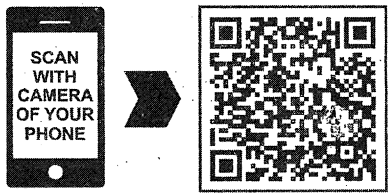
Risk-free interest rate is 6% p.a

(i) Compute Average Returns (AR), Risk of losses (RL) of Funds A, B and M
(ii) Compute the Morning Star Index of A, B and M
(iii) Compute the standard deviation (s.d) of the returns of A, B and calculate the Sharpe Ratio of A

(12 marks) [Sec. C Two LAQ]

Answer:
Compute Average Returns (AR) of fund A, B and M
Fund A
Add the returns for each month: 3 + 1.75 + (-1) + 3.5 + 1.5 + 0 = 8.75
Divide by the number of months (6): 8.75 / 6 = 1.4583 (approximately 1.46)
Fund B
Add the returns for each month: 2.25 + (-1.25) + 0 + 3 + 2.5 + 1 = 7.5
Divide by the number of months (6): 7.5 / 6 = 1.25
Market Portfolio (M)
Add the returns for each month: 1 + (-0.75) + 2 + 1.5 + 0.25 + 3.5
Sum = 7.5
Divide by the number of months (6): 7.5 / 6 = 1.25

Compute Risk of Losses (RL)
Risk of Losses means the probability of negative returns.
Fund A = 0.33
Fund B = 0.38
Market Portfolio (M) = 1.00
Compute the Morning Star Index
The Morning Star Index is the average return divided by the risk of losses.
Fund A
Average Return: 1.46
Risk of Losses: 0.17
Morning Star Index: 1.46 / 0.17 = 8.59 (approximately 1.13)
Fund B
Average Return: 1.25
Risk of Losses: 0.17
Morning Star Index: 1.25 / 0.17 = 7.35 (approximately 0.87)
Market Portfolio (M)
Average Return: 1.25
Risk of Losses: 0.17
Morning Star Index: 1.25 / 0.17 = 7.35 (approximately 1.00)
Compute Standard Deviation and Sharpe Ratio
Standard deviation measures the spread of returns. Here, we assume it's already calculated.
Fund A
1. Standard Deviation: 1.57
Fund B
1. Standard Deviation: 1.50
Sharpe Ratio for Fund A
Sharpe Ratio = (Average Return - Risk-Free Rate) / Standard Deviation
1. Risk-Free Rate = 6% per year = 0.5% per month
2. Fund A Average Return: 1.46
3. Standard Deviation: 1.57
4. Sharpe Ratio: (1.46 - 0.5) / 1.57 = 0.611



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Paper 11 Financial Management and Business Data Analytics		
Feedback	**I Need More**	**Scanner Preparation Key**
Scan to Share your Experience	Scan for Quick Assistance	Scan & go to "My Books"

Motivational Thoughts
- Quote: "The money market is the heartbeat of the economy, keeping short-term finances flowing efficiently."
- Thought: Highlight how the money market ensures liquidity and stability, essential for economic progress.

Fun Flow
- Visualize money market dynamics: Surplus Funds - Money Market - Short-Term Borrowers - Economic Stability

Checklist for Understanding
- Definition and characteristics of the money market.
- Instruments like Treasury Bills, Commercial Paper, and Certificates of Deposit.
- Participants: Banks, financial institutions, governments, and corporates.
- Functions: Liquidity management and short-term funding.
- Role of the Reserve Bank of India (RBI) or other central banks.

Fun Facts
- Treasury bills are one of the oldest financial instruments, dating back to the 1870s in India.
- The London Money Market is considered the first modern money market.

Last-Minute Analysis
- Key Instruments:
- Treasury Bills: Short-term government securities.
- Commercial Paper: Unsecured promissory notes by corporates.
- Certificates of Deposit: Time deposits issued by banks.
- Importance: Ensures liquidity and funds for short-term requirements.

Smart Study Tips
- Create flashcards for money market instruments and their features.
- Use diagrams to understand how participants interact in the money market.

Quick Study Tips
- Focus on differences between money and capital markets.
- Memorize examples of instruments and their tenure.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER 3	Tools for Financial Analyses

THIS CHAPTER INCLUDES

1. Comparative, Common-Size Financial Statements and Trend Analysis
2. Financial Ratio Analysis
   - Financial Scores: Altman's Z Score, Beneish M Score, Piotroski F Score
3. Fund Flow Statement – Preparation and Analysis
4. Cash Flow Statement – Preparation and Analysis

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2017 - June [10] (d), 2019 - June [10] (c)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2018 - June [10] Write short notes on the following:
(a) Debtors Turnover Ratio
(c) Advantages of Ratio Analysis **(4×2 = 8 marks)**

Answer:

(a) The receivables turnover ratio is an accounting measure used to quantify a firm's effectiveness in extending credit and in collecting debts on that

credit. The receivables turnover ratio is an activity ratio measuring how efficiently a firm uses its assets.

Receivables turnover ratio can be calculated by dividing the net value of credit sales during a given period by the average accounts receivable during the same period. Average accounts receivable can be calculated by adding the value of accounts receivable at the beginning of the desired period to their value at the end of the period and dividing the sum by two.

The method for calculating receivables turnover ratio can be represented with the following formula:

$$\text{Accounts Receivable Turnover} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

The receivables turnover ratio is most often calculated on an annual basis, though it can also be calculated on a quarterly or monthly basis.

(c) When employed correctly, ratio analysis throws light on many problems of the firm and also highlights some positives. Ratios are essentially whistleblowers, they draw the managements attention towards issues needing attention. Let us take a look at some advantages of ratio analysis.

- Ratio analysis will help validate or disprove the financing, investment and operating decisions of the firm. They summarize the financial statement into comparative figures, thus helping the management to compare and evaluate the financial position of the firm and the results of their decisions.
- It simplifies complex accounting statements and financial data into simple ratios of operating efficiency, financial efficiency, solvency, long-term positions etc.
- Ratio analysis help identify problem areas and bring the attention of the management to such areas. Some of the information is lost in the complex accounting statements, and ratios will help pinpoint such problems.
- Allows the company to conduct comparisons with other firms, industry standards, intra-firm comparisons etc. This will help the organization better understand its fiscal position in the economy.

2018 - Dec [10] Write short notes on the following:

(i) Defensive-Interval Ratio (DIR).

(iii) Advantages of Ratio Analysis. **(4 marks each)**

Answer:

(i) Defensive Interval Ratio (DIR): This ratio denotes the liquidity of a firm in relation to its ability to meet projected daily expenditure from operations.

It can be expressed as follows:

$$\text{Defensive Interval Ratio} = \frac{\text{Liquid assets (quick assets)}}{\text{Daily Cash Requirements (Projected)}}$$

Daily cash requirements (projected) = Projected cash operating expenditure/Number of days in a year.

The DIR is thought by many people to be a better liquidity measure than the quick and current ratios.

Because these ratios compare assets to liabilities rather than comparing assets to expenses, the DIR and current/quick ratios would give quite different results if the company hand allot of expenses, but no debt.

(iii) **Please refer 2018 - June [10] (c) on page no. 74**

2019 - June [10] Write short notes of the following:

(d) Significance of Funds Flow Statement (FFS) **(4 marks)**

Answer:

Significance of Funds Flow Statement (FFS):

Funds Flow Statement (FFS) is a widely used tool in the hands of financial executives for analysing the financial performance of a business concern. The Balance Sheet provides only a static view of the business. It is a statement of assets and liabilities on a particular date. It does not show the movement of funds. In business, funds flow from different sources and similarly funds are invested in various sources of investment. It is a continuous process. The study and control of this funds flow process is the main objective of Financial Management. There is a need to prepare a statement to know the changes in assets, liabilities and owners' equity

between dates of two Balance Sheets. Such a statement is called FFS or 'Statement of Sources and Uses of funds' or 'Where come and Where gone statement'

FFS provides a summary of management decisions on financing activities of the firm and investment policy.

FFS helps the Finance Managers to completely analyse the various financial operations. It guides the management in formulating the financial policies such as dividend, reserves etc.

FFS serves as a measure of control to the management.

FFS helps in evaluating the firm's financing. It shows how the funds were obtained from various sources and used.

FFS acts as a guide for the future. It helps the management in knowing how effectively the working capital is put to use. It reveals the financial soundness of the business. It helps the management in framing its investing policy.

DISTINGUISH BETWEEN

2018 - June [10] (d) Differences between Funds Flow Statement and Cash Flow Statement . **(4 marks)**

Answer:

S. No	Basis For Comparison	Cash Flow	Fund Flow
1.	Meaning	A cash flow statement is a statement showing the inflows and outflows of cash and cash equivalents over a period.	A fund flow statement is a statement showing the changes in the financial position of the entity in different accounting years.

2.	Purpose of Preparation	To show the reasons for movements in the cash at the beginning and at the end of the accounting period.	To show the reasons for the changes in the financial position, with respect to previous year and current accounting year.
3.	Basis	Cash Basis of Accounting.	Accrual Basis of Accounting.
4.	Analysis	Short Term Analysis of cash planning.	Long Term Analysis of financial planning

DESCRIPTIVE QUESTIONS

2013 - Dec [9] (b) Answer the following:

(i) Classify the following independent items of cash flows under AS-3

1. Cash receipts from future contracts held for trading purpose.
2. Cash receipts from repayment of advances to third parties other than a financial enterprise.
3. Cash interest received from by a financial enterprise.
4. Cash received from disposal of fixed assets.
5. Cash receipts from interests in joint venture.
6. Dividends paid by a non-financial enterprise.
7. Cash payments on account of acquisition of a subsidiary.
8. Cash flows arising from taxes on income, not specifically identifiable. **(4 marks)**

Answer:

Classification of the following independent items of cash flows under AS-3:

1. Cash receipts from future contracts held for trading purpose should be classified Cash flows from operating Activity.
2. Cash receipts from repayment of advances to third parties other than a financial enterprise should be classified Cash flows from Investing Activity.

3. Cash interest received from by a financial enterprise should be classified Cash flows from operating Activity.
4. Cash received from disposal of fixed assets should be classified Cash flows from Investing Activity.
5. Cash receipts from interests in joint venture should be classified Cash flows from Investing Activity.
6. Dividends paid by a non-financial enterprise should be classified Cash flows from Financial Activity.
7. Cash payments on account of acquisition of a subsidiary should be classified Cash flows from Investing Activity
8. Cash flows arising from taxes on income, not specifically identifiable should be classified Cash flows from operating Activity.

2014 - June [6] {C} Answer the following. (No credit will be given for answer without the reasoning)
(d) Will the following items feature in the cash flow statements as per AS-3? If so, state the category under which the item will be shown.
(i) Cash paid to develop self constructed fixed asset.
(ii) Acquisition of another entity by issue of shares.
(iii) Conversion of debt to equity. **(2 marks)**

Answer:
(i) Cash flow from investing activity.
(ii) Non-cash transactions.
(iii) Non-cash transactions.

2014 - June [9] Answer the following:
(b) (iii) What is debt-service coverage ratio? Explain its significance. **(4 marks)**

Answer:
Debt Service Coverage Ratio: This ratio indicates whether the business is earning sufficient profits to pay not only the interest charged, but also whether due of the principal amount. The ratio is calculated as follows:

$$\text{Debt Service Coverage Ratio} = \frac{\text{Profit after Taxes + Depreciation + Interest on Loan}}{\text{Interest on Loan + Loan repayment in a year}}$$

Significance of Debt Service Coverage Ratio:
- The ratio is the key indicator to the lender to assess the extent of ability of the borrower to service the loan in regard to timely payment of interest and repayment of loan installment.
- A ratio of 2 is considered satisfactory by the financial institutions the greater debt service coverage ratio indicates the better debt servicing capacity of the organization.

PRACTICAL QUESTIONS

2013 - Dec [7] (a) The Balance-Sheet of XYZ Ltd. for the year ended 31.03.2013 is given below:

Balance Sheet as at 31.03.2013

Liabilities	₹	Assets	₹
Equity Share Capital	5,00,000	Land & Building	1,00,000
Preference Share Capital	2,00,000	Machinery	4,00,000
General Reserve	1,00,000	Furniture	50,000
Secured Loans	3,00,000	Inventory	3,00,000
Sundry Creditors	1,00,000	Sundry Debtors	3,00,000
		Cash/Bank Balances	50,000
Total	12,00,000		12,00,000

Calculate the following ratios from the given Balance Sheet
(i) Current Ratio
(ii) Proprietary Ratio
(iii) Debt-Equity Ratio
(iv) Capital Gearing Ratio **(8 marks)**

Answer:
(i) Current Ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Assets = ₹ 3,00,000 + ₹ 3,00,000 + ₹ 50,000 = ₹ 6,50,000

Current Liabilities = ₹ 1,00,000

$$= \frac{6,50,000}{1,00,000} = 6.5 : 1$$

(ii) Proprietary Ratio $= \frac{\text{Shareholders Fund}}{\text{Total Tangible Assets}}$

$$= \frac{5,00,000 + 2,00,000 + 1,00,000}{12,00,000}$$

$$= \frac{8,00,000}{12,00,000}$$

$$= 2 : 3$$

(iii) Debt Equity Ratio $= \frac{\text{Total long term debt}}{\text{Shareholder's funds}}$

$$= \frac{3,00,000}{8,00,000}$$

$$= 3 : 8$$

(iv) Capital Gearing Ratio

= Long Term Debt including preferential CapitaloverEquity shareholder's fund

$$= \frac{5,00,000}{6,00,000}$$

$$= 5 : 6$$

2014 - June [7] (c) A chemical company has a net sales of ₹ 50 crores, cash expenses (including taxes) of ₹ 35 crores, and depreciation of ₹ 5 crores. If debtors decrease over the period by ₹ 6 crores, what will be the cash from operations? **(2 marks)**

(d) The balances of the Plant and M/c of A Ltd., on 31.03.2014 and 31.03.2013 were respectively ₹ 1,00,000 and ₹ 40,000. A machine with opening w.d.v. ₹ 6,000 was sold for ₹ 5,000 during the year 2013-14. Depreciation of ₹ 5,000 was charged during the year. Find the amount that will feature as 'application of funds' in the Fund Flow Statement. **(2 marks)**

Answer:

(c) Cash from operations

	Net Sales	50 Cr.
Less:	Cash expenses	35 Cr.
Add:	Decrease in Debtors	6 Cr.
	Cash from operation	21 Cr.

Answer:

(d) **Plant & Machinery Account**

Particulars	Amount	Particulars	Amount
To Balance c/d	40,000	By Depreciation	5,000
To Bank	71,000	By Bank	5,000
		By P& L A/c	1,000
		By Balance c/d	1,00,000
	1,11,000		1,11,000

Application of funds ₹ 71,000.

2014 - June [8] (a) The following information relates to N Ltd. for the year ending 31.03.2014:

Fixed Assets to sales ratio	2:1
Current ratio	2.5:1
Liquidity ratio	1.4:1
Debtors' turnover	12 times
Debt (long-term)-equity ratio	1:2
Current assets to fixed assets ratio	1:3
Working capital	₹ 15,00,000

Assume all sales are on credit.

Calculate the following:

(i) Current Assets
(ii) Total Assets
(iii) Sales
(iv) Debtors
(v) Inventory
(vi) Networth
(vii) Long-term debt
(viii) Cash and Bank balance **(8 marks)**

Answer:

Current Ratio = Current Assets/ Current Liabilities

2.5 = Current Assets/ Current Liabilities

Current Assets = 2.5 x Current Liabilities

Working Capital = Current Assets - Current Liabilities = 15,00,000
Or 2.5 x Current Liabilities - Current Liabilities = 15,00,000
∴ Current Liabilities = 10,00,000

(i) Current Assets = 2.5 x 10,00,000 = 25,00,000

(ii) Given, Current Assets to Fixed Assets Ratio = 1:3

Or $\frac{25,00,000}{\text{Fixed Assets}} = \frac{1}{3}$

Fixed Assets = 25,00,000 x 3 = ₹ 75,00,000
Total Assets = Fixed Assets + Current Assets
= 75,00,000 + 25,00,000
Total Assets = ₹ 1,00,00,000

(iii) Sales = Fixed Assets × 2 = 75,00,000 × 2 = ₹ 1,50,00,000

(iv) Debtors $= \frac{\text{Credit Sales}}{\text{Debtors turnover}}$

$= \frac{1,50,00,000}{12}$

= ₹ 12,50,000

(v) Liquidity Ratio = 1.4:1

$\frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}} = \frac{1.4}{1}$

$\frac{25,00,000 - \text{Inventory}}{10,00,000} = \frac{1.4}{1}$

Inventory = 11,00,000

(vi) **Net worth:**
Debt + Net worth = Fixed Assets + Current Assets - Current Liabilities
=1,00,00,000 - 10,00,000 = ₹ 90,00,000
Debt equity ratio = 1:2
Net worth (Equity) = (Debt + Net worth) x 2/3
= 90,00,000 x 2/3 = ₹ 60,00,000

(vii) Long term Debt = Net worth / 2 = 60,00,000 / 2 = ₹ 30,00,000

(viii) Cash and Bank Balance = Liquid Assets - Debtors = 14,00,000 - 12,50,000 = ₹ 1,50,000.

2014 - Dec [3] Answer the question:

(c) (i) The following information is given to you:

Gross Profit	₹ 1,08,000
Shareholders' funds	₹ 6,00,000
Gross Profit Margin	25%
Ratio- Credit Sales to total sales	80%
Ratio - Total Turnover to Total Assets	0.3 times
Ratio-Closing Inventory to Total Sales	1/5 times
Average debtors	20 days
Current ratio	1.5
Ratio-Long Term Debt to equity	80%
(Use 360 days per year for calculations)	

Find the following:
(a) Fixed Assets turnover ratio
(b) Cash/Bank Balances
(c) Current Liabilities
(d) Closing Inventory
(e) Debtors
(f) Cash Sales **(8 marks)**

Answer:

(a) Fixed assets turnover ratio $= \frac{\text{Net Sales}}{\text{Net fixed Assets}}$

$= \frac{4,32,000}{5,40,000} = 0.8$

(b) Cash & bank balance = ₹ 7,94,400
(c) Current liabilities = ₹ 6,00,000
(d) Closing inventory = ₹ 86,400
(e) Debtors = ₹ 19,200
(f) Cash sales = ₹ 86,400

Workings:

Gross profit ₹ 1,08,000

Gross profit margin 25%

(i) Sales = $\frac{1,08,000}{25\%}$ = ₹ 4,32,000

(ii) Credit Sales = 80% x 4,32,000 = ₹ 3,45,600

(iii) Total Assets = $\frac{\text{Sales}}{\text{Total Assets}}$ = 0.3

$\frac{4,32,000}{\text{Total Assets}}$ = 0.3

Total Assets = ₹ 14,40,000

(iv) $\frac{\text{Closing inventory}}{\text{Total Assets}}$ = 1/5

$\frac{\text{Closing inventory}}{4,32,000}$ = 1/5

Closing inventory = ₹ 86,400

(v) Debtors = Credit sales x 20/360

= 3,45,600 x 20/360

= ₹ 19,200

(vi) Creditors:

Long term debt = $\frac{\text{long term debt}}{\text{Equity}}$ = 40%

Long term debt = 40% x 6,00,000

= ₹ 2,40,000

Creditors = 14,40,000 – 6,00,000 – 2,40,000 = ₹ 6,00,000

(vii) Current ratio = $\frac{\text{Current Assets}}{\text{Current libilities}}$ =1.5

$\frac{\text{debtors + inventory + cash}}{\text{creditors}}$ = 1.5

$\frac{19,200 + 86,400 + \text{cash}}{6,00,000}$ =1.5

Cash = ₹ 7,94,400

(vii) Fixed assets = Total assets – Current assets

= 14,40,000 – 9,00,000 = ₹ 5,40,000

2015 - June [I] (f) Determine which company is more profitable

	A. Ltd.	**B. Ltd.**
Net profit ratio	5%	8%
Turnover ratio	6 times	3 times

(2 marks)

Answer:

Turnover Ratio = $\frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}}$

Let the sales be x :

A Ltd.	B Ltd.
$\frac{6}{100} = \frac{6}{x} \times \frac{x}{100}$	$\frac{3}{100} = \frac{3}{x} \times \frac{x}{100}$
$\frac{\text{Net Income}}{\text{Sales}} = 5$	$\frac{\text{Net Income}}{\text{Sales}} = 8$
$\frac{6}{x} = \frac{5}{100}$	$\frac{3}{x} = \frac{8}{100}$
x = 120	x = 37.5

Sales of A Ltd. are 120 while sales of B Ltd. are 37.5, profit margin is higher for B Ltd. hence, B Ltd. is performing better but return on capital employed is better for A Ltd. than B Ltd., because it uses capital more efficiently. A Ltd. has better operating performance than B Ltd.

Hence, A Ltd. is more profitable.

2015 - June [III] (a) (i) The following information is available as on 31.3.2015:

Current Ratio	2.7 : 1
Current Liabilities to Net worth	20%
Total Debts to Net worth	39%
Fixed Assets to Net worth	85%
Sales to Net worth	2.4 times
Inventory to Current Assets	1 : 3
Average Collection Period	1 month
Working Capital	₹ 5,10,000

Calculate the following as on 31.3.2015:

(A) Fixed Assets
(B) Inventory
(C) Debtors
(D) Cash and Bank Balance (combined figure)
(E) Net worth
(F) Long Term Debts
(G) Current Liabilities
(H) Total Assets **(8 marks)**

Answer:

- $\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.7$

Working Capital = Current Assets – Current Liabilities = 5,10,000
2.7 × Current Liabilities – Current Liabilities = 5,10,000
1.7 × Current Liabilities = 5,10,000
Current Liabilities = $\frac{5,10,000}{1.7}$ = ₹ 3,00,000
Current Assets = 2.7× Current Liability
= 2.7× 3,00,000
Current Assets = ₹ 8,10,000

- Current Liabilities to Net Worth = 20%

$\frac{\text{Current Liabilities}}{\text{Net worth}} = 20\%$

$\frac{3,00,000}{\text{Net worth}} = 20\%$

Net Worth = ₹ 15,00,000

- $\frac{\text{Fixed assets}}{\text{Net worth}} = 85\%$

Fixed Assets = 15,00,000 × 85% = ₹ 12,75,000

- Inventory To Current Assets = 1:3

$\frac{\text{Inventory}}{\text{Current assets}} = 1:3$

Inventory = 8,10,000/3 = ₹ 2,70,000

- Total Debts To Net Worth = 39%

$\frac{\text{Total Debt}}{15,00,000} = 2.7$

Total Debts = 15,00,000 × 39% = ₹ 5,85,000

- Sales To Net Worth = 2.4 Times

$\frac{\text{Sales}}{15,00,000} = 2.4$

Sales = 15,00,000 × 2.4 = ₹ 36,00,000
Average Collection Period = 1 Month
Average Collection Period = $\frac{\text{Debtors} \times 12}{\text{Sales}}$

$1 = \frac{\text{Debtors} \times 12}{36,00,000}$

Debtors = ₹ 3,00,000
Cash and Bank Balance = Current Assets - Debtors - Inventory
= 8,10,000 - 3,00,000 - 2,70,000
= ₹ 2,40,000
Long Term Debt = Total Debt - Current Liability
= 5,85,000 - 3,00,000
Long Term Debt = ₹ 2,85,000
Total Assets = Fixed Assets + Current Assets
= 12,75,000 + 8,10,000
= ₹ 20,85,000

(A) Fixed Assets = ₹ 12,75,000
(B) Inventory = ₹ 2,70,000
(C) Debtors = ₹ 3,00,000
(D) Cash and bank balance = ₹ 2,40,000
(E) Net Worth = ₹ 15,00,000
(F) Long term debts = ₹ 2,85,000
(G) Current Liabilities = ₹ 3,00,000
(H) Total Assets = ₹ 20,85,000

2015 - Dec [I] (b) If current ratio is 2.4 : 1 and working capital is ₹ 25,20,000, find the amount of current assets and current liabilities. **(2 marks)**

Answer:

Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{2.4}{1}$

Working Capital = Current Assets - Current Liabilities
= ₹ 25,20,000

CA = 2.4 CL

	CA - CL	= ₹ 25,20,000
Or	2.4 CL - CL	= ₹ 25,20,000
	1.4 CL	= ₹ 25,20,000
	CL	= ₹ 18,00,000
	∴ CA	= ₹ 18,00,000 × 2.4
		= ₹ 43,20,000

2015 - Dec [III] (a) (1) The following accounting information and financial ratios of Bhalu Ltd. relate to the year ended 31st March, 2015:

Inventory Turnover Ratio (considering cost of goods sold)	6 times
Creditors Turnover Ratio	10 times
Debtors Turnover Ratio	12 times
Current Ratio	2.4
Gross Profit Ratio	25%

Total sales ₹ 60 lakhs; cash sales 25% of credit sales; cash purchases ₹ 4,60,000; working capital ₹ 7,14,000; closing inventory is ₹ 1,60,000 more than opening inventory.

Your are required to calculate:

(i) Average Inventory
(ii) Purchases
(iii) Average Debtors
(iv) Average Creditors
(v) Average Payment Period
(vi) Average Collection Period
(vii) Current Assets
(viii) Current Liabilities **(8 marks)**

(b) (1) The following balances are provided by M Ltd. for the years ended 31st March, 2014 and 2015:

Particulars	31.03.2014 ₹	31.03.2015 ₹
General Reserve	2,40,000	2,90,000
Profit & Loss A/c	4,20,000	6,00,000

11% Debentures	10,00,000	6,00,000
Goodwill	2,00,000	1,60,000
Land & Building	14,00,000	13,00,000
Plant & Machinery	12,00,000	13,20,000
Investment (Non trading)	4,80,000	4,40,000
Creditors	3,70,000	4,30,000
Provision for tax	1,60,000	2,10,000
Proposed Dividend	2,72,000	2,88,000
Stock	8,00,000	7,70,000
Debtors	5,76,000	8,30,000
Cash at Bank	1,76,000	1,86,000
Prepaid Expenses	30,000	22,000

Additional Information:

1. Investment were sold during the year for ₹ 70,000.
2. During the year an old machine costing ₹ 1,60,000 was sold for ₹ 72,000. Its written down value was ₹ 90,000.
3. Depreciation was charged on plant and machinery @ 20% on the opening balance.
4. There was no purchase or sale of land and building during the year.
5. Provision for tax made during the year was ₹ 1,92,000.
6. During the year premium on redemption of debentures written-off was ₹ 40,000.

You are required to prepare a statement showing the net cash flow from operating activities. **(8 marks)**

Answer:

(a)1.(i) **Computation of Average Inventory:**

Gross Profit = 25% of ₹ 60,00,000 = ₹ 15,00,000

Cost of Goods Sold (COGS) = ₹ 60,00,000 - ₹ 15,00,000 = ₹ 45,00,000

Inventory Turnover Ratio = COGS/Average Inventory

₹ 45,00,000/Average Inventory = 6

Average Inventory = ₹ 7,50,000

(ii) **Computation of Purchases:**
Purchases = COGS + Increase in Inventory = ₹ 45,00,000 + ₹ 1,60,000 = ₹ 46,60,000

(iii) **Computation of Average Debtors:**
Let credit sales be ₹ 100 then cash sales = 25% of 100 = ₹ 25, and total sales = ₹ 125
When total sales is ₹ 60 lakhs then credit sales = ₹ 60,00,000 × 100/125 = ₹ 48,00,000 and cash sales = ₹ 12,00,000
Debtors Turnover = Net Credit Sales/Average Debtors = 12
Average Debtors = ₹ 48,00,000 /12 = ₹ 4,00,000

(iv) **Computation of Average Creditors:**
Credit Purchase = Purchases ₹ 46,60,000 – Cash purchase ₹ 4,60,000 = ₹ 42,00,000
Creditors Turnover = Credit Purchases/Average Creditors
Average Creditors = ₹ 42,00,000/10 = ₹ 4,20,000

(v) **Computation of Average Payment Period:**
Average Payment Period = Average Creditors × 365/Credit Purchase
= ₹ 4,20,000 × 365/ ₹ 42,00,000 = 36.5 days
Or 365/Creditors Turnover = 365/10 = 36.5 days

(vi) **Computation of Average Collection Period:**
Average Collection Period = Average Debtors × 365/Net Credit Sales
= ₹ 4,00,000 × 365/ ₹ 48,00,000 = 30.417 days
Or 365/Debtors Turnover = 365/12 = 30.417 days

(vii + viii) **Computation of Current Assets and Current Liabilities:**
Current Ratio = Current Assets / Current Liabilities = 2.4
Let Current Liabilities be 'a' then Current Assets will be '2.4a' and Working Capital = 2.4a -a = 1.4a
If working capital is ₹ 7,14,000
Then Current Liabilities = ₹ 7,14,000 /1.4 = ₹ 5,10,000
Current Assets = ₹ 5,10,000 × 2.4 = ₹ 12,24,000

(b) (1) **Statement Showing Net cash flow from Operating Activities for the year ended 31st March, 2015 of M Ltd.**

Particulars	₹	₹
Profit & Loss A/c as on 31.03.2015		6,00,000
Less: Profit & Loss A/c as on 31.03.2014		4,20,000
		1,80,000
Add: Transfer to General Reserve (₹ 2,90,000 – 2,40,000)	50,000	
Provision for tax	1,92,000	
Proposed Dividend	2,88,000	5,30,000
Profit before tax		7,10,000
Adjustment for Depreciation:		
Land & Building	1,00,000	
Plant & Machinery	2,40,000	3,40,000
Profit on sale of Investment (₹ 70,000 - ₹ 40,000) **WN-2**		(30,000)
Loss on sale of Plant & Machinery		18,000
Goodwill written-off (₹ 2,00,000 – 1,60,000)		40,000
Premium on redemption of debentures written-off		40,000
Operating Profit before Working Capital Changes		11,18,000
W. C. Changes: Decrease in Prepaid Expenses		8,000
Decrease in Stock		30,000
Increase in Debtors		(2,54,000)
Increase in Creditors		60,000
Cash generated from Operations		9,62,000
Income Tax paid **WN-1**		(1,42,000)
Net Cash Inflow from Operating Activities		8,20,000

Working Notes:

Dr. Provision for Tax Account Cr.

Particulars	₹	Particulars	₹
To Bank A/c (Balancing figure)	1,42,000	By Balance b/d	1,60,000
To Balance c/d	2,10,000	By Profit & Loss A/c	1,92,000
	3,52,000		**3,52,000**

Dr. Investment Account Cr.

Particulars	₹	Particulars	₹
To Balance b/d	4,80,000	By Bank A/c (sale)	70,000
To Profit & Loss A/c (profit)	30,000	By Balance c/d	4,40,000
	5,10,000		**5,10,000**

2016 - June [6] (a) The following information is given to you as on 31-03-2016 for a company:

Current Ratio	2.5
Liquid Ratio	1.5
Fixed Assets (net)	1,80,000
Working Capital	60,000
Reserves and Surplus	40,000
Bank Overdraft (Short term)	10,000
Assume that there is no long term loan or fictitious assets	

Make a statement of proprietary fund and match it with fixed assets and as many details of current assets net of current liabilities. **(8 marks)**

Answer:

Current Assets/Current Liabilities = 2.5; Current Assets - Current Liabilities = ₹ 60,000

∴ 1.5 Current Liabilities = ₹ 60,000

∴ Current Liabilities = ₹ 60,000/1.5 = ₹ 40,000

Current Assets = ₹ 60,000 + Current Liabilities or, ₹ (60,000 + 40,000) = ₹ 1,00,000

Bank Overdraft is not excluded from Current Liabilities as it is stated to be "short term"

Liquid Ratio (Quick Ratio) = (Current Assets - Stock)/Current Liabilities = 1.5

or, ₹ 1,00,000 - Stock = ₹ 1.5 × 40,000 (= ₹ 60,000)

∴ Stock = ₹ 40,000

Current Assets ₹ 1,00,000 - Stock ₹ 40,000 = Debtors and Cash ₹ 60,000

Share Capital = ₹ 2,00,000

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital	2,00,000	Fixed Assets	1,80,000
Reserves	40,000	**Current Assets:**	
Current Liabilities	40,000	Stock	40,000
		Cash and Debtors	60,000
Total	**2,80,000**	**Total**	**2,80,000**

2016 - Dec [6] (b) The following parameters are furnished relating to a firm as on a certain date:

Stock Turnover Ratio	6 times
Debtors	2 months (Sales value)
Gross Profit to Sales ratio	20%
Capital	1,00,000
Reserves and Surplus	20,000
Creditors Turnover ratio	5 times
Fixed Assets Turnover ratio	5 times
Closing Stock is ₹ 5,000 more in value than the opening stock and closing creditors were equal to the opening value. The Gross Profit during the period was ₹ 60,000 and there were no cash sales or purchases.	

Prepare the Balance Sheet as at that date giving the break-up of as many items as possible. **(5 marks)**

Answer:

Statement of Proprietary fund

Particulars	Amount (₹)	Amount (₹)
Capital	1,00,000	
Add: Reserves and surplus	20,000	1,20,000

Alternative Method:		
Fixed Assets		60,000
Current Assets:		
Cash	16,500	
Stock	42,500	
Debtors	50,000	
	1,09,000	
Less: Current Liabilities		
Creditors	49,000	60,000
Proprietor's Fund		1,20,000

Note: Balance Sheet may also be prepared where by total of Share Capital and Reserves and Surplus may be shown as Proprietary Fund.

Working Notes:

Rate of Gross Profit = 20%

Amount of Gross Profit ₹ 60,000

Sales = $\frac{60,000}{20} \times 100$ = ₹ 3,00,000

Cost of goods sold 3,00,000 – 60,000 = ₹ 2,40,000

Stock velocity = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

6 = $\frac{2,40,000}{\text{Average Stock}}$; Average stock = $\frac{2,40,000}{6}$

Average Stock = ₹ 40,000

Opening Stock + Closing Stock = 40,000 × 2 = ₹ 80,000

Closing Stock = $\frac{80,000 + 5,000}{2}$ = ₹ 42,500

Opening Stock = 80,000 – 42,500 = ₹ 37,500

Fixed assets turnover ratio (5) = $\frac{3,00,000}{\text{Fixed Assets}}$

Fixed assets = $\frac{3,00,000}{5}$; Fixed assets = ₹ 60,000

Debtor's turnover ratio = $\frac{12}{2}$ = 6 times

Average Debtors = $\frac{3,00,000}{6}$ = ₹ 50,000

Here average Debtors is assumed to be debtors.

Therefore, debtors = ₹ 50,000

Creditor's turnover ratio = $\frac{\text{Credit Purchase}}{\text{Average Creditors}}$

5 = $\frac{2,45,000}{\text{Average Creditors}}$; Creditors = ₹ 49,000

Purchases = Cost of goods sold + Closing stock – Opening stock
= 2,40,000 + 42,500 – 37,500 = ₹ 2,45,000

Cash in hand = Total Liabilities – Assets
= (1,00,000 + 20,000 + 49,000) – (60,000 +50,000 + 42,500)
= ₹ 16,500.

2017 - June [7] (a) From the following information, prepare a summarized Statement of Assets and Liabilities as on 31st March, 2017:

(i)	Working Capital	₹ 1,20,000
(ii)	Reserves & Surplus	₹ 80,000
(iii)	Bank Overdraft	₹ 20,000
(iv)	Proprietary Ratio	0.75
(v)	Current Ratio	2.50
(vi)	Liquid Ratio	1.50

Your workings should form a part of your answer. **(8 marks)**

Answer:

(i) WC = CA - CL= 1,20,000

$\frac{CA}{CL}$ = 2.5 ⇒ CA = 2.5 CL

2.5CL - CL = 1,20,000

1.5CL = 1,20,000

CL = 80,000

CA = 2,00,000

(ii) Liquid Ratio = $\frac{LA}{LL} = \frac{\text{CA - Inventory}}{\text{CL - Bank Overdraft}}$ = 1.50

$\frac{2,00,000 - \text{Inventory}}{80,000 - 20,000}$ = 1.50

2,00,000 - Inventory = 90,000

Inventory = 1,10,000

(iii) Proprietary Ratio = (Fixed Assets/ Proprietary Funds) = 0.75
i.e., Working capital/ Proprietary Funds = 0.25
Proprietary Funds = (1/0.25) × 1,20,000 = ₹ 4,80,000
Less: Reserves & Surplus = ₹ 80,000
Share Capital = ₹ 4,00,000

(iv) Fixed Assets = 4,80,000 × 0.75 = ₹ 3,60,000.

2017 - June [7] (b) From the following Summarised Statement of Assets and Liabilities of XYZ Ltd., prepare a Statement of Changes in the Working Capital.

	31st March			31st March	
LIABILITIES	**2015 (₹)**	**2016 (₹)**	**ASSETS**	**2015 (₹)**	**2016 (₹)**
Equity Share Capital	3,00,000	4,00,000	Goodwill	1,15,000	90,000
8% Preference Share Capital	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
Profit & Loss Account	30,000	48,000	Plant & Machinery	80,000	2,00,000
General Reserve	40,000	70,000	Debtors	1,60,000	2,00,000
Proposed Dividend	42,000	50,000	Stock	77,000	1,09,000
Creditors	55,000	83,000	Bills Receivable	20,000	30,000
Bills Payable	20,000	16,000	Cash in hand	15,000	10,000
Provision for Taxation	40,000	50,000	Cash at Bank	10,000	8,000
	6,77,000	8,17,000		6,77,000	8,17,000

Following additional information are available:

(i) Depreciation of ₹ 10,000 and ₹ 20,000 have been charged on Plant & Machinery and Land & Buildings respectively in 2016.
(ii) Interim dividend of ₹ 20,000 has been paid in 2016.
(iii) Income tax of ₹ 35,000 has been paid in 2016. **(4 marks)**

Answer:

Calculation of changes in Working Capital:

Current Asset	**2015**	**2016**
Debtors	1,60,000	2,00,000
Stock	77,000	1,09,000
B/R	20,000	30,000
Cash in hand	15,000	10,000
Cash at Bank	10,000	8,000
A: Total Current Assets	**2,82,000**	**3,57,000**
Current Liabilities	**2015**	**2016**
Creditors	55,000	83,000
B/P	20,000	16,000
B: Total Current Liabilities	75,000	99,000
Working Capital (A-B)	2,07,000	2,58,000

Increase in working capital = ₹ 2,58,000 – ₹ 2,07,000 = ₹ 51,000.

2017 - Dec [7] (a) From the following information prepare a statement of Proprietors' Funds:

(i) Current Ratio = 2.5 : 1
(ii) Fixed Assets/Proprietors Funds = 0.75
(iii) Liquid Ratio = 1.5 : 1
(iv) Bank Overdraft = ₹ 10,000
(v) Reserves and Surplus = ₹ 80,000
(vi) Working Capital = ₹ 1,20,000 **(4 marks)**

Answer:

If Working Capital = CA – CL = 1,20,000 and CA = 2.5 CL, then 2.5 CL – CL = 1,20,000
Therefore CL = 80,000 and CA = 2,00,000
Liquid Ratio = Quick Assets/CL = 1.5

Therefore Quick Assets = CL × 1.5 = 1,20,000
Since Quick Assets = CA – Stock, then Stock = CA – QA = 80,000
If Proprietors Funds are P then Fixed Assets = 0.75P
Proprietors Funds + CL = FA + CA
Or P + 80,000 = 0.75P + 2,00,000
Or 0.25 P = 1,20,000 or P = 4,80,000,
FA = 4,80,000 + 80,000 – 2,00,000 = 3,60,000
Since Proprietory Funds are = Sh. Capital – Reserves, therefore Sh. Capital = 4,00,000

Statement of Proprietors Fund

Proprietors Fund	₹	₹
Share Capital	4,00,000	
Reserves and Surplus	80,000	4,80,000
Investment of Funds		
Fixed Assets	3,60,000	
Stock	80,000	
Other Current Assets	1,20,000	
Less: Current Liabilities	80,000	4,80,000

2017 - Dec [7] (b) Prepare a schedule of Changes in Working Capital and a Fund Flow Statement from the following information relating to XYZ Co. Ltd. (Amount in ₹)

Liabilities	**31.03.2016**	**31.03.2017**	**Assets**	**31.03.2016**	**31.03.2017**
Equity Share Capital	2,00,000	3,00,000	Land	2,00,000	2,00,000
Share Premium	—	10,000	Plant at cost	2,08,000	2,00,000
General Reserve	1,00,000	1,20,000	Furniture at cost	14,000	18,000
Profit and Loss Account	20,000	34,000	Investments	1,20,000	1,60,000
6% Debentures	1,40,000	1,00,000	Debtors	60,000	1,40,000
Provision for Depreciation on Furniture	10,000	12,000	Stock	1,20,000	1,30,000
Provision for Depreciation on Plant	1,00,000	1,12,000	Cash	60,000	90,000
Provision for Taxation	40,000	60,000			
Sundry Creditors	1,72,000	1,90,000			
	7,82,000	9,38,000		7,82,000	9,38,000

A plant purchased for ₹ 8,000 (Depreciation 4,000) was sold on cash for ₹ 1,600 in October 2016. In July 2016, a piece of furniture was purchased for ₹ 4,000 and a dividend of 22.5% was paid to Equity Shareholders.

(8 marks)

Answer:
Increase in working Capital ₹ 82,000
Fund Flow Statement Total ₹ 2,11,000
Funds from Operations ₹ 99,400
Schedule of Changes in Working Capital :

Current Asset	**31.03.2016** (₹)	**31.03.2017** (₹)
Debtors	60,000	1,40,000
Stock	1,20,000	1,30,000
Cash	60,000	90,000
Total CA	2,40,000	3,60,000
Current liabilities		
Provision for Tax	40,000	60,000
S. Creditor	1,72,000	1,90,000
Total CL	2,12,000	2,50,000
Working Capital (CA – CL)	28,000	1,10,000
Increase in Working Capital		₹ 82,000

Fund Flow Statement

Sources	₹	Application	₹
Fund from operations	99,400	Investment purchased	40,000
Sale proceed of plant	1,600	Increase in Working capital	82,000
Issue of Equity Share capital with premium	1,10,000	Dividend paid	45,000
		Furniture purchase	4,000
		Redemption of Debentures	40,000
	2,11,000		2,11,000

Working Notes:

Calculation of depreciation during the year

Provision for depreciation on Plant

	₹
Opening Balance	1,00,000
Less: Dep. On plant sold	4,000
	96,000
Dep. During the year	16,000
Dep. Year end	1,12,000
Total depreciation during the year	
On plant	16,000
On fumiture (12,000 – 10,000)	2,000
Total	18,000

Investment A/c

Particulars	₹	Particulars	₹
To bal. b/d	1,20,000	By bal. c/f	1,60,000
To bank - purchases (bal. Fig)	40,000		
	1,60,000		1,60,000

P & L A/c

Particulars	₹	Particulars	₹
To Dep.	18,000	By balance	20,000

To transfer to G/R	20,000	By Fund from operations	99,400
To loss on sale of plant	2,400		
To dividend	45,000		
To balance	34,000		
	1,19,400		1,19,400

It is assumed that dividend is paid on original shares only.

2018 - June [7] (a) The following is the summary of Financial Ratios and form of a TEXTILE COMPANY having a sale of ₹ 32 lakh.

Sales to net worth (times)	2.3
Current debt to net worth (%)	42
Total debt to net worth (%)	75
Current ratio (times)	2.9
Net sales to inventory (times)	4.7
Fixed assets to net worth (%)	53.2

Proforma Balance Sheet

Net worth	.....	Fixed assets	.....
Long-term debt	.....	Cash	.....
Current debt	.....	Stoke	.....
		Sundry debtors	568889
	.....		.....

You are **required to complete** the Proforma Balance sheet. **(6 marks)**

Answer:

Proforma Balance Sheet of the Textile Company as on .....

Liabilities	Amount ₹	Assets	Amount ₹
Net Worth	13,91,304	Fixed Assets	7,40,173
Long-Term debt	4,59,130	Cash	4,44,869

Current debt	5,84,348	Stock	6,80,851
		Sundry Debtors	5,68,889
	24,34,782		24,34,782

Working Notes:

1. Net worth = ₹ 32,00,000 ÷ 2.3 = ₹ 13,91,304
2. Current debt = (₹ 13,91,304/100) × 42 = ₹ 5,84,348
3. Total debt = (₹ 13,91,304/100)×75 = ₹ 10,43,478
4. Long-term debt = ₹ 10,43,478 – ₹ 5,84,348 = ₹ 4,59,130
5. Fixed assets = (₹ 13,91,304/1,000) × 532 = ₹ 7,40,173
6. Current assets = ₹ 5,84,348 × 2.9 = ₹ 16,94,609
7. Inventory = ₹ 32,00,000 ÷ 4.7 = ₹ 6,80,851
8. Cash = ₹ 16,94,609 – (₹ 6,80,851 + ₹ 5,68,889) = ₹ 4,44869

2018 - June [7] (b) INDOGROWTH Ltd. provides the followings data:

Comparative trial balance.

	March 31,2018	42824	Increase (decrease)
Debit Balance			
Working capital	₹ 2,00,000	₹1,00,000	₹ 1,00,000
Investments	1,00,000	1,50,000	-50,000
Building and Equipment	5,00,000	4,00,000	1,00,000
Land	40,000	50,000	-10,000
	8,40,000	7,00,000	1,40,000
Credit Balance			
Accumulated Depreciation	2,00,000	1,60,000	40,000
Bonds	1,00,000	50,000	50,000
Reserves	3,40,000	3,40,000	-
Equity Shares	2,00,000	1,50,000	50,000
	8,40,000	7,00,000	1,40,000

Income statement for the period ending March 31, 2018

Sales		₹ 10,00,000
Cost of goods sold		5,00,000
		50,000
Selling expenses	₹ 50,000	
Administrative expenses	50,000	1,00,000
Operating income		4,00,000
Other charges and credit:		
Gain on sale of building and equipment	₹ 5,000	
Loss on sale of investments	(10,000)	
Interest	(6,000)	
Taxes	(1,89,000)	(2,00,000)
		2,00,000

Net income after taxes

Notes: (i) The depreciation charged for the year ended March's, 2018 was ₹ 60,000.

(ii) The book value of the building and equipment disposed off was ₹ 10,000

(iii) Land was sold at no profit no loss basis.

Required:

Prepare a Funds Flow Statement for the period ending March 31, 2018. **(4 marks)**

Answer:

Fund Flow Statement of INDO Growth Ltd. for the period ending March 31, 2018:

Funds from business operations:	₹	₹
Net Income after taxes	2,00,000	
Add: Deprecation	60,000	
Interest	6,000	
Loss on sale of investments	10,000	

Less: Gain on sale of building and equipment	(5,000)	2,71,000
Issuance of long-term liabilities:		
Equity Shares	50,000	
Bonds	50,000	1,00,000
Sale of Non-current assets:		
Investments (₹ 50,000 - ₹ 10,000)	40,000	
Land (₹ 50,000- ₹ 40,000)	10,000	
Building and equipment (₹ 10,000 + ₹ 5,000)	15,000	65,000
		4,36,000

Application of Funds:

Purchase of non-current assets:	₹	₹
Building and equipment		1,30,000
Recurring payment to investors:		
Interest on bond	6,000	
Dividend to equity shareholders	2,00,000	2,06,000
Net increase in working capital (sources - uses)		1,00,000
Total		4,36,000

Working Notes:

1. Accumulated Depreciation Account:

Particulars	Amount (₹)	Particulars	Amount (₹)
To Building and equipment Depreciation on sales of building and equipment)	20,000	By Balance c/d	1,60,000
To Balance c/d	2,00,000	By P&L A/c (depreciation of the year 2018	60,000
	2,20,000		2,20,000

2. Building and Equipment Account :

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	4,00,000	By Cash	15,000
To P&L A/c	5,000	By Accumulated depreciation	20,000
To Cash (Purchase)	1,30,000	By Balance c/d	5,00,000
	5,35,000		5,35,000

3. Reserves Account:

Particulars	Amount (₹)	Particulars	Amount (₹)
To Dividends Paid (Bal. Fig.)	2,00,000	By Balance c/d	3,40,000
To Balance c/d	3,40,000	By Profit of the year 2018	2,00,000
	5,40,000		5,40,000

2018 - Dec [7] (a) Complete the Balance Sheet in the table below for TANISH Ltd. using the following financial data:

(i) Total Debt to Net Wroth = 1 : 2
(ii) Total Assets Turnover = 2
(iii) Gross Profit on Sales = 30%
(iv) Average Collection Period (Assume 360 days in a year) = 40 days
(v) Inventory Turnover Ratio on Cost of Goods Sold and year-end inventory = 3
(vi) Acid Test Ratio = 0.75

Balance Sheet as on 31st March, 2018			
Liabilities	₹	**Assets**	₹
Equity Share Capital	4,00,000	Plant & Machinery & Other Fixed Assets	—
Reserves and Surplus	6,00,000		

Total Debt:		Current Assets:	
Current Liabilities	—	Inventory	—
		Debtors	—
		Cash	—
Total	—	Total	—

Assume that there is no Bank OD in this Balance Sheet Format. **(6 marks)**

Answer:

Working Notes and Calculations:

1. Net worth = Equity Share Capital + Reserves + Surplus
   = ₹ 4,00,000 + ₹ 6,00,000 = ₹ 10,00,000
2. Total Debt/Net worth = ½ or Total Debt/ ₹10,00,000 = ½ or Total Debt = ₹ 10,00,000/2 = ₹ 5,00,000
3. Total of Balance Sheet (on Liabilities) = ₹ 15,00,000 (after updating Working Note 2) Therefore, Total Assets = ₹ 15,00,000
4. Total Assets Turn – over = Turn – over/Total Assets = Turnover / ₹ 15,00,000 = 2 Or turnover (i.e. Sales) = ₹ 15,00,000 × 2 = ₹ 30,00,000
5. Cost of Goods Sold (COGS) = Sales less Gross Profit = ₹ 30,00,000 less 30% thereon = ₹ 21,00,000
6. Debtors = Sales × (40/360) = ₹ 30,00,000 × (40/360) = ₹ 3,33,333
7. COGS/Closing Inventory = ₹ 21,00,000/Closing Inventory = 3 times ∴ ∴ Closing Inventory = ₹ 21,00,000/3 = ₹ 7,00,000
8. Acid Test Ratio = Quick Assets/Quick Liabilities = (debtors + Cash)/Current Liability = (₹ 3,33,333 + Cash)/ ₹ 5,00,000 = 0.75 ∴Cash = ₹ 41,667

Since there is no Bank OD in the Balance Sheet format, Quick Liabilities = Current Liabilities

Balance Sheet as on 31st March, 2018			
Liabilities	₹	**Assets**	₹
Equity Share Capital	4,00,000	Plant & Machinery & other Fixed Assets	4,25,000
Reserves and Surplus	6,00,000		

Total Debt:		Current Assets:	
Current Liabilities	5,00,000	Inventory	7,00,000
		Debtors	3,33,333
		Cash	41,667
Total	15,00,000	**Total**	15,00,000

2018 - Dec [7] (b) VEDIKA LTD. gives you the following information for the year ended 31st March, 2018:

(i) Sales for the year totalled ₹ 96,00,000. The company sells goods for cash only.

(ii) Cost of goods sold was 60% of sales. Closing inventory was higher than opening inventory by ₹ 20,000.

(iii) Tax paid amounted to ₹ 7,00,000. Other expenses total-led ₹ 21,45,000. Outstanding expenses on 31st March, 2017 and 31st March, 2018 totalled ₹ 82,000 and ₹ 91,000 respectively.

(iv) New machinery and furniture costing ₹ 10,50,000 in all were purchased. One equipment was sold for ₹ 20,000.

(v) A right issue was made of 50,000 shares of ₹ 10 each at a premium of ₹ 3 per share. The entire money was received with application.

(vi) Dividends total-ling ₹ 4,00,000 were distri-buted among the share-holders.

(vii) Cash in hand and at Bank as at 31st March, 2017 and 31st March, 2018 totalled ₹ 2,10,000 and ₹ 4,14,000 respectively.

You are required to prepare cash flow statement as per CAS-3 for the year ended 31st March, 2018 using the Direct method. **(6 marks)**

Answer:

VEDIKA LTD.

Cash Flow Statement for the year ended 31st March, 2018

(Under Direct Method) **(Amount in ₹ Lakh)**

	₹	₹
Cash flow from operating activities:		
Cash receipts from customers	96	
Cash paid to suppliers and employees	-79.16	
Cash inflow from operation	16.84	
Tax paid	-7	
Net cash from Operating Activities		9.84
Cash flow from investing activities:		
Purchase of Fixed Assets	-10.5	
Proceeds from sale of Equipment	0.2	
Net cash from Investing Activities		-10.3
Cash Flow from Financing Activities:		
Proceeds from issue of share capital	6.5	
Dividend paid	-4	
Net Cash from Financing Activities		2.5
		2.04
Net increase in Cash and Cash equivalents:		
Cash and cash equivalents as at 31st March, 2017		2.1
Cash and cash equivalents as at 31st March, 2018		4.14
(Closing balance)		

Working Notes:

(i) Calculation of cash paid to suppliers and employees:

	(₹ in lakh)
Cost of sales, 60% of ₹ 96.00 lakh	57.6
Add: Expenses incurred	21.45
Outstanding expenses on 31.03.17	0.82
Excess of closing inventory over opening inventory	0.2
	80.07
Less: Outstanding expenses on 31.03.2018	0.91
	79.16

(ii) Proceeds from issue of share Capital:

Issue price of one share = ₹ 10 + ₹ 3 = ₹ 13

Proceeds from issue of 50,000 shares = ₹ 50,000 × 13 = ₹ 6.50 lakh

2019 - June [7] (a) The Balance Sheet of VASUDHA LTD. as on March 31, 2019 is as given below:

(Amount in ₹ lakhs)

Equity and Liabilities	Amount	Assets	Amount
Equity Share Capital	250	Fixed Assets	400
General Reserve	280	Investment	50
Profit & Loss a/c (Current year)	30	Stock	460
Secured Loans—Long Term	300	Debtors	460
Secured Loans—Short Term	3,60,15	Cash and cash	10
Creditors	0	equivalents	
Other Liabilities	30	Miscellaneous Expenditure (not Written off)	20
	1,400		1,400

Additional informations:

(i) From the P&L A/c, ₹ 90 Lakhs was transferred to General Reserve during the year
(ii) Interest Cost amounted to ₹ 120 lakhs
(iii) Taxation @ 40%

You are required to **calculate**

(i) Current Ratio
(ii) Debt-Equity Ratio **(6 marks)**

Answer:

(i) Current Ratio = Current Assets/Current Liabilities
= ₹ 930 lakhs / ₹ 540 lakhs
= ₹ 1.72

(ii) Debt-Equity Ratio = Debt/Equity
= ₹ 300 lakhs / ₹ 560 lakhs
= ₹ 0.54

Working Notes :

Current Assets:

Stock	=	₹ 460 lakhs
Debtors	=	₹ 460 lakhs
Cash and Cash Equivalent	=	₹ 10 lakhs
	=	₹ 930 lakhs

Current Liabilities:

Short term loans	=	₹ 360 lakhs
Trade Creditors	=	₹ 150 lakhs
Other Liabilities	=	₹ 30 lakhs
		₹ 540 lakhs

Debt:

Term loan = ₹ 300 lakhs

Equity :

Capital	=	₹ 250 lakhs
Reserves	=	₹ 280 lakhs
P & L A/c	=	₹ 30 lakhs
		₹ 560 lakhs

Alternatively, Debt-Equity Ratio may be calculated as under:
Debt-Equity Ratio = ₹ 300 lakhs/ ₹ 540 lakhs = 0.56

Debt:

Term Loan = ₹ 300 lakhs

Equity

Capital	₹ 250 lakhs
Reserves	₹ 280 lakhs
P & L A/c	₹ 30 lakhs
	₹ 560 lakhs
Less: Misc. Exp.	₹ 20 lakhs
	₹ 540 lakhs

2019 - June [7] (b) The following are the financial statement of KODIAC LTD. for the year ended March 31.

Balance Sheet as on March 31, (Amount in ₹ Thousand)

	2019	2018		2019	2018
Equity & Liabilities			Assets		
Share Capital	5,000	5,000	Fixed Assets	10,500	8,500
Profit & Loss A/c	5,000	4,250	Stock	3,000	3,400
Long-term Loan	5,500	5,000	Debtors	3,450	3,800
Creditors	1,800	1,750	Cash and cash equivalents	350	300
	17,300	16,000		17,300	16,000

Income Statement for the year ended 31.3.2019.
(Amount in ₹ Thousand)

Sales		21,500
Less:	Cost of sales	(14,700)
		6,800

Less:	Operating Expenses:	
	Administrative Expenses	(2,400)
	Depreciation	(1,000)
		34,00,250
Add:	Dividend Received	3,650
Less:	Interest Paid	(700)
		2,950
Less:	Income Tax	(1,300)
Profit after tax		1650

KODIAC Ltd. paid dividend of ₹ 9,00,000 during the year ended 31.3.2019.

Required:

Prepare a Cash Flow Statement of Kodiac Ltd. As per AS-3 (Revised) for the year ended March 31, 2019 using Indirect Method. **(6 marks)**

Answer:

Cash Flow Statement of KODIAC Ltd., for the year ended March 31, 2019 (Indirect Method)

(₹ In Thousand)

		₹
A.	**Cash Flow from Operating Activities:**	
	Profit before Tax (PBT) and extra ordinary items:	2,950
	Add: Depreciation	1,000
	Interest paid	700
	Less: Dividend received (non-operation)	(250)
	Operating Profit	4,400
	Add: Decrease in stock	400
	Decrease in debtors	350
	Increase in creditors	50
		5,200
	Less: Tax paid	(1,300)
	Total cash provided by operating activities	3,900

B.	**Cash Flow from Investing Activities:**		
	Purchase of Fixed assets (10,500+1,000-8,500)		(3,000)
	Dividend received on investments		250
	Cash used in investing activities		(2,750)
C.	**Cash Flow from Financing Activities;**		
	Long-term Loan taken	500	
	Interest paid	(700)	
	Dividend paid	(900)	
	Net cash outflow from financing activities		(1,100)
	Net increase in cash during the year (A+B+C)		50
	Add: Cash and Cash equivalents on 31.03.2018		300
	Cash and cash equivalents on 31.03.2019		350

2019 - Dec [7] (a) With the help of the following information, complete the Balance Sheet of MENWOOD LTD. as at 31st March, 2019.

Equity share capital	₹1,00,000
The relevant ratios of the company are as follows:	
Current debt to total debt	0.40
Total debt to owner's equity (Equity Shares Capital)	0.60
Fixed assets to owner's equity (Equity Shares Capital)	0.60
Total assets turnover	2 Times
Inventory turnover	8 Times

(6 marks)

Answer:

Balance Sheet As at 31st March, 2019

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital	1,00,000	Fixed Assets	60,000
Current debt	24,000	Cash	60,000
Long-Term Debt	36,000	Inventory	40,000
	1,60,000		**1,60,000**

Working Notes:

1. Total debt = 0.60 × Equity Shares = 0.60 × ₹1,00,000 = ₹60,000
   Current debt to total debt = 0.40, hence current debt = 0.40 × ₹60,000 = ₹24,000
2. Fixed assets = 0.60 × Equity Shares = 0.60 × ₹1,00,000 = ₹60,000
3. Total Liabilities = Total debt + Equity Shares Capital = ₹60,000 + ₹1,00,000 = ₹1,60,000
   (Assets = Liabilities + Equity Share Capital).
   Since fixed assets are ₹60,000, hence, current assets should be ₹1,00,000.
4. Total assets to turnover = 2 times: inventory turnover = 8 times
   Hence, inventory/total assets = 2/8 =1/4,
   Total assets = ₹1,60,000
   Therefore, inventory = ₹1,60,000/4 = ₹40,000,
   Balance on Asset side is Cash = ₹1,00,000 – ₹40,000 = ₹60,000

2019 - Dec [7] (b) SHELLICOLA (IND) LTD. has furnished the following information for the year ended 31st March, 2019.

	(₹in lakhs)
Net profit	35,500.00
Dividend (including interim dividend paid)	10,000.00
Provision for Income Tax	7,500.00
Income Tax paid during the year	6,300.00
Loss on sale of assets (net)	60.000
Book value of assets sold	250.00
Depreciation charged to P&L Account	30,000.00
Profit on Sale of investments	150.00
Value of investments sold	40,650.00
Interest expenses (due during the year)	15,000.00
Interest paid during the year	15,780.00
Increase in working capital (excluding cash and bank balance)	84,100.00

Purchase of fixed assets	840.00
Opening cash and bank balances	1,032.50
Closing cash and bank balances	12,912,.50

You are required to prepare the cash flow statement in accordance with AS 3 (Revised) ended March 31,2019. **(6 marks)**

Answer:

Shellicola Ltd:

Cash follow statement for the year ended March 31, 2019

(a)	**Cash Flows from Operating Activities:**	**(₹) in Lakhs**
	Net Profit before taxation (35,500 + 7,500)	43,000
	Adjustment for:	
	Depreciation charged to P&L A/c	30,000
	Loss on sale of assets (net)	60
	Profit on sale of investments	(150)
	Interest expenses	15,000
	Operating profit before working capital changes	87,910
	Increase in working capital (excluding cash & bank balance)	(84,100)
	Cash generated from operations	3,810
	Less: Income tax paid	(6,300)
	Net cash used in operating activities (A)	**(2,490)**
(b)	**Cash Flows from Investing Activities:**	
	Sale of assets (250 – 60)	190
	Sale of investment (40,650 + 150)	40,800
	Purchase of fixed assets	(840)
	Net cash used in investing activities (B)	**40,150**

(c)	**Cash Flows from Financing Activities:**	
	Interest paid	(15,780)
	Dividend paid (incl. interim dividend)	(10,000)
	Net cash from financing activities (C)	**(25,780)**
	Net increase in cash and cash equivalent (A + B + C)	11,880
	Cash and cash equivalents at the beginning of the year	1,032
	Cash and cash equivalents at the end of the year	**12,912**

2021 - Dec [1] The following financial parameters and Balance Sheet of BXA Ltd for the year ended 31.3.2021 are given :

The Total Assets Turnover	2 times
Inventory turnover Ratio based on Cost of Goods sold and year end inventory	4 times
Gross Profit on Sales	25%
Average Collection Period (Assume 360 days in a year)	45 days
Total Debt to Networth	0.04375
Quick Ratio	1.5

Balance Sheet as on March 31, 2021

Equity & Liabilities	₹	**Assets**	₹
Equity Share Capital	4,00,000	Properties, Plants and equipments	—
Other Equity	8,00,000	Current Assets :	
		Inventory	—
Total Debt :		Debtors	—
Current Liabilities	—	Cash and cash equivalents	2,00,000

Based on the above information you are required to answer the following questions :

(i) What is the value of Current Liabilities ? **(2 marks)**

(ii) What is the value of Properties, Plants and equipments (PPE) ? **(1 mark)**

(iii) What is the value of Inventory ? **(2 marks)**

(v) The value of Debtors will be _____. **(1 mark) [Sec. C Four LAQ]**

Answer :

$\frac{\text{Total Debt}}{\text{Net Worth}} = 1 : 3 = \frac{1}{3}$

$\text{Total Debt} = \frac{\text{Net Worth}}{3} = \frac{4,00,000 + 8,00,000}{3} = 4,00,000$

∵ Current Liabilities = 4,00,000

$\frac{\text{Sales}}{\text{Total Assets}} = 2$ or Sales = 2 × 16,00,000 = 32,00,000

As Total Assets = Total Liabilities = 16,00,000

$\frac{\text{GP}}{\text{Sales}} = 25\%$ or GP = 32,00,000 × 25% = 8,00,000

COGS = 32,00,000 – 8,00,000 = 24,00,000

$\frac{\text{GOGS}}{\text{Inventry}} = 4$ or $\text{Inventory} = \frac{24,00,000}{4} = 6,00,000$

$\text{Av. Collection Period} = \frac{\text{Debtors}}{\text{Sales}} \times 360 = 45$

$\Rightarrow \text{Debtors} = \frac{45 \times 32,00,000}{360} = 4,00,000$

PPE = Total Assets – Inventory – Debtors – Cash

PPE = 16,00,000 – 6,00,000 – 4,00,000 – 2,00,000

= 4,00,000

(i) Current Liabilities = ₹ 4,00,000.

(ii) Value of Properties, Plants and Equipments (PPE) = ₹ 4,00,000.

(iii) Value of Inventory = ₹ 6,00,000.

(iv) Value of Debtors = ₹ 4,00,000.

2021 - Dec [1] XBA LTD. has furnished the following information for the year ended 31st March,2021.

	(₹ In Lakhs)
Net Profit	305
Dividend (including interim dividend) paid	95
Provision for Income Tax	75
Income Tax paid during the year	60
Loss on sale of assets (net)	2
Book value of assets sold	10
Depreciation charged to P&L Account	250
Loss on Sale of investments	3
Value of investments sold	306
Interest paid during the year	145
Increase in working Capital (excluding cash and cash equivalents)	505
Purchase of fixed Assets	18
Investment in Joint venture	105
Opening cash and cash equivalents	12
Closing cash and cash equivalents	30

Based on the above information you are required to answer the following questions in accordance with AS-3 (Revised) :

(i) What is the value of the Net Cash Flow from Operating Activities ?
(3 marks)

(ii) Net Cash Flow from Investing Activities is _____.
(2 marks)

(iii) What is the value of Net Cash flow from Financing Activities ?
(1 mark) [Sec. C Five LAQ]

Answer:

(i) Net Cash Flows from Operating Activities: = 305 + 75 - 60 + 2 + 250 + 3 - 505 = 70 lakh

(ii) Net Cash flows from investing Activities = 8 + 303 - 18 - 105 = 188 lakh

(iii) Net Cash Flows from Financing Activities = (95) + (145) = (240) lakh

Net Cash Flow from Operating Activities

Operating activities include the primary revenue-generating activities of the company. Here's the calculation:

Start with Net Profit: 305 lakhs

Add: Provision for Income Tax: 75 lakhs

Less: Income Tax paid during the year: -60 lakhs

Add: back Loss on sale of assets: 2 lakhs

Add: Depreciation charged to P&L Account: 250 lakhs

Add: back Loss on Sale of investments: 3 lakhs

Less: Increase in working capital: -505 lakhs

Net Cash Flow from Operating Activities: 305 + 75 - 60 + 2 + 250 + 3 - 505 = 70 lakhs

Net Cash Flow from Investing Activities

Investing activities include the purchase and sale of long-term investments and assets. Here's the calculation:

Proceeds from sale of investments: 306 lakhs – 3 lakhs = 303 lakhs

Add: Proceeds from sale of assets: 10 – 2 = 8 lakhs

Less: Purchase of fixed assets: -18 lakhs

Less: Investment in Joint venture: -105 lakhs

Net Cash Flow from Investing Activities: 303 + 8 - 18 - 105 = 188 lakhs

Net Cash Flow from Financing Activities

Financing activities include transactions that affect the equity and borrowings of the company. Here's the calculation:

Less: Dividend paid: -95 lakhs

Less: Interest paid during the year: - 145 lakhs

Net Cash Flow from Financing Activities: - 95 - 145 = -240 lakhs

2022 - Dec [7] (b) VRP provides you with the following information:

Operating Profit (before tax) Ratio	50%
Capital Turnover Ratio	2 times
15% Debt-Shareholders' Funds Ratio	2:1
Capital Gearing Ratio	3:1
18% Preference Share Capital	?
Tax Rate	30%

Calculate Return on Equity Shareholders' Funds. **(6 marks)**

Answer:

Deriving Key Financial Metrics

- Sales and Operating Profit (EBIT):
  - Capital Turnover Ratio = Sales / Capital Employed = 2 times
  - Assume Capital Employed = 100 (for simplicity)
  - Thus, Sales = 2 * 100 = 200
  - Operating Profit Ratio = EBIT / Sales = 50%
  - EBIT (Operating Profit) = 0.50 * 200 = 100
- Debt and Equity:
  - Debt-Shareholders' Funds Ratio = 2:1
  - Let Shareholders' Funds = 100 (for simplicity)
  - Debt = 2 * 100 = 200
- Capital Employed:
  - Capital Employed = Shareholders' Funds + Debt = 100 + 200 = 300
- Capital Gearing Ratio:
  - Capital Gearing Ratio = Debt / Equity = 3:1
  - Equity (assuming no Preference Share Capital) = 100

Calculate Net Profit

EBIT (Operating Profit): 100
Interest on Debt: Debt is 200 at 15% = 0.15 * 200 = 30
EBT (Earnings Before Tax): EBIT - Interest = 100 - 30 = 70
Tax: 30% of EBT = 0.30 * 70 = 21
Net Profit: EBT - Tax = 70 - 21 = 49

Calculate Return on Equity (ROE)

ROE = Net Profit / Equity
- Net Profit = 49
- Equity = 20 (as derived from Capital Gearing Ratio and Shareholders' Funds)

ROE = Net Profit / Equity = 49 / 20 = 2.45 or 245%
Return on Equity Shareholders' Funds = 2.45 or 245%.

2023 - June [3] (a) (i) Current Ratio 8:5, Quick Ratio 6:5, Inventory Velocity 4 months, Gross Profit @$33\frac{1}{3}$% on Cost was ₹ 10,00,000, Inventory at the end was 3 times more than that in the beginning. Calculate Working Capital Turnover Ratio. **(3 marks)**

Answer:

Gross Profit (given) =10,00,000 i.e. $33\frac{1}{3}$% at cost

Cost of Goods Sold = $\frac{10,00,000}{1} \times 3 = 30,00,000$

Sales = 30,00,000 +10,00,000 = 40,00,000

Inventory Velocity 4 = $\frac{\text{Average stock}}{30,00,000} \times 12 = 10,00,000$

Average Stock = $\frac{\text{Op.Stock} + \text{CL.Stock}}{2}$

$10,00,000 = \frac{x + 3x}{2}$

x = 5,00,000
Closing Stock = 5,00,000 x 3 =15,00,000
Working Capital Turnover Ratio = Sales \Working Capital
Working Capital = Current Assets-Current Liabilities
Quick Ratio = Current Assets-Stock/Current Liabilities & 6:5 (given)
Current Ratio = Current Assets/Current Liabilities & 8:5 (given)

$\frac{8}{5} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Assets = $\frac{8 \text{ Current Liabilities}}{5}$

Replacing the values in the formula of quick ratio

$$\frac{6}{5} = \frac{\left(\frac{8CL}{5}\right) - 15,00,000}{\text{Current Liabilities}}$$

Therefore: 6 Current Liabilities $= 5 \times \frac{8CL - 75,00,000}{5}$

6 CL = 8Cl -75,00,000

CL = 37,50,000

$CA = \frac{8 \times 37,50,000}{5}$

CA = 60,00,000

Working Capital = ₹ 60,00,000 -₹ 37,50,000 = ₹ 22,50,000

$$\text{Working Capital Turnover Ratio} = \frac{\text{Sales}}{\text{working capital}}$$

$$= \frac{40,00,000}{22,50,000} = 1.77 \text{ times}$$

2023 - June [3] (a) (ii) 10% Debt-Equity Ratio 2:1, Net Profit (after Tax) Ratio 16.8%, Operating Profit Ratio 30%. Operating Expenses Ratio 10%, Inventory Velocity 1 month, Tax Rate 30%, Land & Building ₹ 6,75,000, Plant & Machinery ₹6,00,000, Capital Work-in-Progress ₹ 3,00,000. Inventory (including Raw Materials ₹15,000, Work-in-Progress ₹ 20,000 and Stores and Spares ₹ 5,000) ₹ 1,40,000. Trade Receivables ₹ 2,20,000, Provision for doubtful debts ₹ 20,000. Credit Sales are ₹ 2,00,000 more than Cash Sales. Calculate Interest Coverage Ratio, Trade Receivables Turnover Ratio and Return on Investment. **(1 + 1 + 1 = 3 marks)**

Answer:

Interest Coverage Ratio = 5 times

Trade Receivables Turnover Ratio = 5 times

Return on Investment = 0.40 or 40%.

2023 - June [3] (b) From the following relevant extracts of the Balance Sheets of Oreo Ltd., calculate Cash Flow from Financing Activities to be disclosed in the Cash Flow Statement as per AS-3 issued by ICAI.

Particulars	31/03/2023 (in ₹)	31/03/2022 (in ₹)
Equity Share Capital (Shares of ₹ 10 each)	10,55,000	6,00,000
5% Pref. Share Capital (Shares of ₹ 100 each)	2,00,000	4,00,000
General Reserve	1,40,000	4,40,000
Profit and Loss A/c	6,42,000	(13,000)
Securities Premium	52,500	20,000
Capital Redemption Reserve	–	1,50,000
Non-Current Liabilities(12% Debentures)	2,75,000	1,50,000
Current Liabilities:		
Outstanding Interest on Debentures	10,000	–
Outstanding Underwriting Commission	5,000	–
Unclaimed Dividend on Equity Shares	20,000	–
Non-Current Assets (Machine)	30,000	–

Additional Information:

(i) On 1st April 2022, Dividends (including an Equity Dividend @ 35%) were paid.

(ii) On 1st May 2022, 20,000 Equity Shares of ₹ 10 each were issued to the public @ ₹ 15 to redeem Pref. Shares at a 5% premium.

(iii) On 1st October 2022, 1,000 Pref. Shares of ₹ 100 each were issued to the public @ ₹ 150 to buy back 15,000 equity shares @ ₹ 15. On the same date, 50% of Debentures were redeemed at a 10% premium by converting into Equity Shares of ₹ 10 each @ ₹ 15 each and some New Debentures of ₹ 100 each were issued to the public.

(iv) Underwriters were entitled to Commission on all public issues of securities at a maximum rate as per The Companies Act, 2013.

(v) On 31st March 2023, a Machine costing ₹ 30,000 was purchased by the issue of Equity Shares of ₹ 10 each at a premium of 20%.

(9 marks)

Answer:

Net Cash flow from Financing Activities = ₹ (1,38,000).

2023 - Dec [3] (a) M Ltd. provides you the following information:

Current Ratio	2.5
Liquid Ratio	1.5
Proprietary Ratio (Fixed Assets/Proprietors' Funds)	0.75
Working Capital	₹ 60,000
Reserves and Surplus	₹ 40,000
Bank Overdraft	₹ 10,000

There is no long-term loan or fictitious assets. Similarly, there is no prepaid expenses and bank overdraft. Calculate Current Assets, Current Liabilities and value of Stock. **(7 marks)**

Answer:

1. Current Ratio = $\frac{\text{Current Asset}}{\text{Current Liabilities}}$ = 2.5 times

So, Current Assets = 2.5 current liabilities

2. Working Capital = C.A - C.L

So, 60,000 = 2.5 CL - CL

60,000 = 1.5 C.L

$C.L = \frac{60,000}{1.5}$ = ₹ 40,000

Current Assets = 40,000 × 2.5

= ₹1,00,000

3. Liquid Ratio = $\frac{\text{Quick Asset i.e (C.A - Stock)}}{\text{Quick Liabilities (C.L)}}$

Note:

Bank Overdraft is not excluded from Current Liabilities as it is stated to be "short term"

Liquid Ratio (Quick Ratio) = (Current Assets - Stock)/Current Liabilities = 1.5

or, ₹ 1,00,000 - Stock = ₹ 1.5 × 40,000 (= ₹ 60,000)

∴ Stock = ₹ 40,000

2023 - Dec [3] (b) The following information is provided by K Ltd. regarding its Retained earnings:

Particulars	₹	₹
Balance of retained earnings, 1st April, 2022		3,25,600
Add: Net Profit after taxes		6,48,480
Tax Refund		25,470
		9,99,550
Less: Loss on Sale of Plant and Machinery	14,460	
Goodwill written off	95,370	
Dividends paid	4,70,350	
		5,80,180
Balance of retained earnings, 31st March, 2023		4,19,370

Additional information:

(i) Plant and machinery having a written down value of ₹ 54,360 was sold in October, 2022.

(ii) Depreciation of ₹ 68,250 has been deducted while arriving at net profit for the year.

(iii) Plant and machinery were purchased during the year at a cost of ₹ 1,60,000 but the payment was made in the form of 8% Debentures of ₹ 100 each for the same.

(iv) ₹ 72,800 debentures have been redeemed during 2022.

Prepare a Statement of Sources and Application of Funds for the year ended 31st March, 2023. **(7 marks)**

Answer:

Statement of Sources and Application of Funds
For the year ended 31st March, 2023

Sources	₹	Applications	₹
Sale of Plant & Machinery	39,900	Redemption of Debentures	72,800
Refund of Tax	25,470	Payment of Dividend	4,70,350

Funds from Operation	7,16,730	Net increase in Working Capital	2,38,950
	7,82,100		7,82,100

2023 - Dec [4] (a) Prepare a Common Size Income Statement from the following figures extracted from the Statement of Profit and Loss of XYZ Ltd. and offer your comments on its profitability position.

Particulars	2021-22 (₹)	2022-23 (₹)
Net Sales	5,25,000	6,75,000
Less: Cost of Goods sold	2,85,000	3,22,500
Gross profit	2,40,000	3,52,500
Less: Operating Expenses	75,000	1,08,000
Operating profit	1,65,000	2,44,500
Less: Interest on debentures	30,000	25,500
Profit before Tax	1,35,000	2,19,000

(7 marks)

Answer:

Common size statement for the year ended 31st March, 2022 & 2023.

Particulars		2022	2023
	Net Sales	100%	100%
Less:	Cost of goods sold: $\left(\frac{\text{Cost of goods sold}}{\text{Net Sales}} \times 100\right)$	54.3%	47.8%
	Gross Profit $\left(\frac{\text{G. P.}}{\text{Net Sales}} \times 100\right)$	45.7%	52.2%
Less:	Operating expenses: $\left(\frac{\text{Operating expenses}}{\text{Net Sales}} \times 100\right)$	14.3%	16%
	Operating profit: $\left(\frac{\text{Operating profit}}{\text{Net Sales}} \times 100\right)$	31.4%	36.2%
Less:	Interest on debentures: $\left(\frac{\text{Interest}}{\text{Net Sales}} \times 100\right)$	5.7%	3.8%
	Profit Before Tax: $\left(\frac{\text{PBT}}{\text{Net Sales}} \times 100\right)$	25.7%	32.4%

Comment: (1) The Profit Before Tax to Net Sales has increased from 25.7% in the year 2021-22 to 32.4% in the year 2022-23 . It shows that the profit earning capacity of the company has improved. It is due to significant reduction in the cost of goods solds of the company.
(2) Interest on debenture reduced. It implies that the financial burden of the company has reduced.

2024 - June [3] (a) The following ratio and information relate to the business of ABC Ltd.:
Credit period allowed to Debtors = 2 months;
Inventories Turnover ratio = 8 times;
Lag in payment to suppliers = 1 month;
Gross Profit ratio 25%;
Opening inventories = ₹ 1,05,000; and
Gross Profit for the year ended 31st March, 2024 amounted to ₹ 3,00,000.
Assume that all purchases and sales are on credit and closing values of debtors and creditors are not different from their opening values.
Calculate (a) Sales; (b) Sundry Debtors; (c) Closing Inventories; and (d) Sundry Creditors. **(7 marks)**

Answer:

1. Gross Profit Ratio = $\frac{\text{G.P.}}{\text{Sales}} \times 100$

$$25 = \frac{3,00,000}{\text{Sales}} \times 100$$

Sales = ₹ 12,00,000

2. Average collection period $= \frac{\text{Average Debtors}}{\text{Credit Sales}} \times 12$

$$2 = \frac{\text{Average Debtor}}{12,00,000} \times 12$$

S. Debtor /Avg. Debtor = ₹ 2,00,000

3. Cost of Good Sold (COGS) = Sales -G.D.
   = 12,00,000 - 3,00,000
   = ₹ 9,00,000

4. Inventory Turnover Ratio $= \frac{\text{COGS}}{\text{Average Inventory}}$

$$8 = \frac{9,00,000}{\text{Average Inventory}}$$

Avg. Inventory = ₹ 1,12,500

$$\text{Avg. Inventory} = \frac{\text{OP. Inventory + Cl. Inventory}}{2}$$

$$1,12,500 = \frac{1,05,000 + \text{Cl. Inventory}}{2}$$

Closing Inventory = ₹ 1,20,000

5. Credit Payment Period $= \frac{\text{Avg. Creditor}}{\text{Creditor Purchase}} \times 12$

$$1 = \frac{\text{Avg. - Creditor}}{9,15,000} \times 12$$

S. Creditors / Avg. Creditor = ₹ 76,250

COGS = Opening Inventory + Purchases - Closing Inventory
9,00,000 = 1,05,000 + Purchases - 1,20,000
Purchase = ₹ 9,15,000

So,

(a) Sales = ₹ 12,00,000
(b) Sundry Debtors = ₹ 2,00,000
(c) Closing Inventory = ₹ 1,20,000
(d) Sundry Creditors = ₹ 76,250

2024 - June [3] (b) The following information has been provided by B Ltd. for the year ended on 31.03.2024.

(i) Sales for the year ₹ 96,00,000 entirely made in cash.
(ii) Cost of goods sold was 75% of the sales.
(iii) Trade payables on 31.03.2024 was ₹ 2,00,000 more than the balance on 31.03.2023.
(iv) Closing inventory was higher than the opening inventory by ₹ 1,00,000.
(v) Suppliers were paid ₹ 71,00,000 during the year.
(vi) Operating expense of ₹ 7,20,000 were paid during the year.
(vii) Taxes paid during the year were ₹ 3,00,000.
(viii) The company paid equity dividend of ₹ 2,40,000 during the year.
(ix) The company acquired a land for ₹ 8,00,000 and bought a new machinery for ₹4,00,000 during the year.
(x) Interest was received on investment for ₹ 20,000.
(xi) Cash and cash equivalent on 1.04.2023 was ₹ 80,000.
(xii) Cash and cash equivalent on 31.03.2024 was ₹ 1,40,000.

You are required to prepare a Cash Flow Statement for the year ended on 31.03.2024 as per AS 3. **(7 marks)**

Answer:

Cash Flow Statement for the year ended on 31.03.2024

Particulars	₹	₹
I. Cash flow from operating activities:		
Sales (all in cash)	96,00,000	
Less: Payment to suppliers	71,00,000	
	25,00,000	
Less: Operating expenses	7,20,000	
Cash generated from operation	17,80,000	
Less: Taxes paid	3,00,000	14,80,000
II. Cash flow from investing activities:		
Purchase of land	(8,00,000)	
Purchase of Machinery	(4,00,000)	
Interest received on investment	20,000	(11,80,000)

III. Cash flow from financing activities:		
Equity Dividend paid	(2,40,000)	(2,40,000)
Net increase in cash and cash equivalent		60,000
Add: Opening cash and cash equivalent		80,000
Closing cash and cash equivalent		1,40,000

2024 - June [4] (a) The income statement of X Ltd. for the year ending on 31.03.2023 and 31.03.2024 are given below. Prepare a Comparative Income Statement for the year ended on 31.03.2023 and 31.03.2024. (Figures in '000)

Particulars	2022-23 ₹	2023-24 ₹
Net Sales	1,890	2,500
Cost of Goods Sold	1,240	1,570
Operating Expenses:		
Office, Administrative and Selling expenses	270	314
Non-operating Expenses:		
Interest on Loan	50	70
Income Tax	110	120

(7 marks)

Answer:

Comparative Income Statement for the year ended on 31.03.2023 and 31.03.2024

Particulars	2022-23 ₹ ('000)	2023-24 ₹ ('000)	Absolute Change ₹ ('000)	Percentage Change (%)
Net Sales	1,890	2,500	610	32.28
Less: Cost of Goods Sold	1,240	1,570	330	26.61
Gross Profit	650	930	280	43.07
Less: Operating Expenses:				
O&A and Selling expenses	270	314	44	16.30
Operating Profit	380	616	236	62.10

Less: Non-operating Expenses:				
Interest on Loan	50	70	20	40.00
PBT	330	546	216	65.45
Less: Income Tax	110	120	10	9.09
PAT	220	426	206	93.64

2024 - Dec [3] (a) The following information is available about Boxa Company:

Accounts payable	₹ 100 lakhs
Accounts receivable	₹ 50.48 lakhs
Average inventory	₹ 300 lakhs
Buildings and land	?
Cash	₹ 50 lakhs
Cost of goods sold	₹ 800 lakhs
EBIT	₹ 180 lakhs
Long-term bonds	₹ 250 lakhs with 10% interest rate
Price per share	₹ 72
Price/Earnings ratio	18
Shareholders' equity	?
Total assets	₹ 1,000 lakhs
Total sales	₹ 1,250 lakhs
Cash sales	₹ 100 lakhs

You are required to calculate the following:

(i) Days sales outstanding
(ii) Interest coverage ratio
(iii) Debt ratio
(iv) Inventory turnover ratio
(v) Earnings per share **(7 marks)**

2024 - Dec [3] (b) A firm wants to know whether it belongs to the non-bankrupt class of firms. Certain figures are extracted from the financial statements of the firm. You are required to use Altman's Z score model and place the firm in the appropriate class.

- Sales: ₹ 20,00,000
- EBIT: ₹ 10,00,000
- Total Assets: ₹ 40,00,000
- Book Value of Total Liabilities: ₹ 16,00,000
- Retained Earnings: ₹ 24,00,000
- Market Value of Equity: ₹ 80,00,000
- Working Capital: ₹ 8,00,000 **(7 marks)**

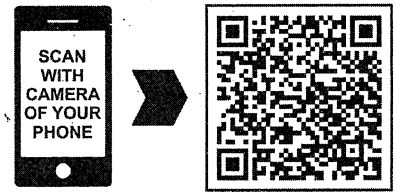
2024 - Dec [4] (a) Prepare a Common-size Income Statement from the following income statements and interpret the same.

Income Statement

Particulars	**31st March 2023** ₹	**31st March 2024** ₹
Gross Sales	10,30,000	12,42,000
Less: Sales Returns	30,000	42,000
Net Sales	10,00,000	12,00,000
Less: Cost of Goods Sold	6,00,000	6,60,000
Gross Profit	4,00,000	5,40,000
Less: Operating Expenses:		
Administrative Expenses	85,000	1,14,000
Selling Expenses	2,00,000	1,93,200
Total Operating Expenses	2,85,000	3,07,200
Income from Operations	1,15,000	2,32,800

Add: Non-operating Income	24,000	34,200
Total Income	1,39,000	2,67,000
Less: Non-operating Expenses	36,000	53,280
Net Profit	1,03,000	2,13,720

(7 marks)



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Motivational Thoughts
- Quote: "Numbers don't lie, but they require a sharp mind to reveal their truth."
- Thought: Financial analysis is the key to unlocking a business's potential and making informed decisions.

Checklist for Understanding
- Basics of financial analysis and its importance.
- Tools:
- Comparative Statements
- Common-Size Statements
- Trend Analysis
- Ratio Analysis
- Cash Flow and Fund Flow Analysis
- Applications of financial analysis in decision-making.

Fun Facts
- The first known use of financial ratios dates back to the 18th century in Italy.
- Ratio analysis was initially used to evaluate businesses in the silk trade.

Last-Minute Analysis
- Comparative Statements: Show changes in financial data over two or more periods.
- Common-Size Statements: Express items as a percentage of a base figure (e.g., sales).
- Trend Analysis: Spot patterns over time.
- Ratio Analysis:
- Liquidity Ratios
- Profitability Ratios
- Solvency Ratios
- Cash Flow Analysis: Focuses on cash inflows and outflows.

Fun Flow
- Show the process of financial analysis: Raw Data (Financial Statements) - Tools (Analysis) - Insights - Decision Making

Smart Study Tips
- Focus on understanding formulas and their interpretations.
- Practice by applying tools to real-world financial statements.
- Use charts and graphs to visualize trends.

Quick Study Tips
- Memorize key ratios with mnemonics (e.g., CARL: Current Ratio, Acid-Test Ratio, Return on Investment, Liquidity Ratio).
- Solve one practical question daily for each tool.

Practical Analysis
- Analyze the financial performance of a company (e.g., profitability and liquidity) using ratio analysis.
- Conduct trend analysis for a well-known company over five years.

Real-World Experience
- Example: How Apple Inc. uses financial analysis to maintain profitability.
- Case: Role of financial analysis in evaluating start-ups for venture capital funding.

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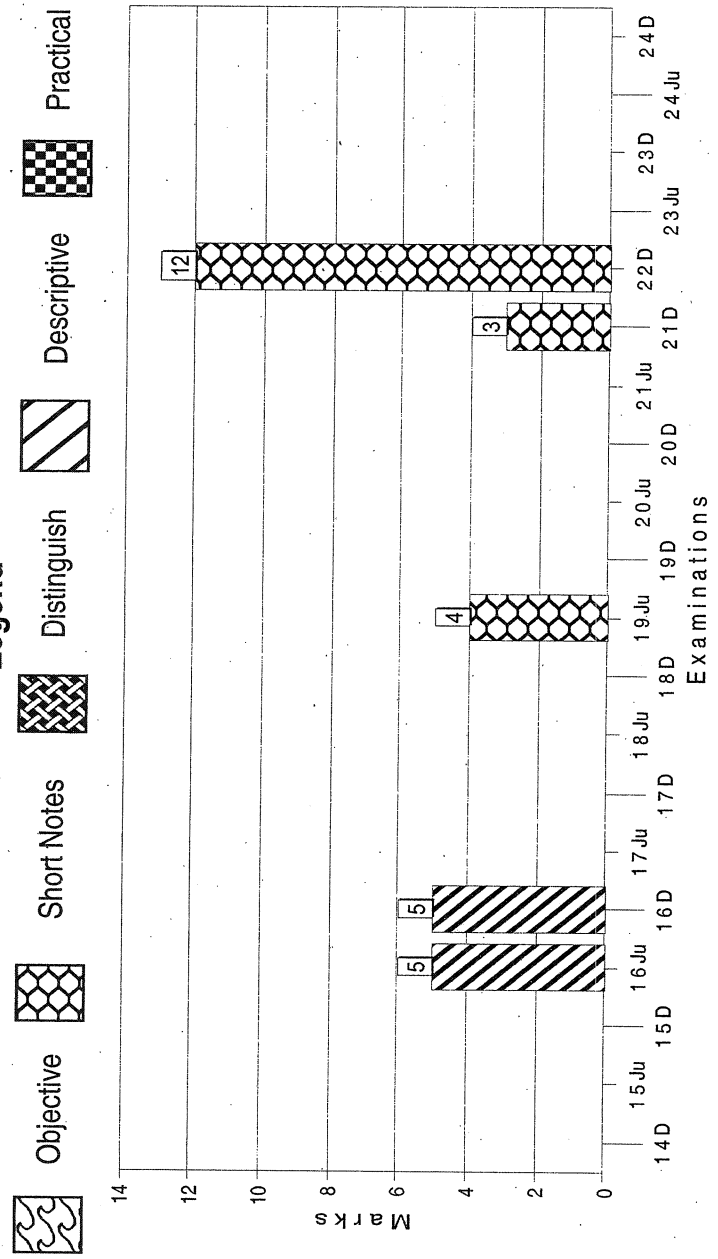
- Example: How Apple Inc. uses financial analysis to maintain profitability.
- Case: Role of financial analysis in evaluating start-ups for venture capital funding.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions



CHAPTER	SOURCES OF FINANCE AND COST OF CAPITAL
4A	**Source of Finance**

THIS CHAPTER INCLUDES

1. Long Term and Short Term Sources of Finance
2. Financing a Start-up - Alternative Investment Funds and Crowd Funding
3. International Sources of Finance

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2013 - Dec [9] (b) Answer the following:

(ii) Write a short note on Foreign Currency Convertible Bonds (FCCBs) **(4 marks)**

Answer:

Foreign Currency Convertible Bonds (FCCBs):

Foreign currency convertible bonds (FCCBs) are a type of convertible bonds that are issued in currency other than the domestic currency of the issuing company. FCCB's are issued by corporates for raising funds in foreign currency. With all the inherent features of convertible bonds, FCCBs emerge as a good bet for both the issuers and investors. The FCCBs are unsecured; carry a fixed rate of interest and an option for conversion into a fixed number of equity, shares of the issuer company. Interest and redemption is payable in dollars price only if conversion option is not exercised. Interest rates are very low by Indian domestic standards. FCCBs are denominated in any freely convertible foreign currency.

FCCBs with a maturity term of 3-7 years provide an option to the bondholders to either redeem their investments or convert FCCBs into equities at or before maturity term at pre-determined price. Consequently, FCCBs entitle an investor for coupon rate payments with an additional option of conversion of bonds into equities.

Salient features of FCCBs:

1. FCCBs carry comparably lower interest rates in comparison to regular bonds. Low interest is partly on account of the inherent option available to investors for conversion of FCCBs into equities.
2. Issuance of FCCBs does not require any collateral or security.
3. FCCBs are a low-cost source of borrowing for corporates.
4. Funds raised through issuance of FCCBs meet various expansion plans and capital expenditure requirement of corporates.

2014 - June [7] (b) Write a short note on Global Depository Receipt. **(4 marks)**

Answer:

Global Depositary Receipts

It is a negotiable certificate which represents Non US company publically traded local currency equity shares. It is a dollar denominated instrument of a company traded in Stock Exchange outside the country of origin. It represents certain no. of equity denominated in rupees. Equity shares are registered in the name of an intermediary abroad called Overseas Depositary Bank. The share certificates are delivered to another intermediary called Domestic Custodian Bank. The issuer does not assume any exchange collected by way of issue proceeds. GDRs are freely transferable outside India. There is arbitrage possibility in GDR issue. There is a two way fungibility i.e. GDR can be converted into shares and *vice versa.* GDRs are also issued with warrant attached to them. Warrants give the investors an option to get it converted into share to equity at a later date.

Voting rights

1. A holder of depository receipts may become a member of the company and shall be entitled to vote as such only on conversion of the depository receipts into underlying shares after following the procedure provided in the Scheme and the provisions of this Act.

2. Until the conversion of depository receipts, the overseas depository shall be entitled to vote on behalf of the holders of depository receipts in accordance with the provisions of the agreement entered into between the depository, holders of depository receipts and the company in this regard.

2019 - June [10] Write short notes of the following:

(a) Lease Financing **(4 marks)**

Answer:

Lease Financing: Lease Financing is an arrangement that provides a firm with the use and control over assets without buying and owning the same. It is a form of renting assets. It is a contract between the owner of asset (lessor) and the user of the asset called the lessee, whereby the lessor gives the right to use the asset to the lease over an agreed period of time for a consideration called the lease rental. The contract is regulated by the terms and conditions of the agreement. The lessee pays the lease rent periodically to the lessor as regular fixed payments over a period of time.

There are two basic kinds of leases. They are :

(i) Operating or Service Lease
(ii) Financial Lease

An Operating Lease is a short term lease with the lease period being less than the useful life of asset. Such a lease is cancellable at a short notice by the lessee. Such a leasing is common to the equipments which require expert technical staff for maintenance and are exposed to technological developments e.g., computers, vehicles, data processing equipments etc.

A financial Lease ensures the lessor for amortization of the entire cost of investment plus the expected return on capital outlay during the terms of the lease. Such a lease is usually for a longer period and non-cancellable. These leases are commonly used for leasing land, building, machinery, fixed equipments etc.

2021 - Dec [5] Write Short Notes on Forfeiting **(3 marks) [Sec. C Six LAQ]**

Answer :

Forfeiting:

Forfeiting refers to the exporter relinquishing his right to a receivable due at a future date in exchange for immediate cash payment, at an agreed

discount, passing all risks and responsibilities for collecting the debt to the forfeiter. It is the discounting of international trade receivable on a 100% "Without Recourse" basis. Forfeiting transforms the supplier"s credit granted to the importer into cash transaction for the exporter protecting him completely from all the risks associated with selling overseas on credit. It effectively transforms a credit sale into a cash sale.

2022 - Dec [10] Write short notes on the following:

(a) Factoring vs. Bill Discounting **(4 marks)**

(c) Operating and Finance Lease **(4 marks)**

(d) GDR and ADR **(4 marks)**

Answer:

(a) Factoring vs. Bill discounting:

Factoring differs from discounting in many respects. They are:

(i) Factoring is a broader term covering the entire trade debts of a client whereas discounting covers only those trade debts which are backed by Account Receivables.

(ii) Under factoring, the factor purchases the trade debt and thus becomes a holder for value. But, under discounting the financier acts simply as an agent of his customer and he does not become the owner. In other words, discounting is a kind of advance against bills whereas factoring is an outright purchase of trade debts.

(iii) The factors may extend credit without any recourse to the client in the event of non-payment by customers. But, discounting is always made with recourse to the client.

(iv) Account Receivables under discount are subject to rediscounting whereas it is not possible under factoring.

(v) Factoring involves purchase and collection of debts, management of sales ledger, assumption of credit risk, provision of finance and rendering of consultancy services. But, discounting involves simply the provision of finance alone.

(vi) Bill discounting finance is a specific one in the sense that it is based on an individual bill arising out of an individual transaction only. On the other hand, factoring is based on the 'whole turnover' i.e., a bulk finance is provided against a number of unpaid invoices.

(vii) Under discounting, the drawee is always aware of the bank's charge on receivables. But, under undisclosed factoring everything is kept highly confidential.

(viii) Bill financing through discounting requires registration of charges with the Registrar of Companies. Infact, factoring does not require such registration.

(ix) Discounting is always a kind of "in-balance sheet financing". That is, both the amount of receivables and bank credit are shown in the balance sheet itself due to its 'with recourse' nature. But, factoring is always "off-balance sheet financing".

(c) Operating & Finance Lease:

Operating Lease	Finance Lease
(i) The lease is usually cancellable at short- notice by the lessee.	(i) It is usually non cancellable by the lessee prior to its expiration date.
(ii) It is a short term lease. The lease period in such a contract is less than the useful life of asset.	(ii) Financial Lease is for a longer period of time.
(iii) The lessee usually has the option of renewing the lease after the expiry of lease period.	(iii) A Financial Lease usually provides the lessee an option of renewing the lease for further period at a normal rent.
(iv) As the period of an operating lease less than the useful life of the asset, it does not necessarily amortize the original cost of the asset. The lessor has to make further leases or sell the asset to recover his cost of investment and expected rate of return.	(iv) The present value of the total lease rentals payable during the period of the lease exceeds or is equal substantially the whole of the fair value of the leased asset. It implies that within the lease period, the lessor recovers his investment in the asset along with an acceptable rate of return.

(d) ADR & GDR

ADR	GDR
The depositary receipts in US market is ADR.	The depositary receipt in world market is GDR.
It is issued outside USA but traded in USA.	It is not for trading in USA.
Issued in accordance with the provision of SEC of USA.	Not comply with any of the condition of SEC of USA.
It has very strict provisions.	Disclosure requirement is less stringent.
Cost of issuing ADR is high.	Cost is not high.
It is not so popular only 10 companies have issued ADR.	It is much preferable than ADR.
ADR are listed in American stock exchange.	GDR are listed in other than ASE like Luxemburg, etc.

DESCRIPTIVE QUESTIONS

2013 - Dec [8] (c) What is factoring? Explain the concept of full service factoring. **(4 marks)**

Answer:

Factoring: Factoring means an arrangement between a factor and his client which includes at least two of the following services to be provided by the factor:

- Finance
- Maintenance of debt
- Collection of debts
- Protection against credit risk.

Under a typical factor arrangement a factor collects the accounts on due dates, effects payments to the firm on these dates and also assumes the credit risks associated with the collections.

In order to provide a gamut of financial services under one roof, Corporation has also started factoring services. Under the scheme Corporation shall be at the time being only providing advances or prepayments against receivable and other services provided by the factor such as debt collection and administration of sales ledger etc. shall be taken later on.

Under the scheme receivables only arising out of domestic trade shall be considered for factoring. Supplier/Borrower shall draw bills of exchange for goods supplied and the purchaser shall accept that. After acceptance of bills of exchange, Corporation shall make prepayment of 80% of invoice value after deducting its discount charges @ 17% to 18% p.a. for period of bill of exchange to supplier. Balance payment of 20% of the invoice value shall be made after collecting the payment from purchaser. If purchaser fails to pay the due amount on due dates, the supplier shall make the payment.

Full Services Factoring- Under Full service factoring all kinds of services are provided i.e. Thus, a factor provides finance, administers the sales ledger, collects the debts at his risk and renders consultancy service. This type of factoring is a standard one. If the debtors fail to repay the debts, the entire responsibility falls on the shoulders of the factors since he assumes the credit risk also. Under this responsibility cannot be transferred to client and, hence, this type of Factoring is also called 'Without recourse' factoring.

2013 - Dec [9] (b) Answer the following:

(iii) Explain the procedure involved in the 'Forfeiting' Financial Service. **(4 marks)**

Answer:

Forfeiting is a financial transaction involving the purchase of receivables from exporters by a forfeiter. The forfeiter takes on all the risks associated with the receivables but earns a margin. The purchasing of an exporter's receivables (the amount importers owe the exporter) at a discount by paying cash. The forfeiter, the purchaser of the receivables, becomes the entity to whom the importer is obliged to pay its debt.

By purchasing these receivables - which are usually guaranteed by the importer's bank - the forfeiter frees the exporter from credit and from the risk of not receiving payment from the importer who purchased the goods on credit. While giving the exporter a cash payment, forfeiting allows the

importer to buy goods for which it cannot immediately pay in full. The receivables, becoming a form of debt instrument that can be sold on the secondary market, are represented by bills of exchange or promissory notes, which are unconditional and easily transferred debt instruments.

In summarized way 'Forfeiting' Financial Services:

(a) The exporter sells the goods to the importer on a deferred payment basis spread over 3-5 years.
(b) The importer draws a series of promissory notes in favour of the exporter for the payments to be made inclusive of interest charges.
(c) Such promissory notes are availed or guaranteed by a reputed international bank which can also be the importer's banker, (it is endorsed on the promissory note by the guaranteeing bank that it covers any default of payment of the buyer).
(d) The exporter now sells the availed notes to a forfeiter (which may be the exporter's banker) at a discount without recourse.
(e) The forfeiter may hold these notes till maturity or sell them to group of investors interested in taking up such high-yielding unsecured paper.

Forfeiting of Promissory Notes:

(a) Promissory notes sent for availing to the importer's banker
(b) Availed notes returned to the importer
(c) Availed notes sent to exporter
(d) Availed notes sold at a discount to a forfeiter on a non - recourse basis
(e) Exporter obtains finance
(f) Forfeiter holds the notes till maturity or sells the short-term paper either to a group of investors or to investors in the secondary market.

2014 - June [9] (b) Answer the following

(ii) What are the distinctive features of a financial lease and an operating lease? **(4 marks)**

Answer:

Distinctive features of Financial Lease and Operating Lease

Financial Lease	Operating Lease
(i) It is usually non cancellable by the lessee prior to its expiration date.	(i) The lease is usually cancellable at short- notice by the lessee.

(ii) Financial Lease is for a longer period of time.	(ii) It is a short term lease. The lease period in such a contract is less than the useful life of asset.
(iii) A Financial Lease usually provides the lessee an option of renewing the lease for further period at a normal rent.	(iii) The lessee usually has the option of renewing the lease after the expiry of lease period.
(iv) The present value of the total lease rentals payable during the period of the lease exceeds or is equal substantially the whole of the fair value of the leased asset. It implies that within the lease period, the lessor recovers his investment in the asset along with an acceptable rate of return.	(iv) As the period of an operating lease less than the useful life of the asset, it does not necessarily amortize the original cost of the asset. The lessor has to make further leases or sell the asset to recover his cost of investment and expected rate of return.

2016 - June [8] (b) What is Global Depository Receipt (GDR)? List three of its characteristics. **(2 + 3 = 5 marks)**

Answer:

Global Depositary Receipt (GDR):

A GDR is a negotiable instrument, basically a bearer instrument which is traded freely in the international market either through the stock exchange or over the counter or among Qualified International Buyers (QIB).

It is denominated in US Dollars and represents shares issued in the local currency.

Characteristics:

1. The shares underlying the GDR do not carry voting rights.
2. The instruments are freely traded in the international market.
3. The investors can fixed income by way of dividend.
4. GDRs can be converted into the underlying shares, depository/custodian banks reducing the issue.

2016 - Dec [7] (b) What is a Financial Lease? What are its characteristic features? **(5 marks)**

Answer:

Financial Lease (FL) and its characteristics:

A lease is classified as a financial lease if it ensures the amortisation of the entire cost of investment plus the expected return on capital outlay during the term of the lease.

It is usually for a longer period and covers the life of the asset.

Financial Lease is commonly used for land, building, machinery and fixed equipments.

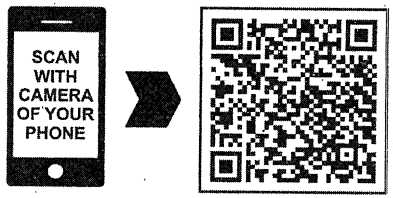
The present value of the total lease rentals payable during the period of the lease exceeds or is equal substantially to the whole of the fair value of the leased asset, i.e. the lessor recovers the investment and an acceptable rate of return within the lease period.

The lease period is longer compared to an operating lease.

It is usually non cancellable prior to its expiration date.

In a financial lease the lessor is mostly responsible for the maintenance and service of the asset.

Financial Lease usually provides the lessee an option of renewing the lease for a further period at normal rent.



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Paper 11 Financial Management and Business Data Analytics

Feedback	I Need More	Scanner Preparation Key
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Motivational Thoughts

- Quote: "The best source of finance is not just money, but smart money that comes with vision."
- Thought: Finance is the lifeblood of business. Choosing the right source is the first step toward growth and stability.

Checklist for Understanding

- **Definition and classification of sources of finance:**
  - Internal vs. External
  - Long-term vs. Short-term
  - Equity vs. Debt
- **Key instruments:**
  - Equity shares, debentures, term loans.
  - Advantages and disadvantages of each source.
  - Factors influencing the choice of finance.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	SOURCES OF FINANCE AND COST OF CAPITAL
4B	**Cost of Capital**

THIS CHAPTER INCLUDES

1. Meaning of Cost of Capital
2. Importance of Cost of Capital
3. Determining Factors of Cost of Capital
4. Computation of Weighted Average Cost of Capital

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2022 - Dec [8] (a), 2023 - June [4] (a) (i)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2017 - June [10] Write short notes on the following:
(b) Capital Asset Pricing Model **(4 marks)**

Answer:

Capital Asset Pricing Model:

Another technique that can be used to estimate the cost of equity is the capital asset pricing model approach. The capital asset pricing model explains the behaviour of security prices and provides a mechanism whereby investors could assess the impact of a proposed security investment on their

overall portfolio risk and return. In other words, CAPM formally describes the risk required return trade off for securities. The assumptions for CAPM approach are:

(i) The efficiency of the security
(ii) Investor preferences.

The capital asset pricing model describes the relationship between the required rates of return, or the cost of equity capital and the non-diversifiable or relevant risk of the firm as reflected in its index of non-diversifiable risk.

Symbolically,

$Ke = Rf + ß (Rm - Rf)$

Where

Ke = Cost of equity capital
Rf = Risk free rate of return
Rm = Return on market portfolio
ß = Beta of Security

DESCRIPTIVE QUESTIONS

2015 - June [III] (a) (iii) What is Marginal Cost of Capital? How is it used in decision making? **(4 marks)**

Answer:

Marginal Cost of Capital: The weighted average cost of new or incremental capital is known as the marginal cost of capital.

Use of Marginal Cost of Capital in decision making: This concept is used in capital budgeting decisions. Marginal cost of capital is cost incurred in raising additional funds by the firm. It is calculated using marginal weights where marginal weights represent the proportion of funds the firm intends to employ. Marginal cost of capital is used as a cut-off point for new investments. The average cost of capital should be used to evaluate the impact of the acceptance or rejection of the entire capital expenditure on the value of the firm.

PRACTICAL QUESTIONS

2013 - Dec [7] (b) The capital structure of J Ltd. is as under:

	₹
Equity shares @ ₹ 10 each	1,00,00,000
9% Preference Shares @ ₹ 100 each	30,00,000
14% Debentures @ ₹ 100 each	70,00,000

The market price of these securities are:

Equity Shares	35 per share
Preference Share	120 per share
Debentures	110 per debenture

Other information are:

(i) Equity shares have a floatation cost of ₹ 5 per share. The next year's expected dividend is ₹ 3 with annual growth of 5%. The company pays all earnings in the form of dividends.
(ii) Preference Shares are redeemable at a premium of 10%, have 2% floatation cost and 10 year maturity.
(iii) Debentures are redeemable at par, have 4% floatation and 10 per year maturity.
(iv) Corporate tax rate is 30%.

You are required to calculate the weighted average cost of capital using (i) book value weights and (ii) market value weights. **(8 marks)**

Answer:

$$\text{Cost of Debt } (K_d) = \frac{1(1-t) + \frac{RV - NS}{N}}{\frac{RV + NS}{2}} \times 100$$

$$= \frac{14(1 - 0.30) + \frac{100 - 96}{10}}{\frac{100 + 96}{2}} \times 100$$

$$= \frac{9.8 + 0.4}{98} \times 100 = 10.41\%$$

Cost of preference capital (k_p) $= \dfrac{\text{Pref. dividend} + \dfrac{RV - NS}{N}}{\dfrac{RV + NS}{2}} \times 100$

$= \dfrac{9 + \dfrac{110-98}{10}}{\dfrac{110+98}{2}} \times 100$

$= \dfrac{10.20}{104} \times 100 = 9.81\%$

Cost of capital (K_e) $= \dfrac{D}{\text{Net sale proceeds}} \times 100 + \textit{Growth}\ (G)$

$= \dfrac{3}{35 - 5} \times 100 + 5\%$

$= 10\% + 5\% = 15\%$

Calculation of WACC using book value weights

Source of Capital	Book value (₹)	Weight (w)	Specification (k)	WACC
14% Debenture	70,00,000	0.35	10.41%	3.6435
9% Preference Shares	30,00,000	0.15	9.81%	1.4715
Equity Shares	1,00,00,000	0.50	15%	7.5000
	2,00,00,000	1.00		**12.615%**

Calculation of WACC using Market value weights

Source of Capital	Market value (₹)	Weight (w)	Specification (k)	WACC
14% Debentures	77,00,000	0.16631	10.41%	1.73129
9% Preference Shares	36,00,000	0.07775	9.81%	0.76273
Equity Shares	3,50,00,000	0.75584	15%	11.3391
	4,63.00,000	1.00		**13.833%**

2014 - Dec [3] Answer the question:

(a)(ii) The following is the capital structure of P Ltd. as on 31st March, 2014:

6,00,000 equity shares at ₹ 10 each fully paid

10,000 9% preference shares of ₹ 100 each fully paid

30,000 12% debentures of ₹ 100 each

The equity share sells at ₹ 20 per share. The dividend expected next year is ₹ 2.5 per share, which is expected to grow at 5% per annum forever. Corporate tax rate is 30%.

(a) Compute the weighted average cost of capital based on the existing capital structure.

(b) If the company raises an additional debt of ₹ 25,00,000 by issuing 14% debentures, resulting in increasing the expectation on equity dividend to ₹ 2.70 per share and leaving the growth rate unchanged and the fall in equity share price to ₹ 18 per share, find the revised weighted average cost capital. **(8 marks)**

Answer:

(a) $K_d = 12(1\text{-}0.30) = 8.4\%$

$K_p = 9\%$

$Ke = \dfrac{D_1}{P_0} + g$

$\dfrac{2.5}{20} + 0.05 = 17.5\%$

Sources	Amount ₹	Weights	Cost of capital	K_o
12% Debentures	30,00,000	0.30	8.4%	2.52
Preference shares	10,00,000	0.10	9%	0.90
Equity shares	60,00,000	0.60	17.5%	10.50
	1,00,00,000			**13.92**

Weighted average cost of capital = 13.92%

(b) $K_e = \frac{D_1}{P_0} + g$

$= \frac{270}{18} + 5 = 20\%$

Additional debt ₹ 25,00,000

Sources	Amount ₹	Weights	Cost of capital	K_o
12% Debentures	30,00,000	0.24	8.4%	2.016
14% Debentures	25,00,000	0.2	9.8%	1.96
Preference shares	10,00,000	0.08	9%	0.72
Equity shares	60,00,000	0.48	20%	9.6
	1,25,00,000			**14.3**

Weighted average cost of capital = 14.30%

2015 - Dec [I] (c) G Ltd. issues 20,000, 12% debentures of ₹ 100 each at premium of 10 per cent. The debentures are redeemable after the expiry of a fixed period of 10 years at 20 per cent premium. Calculate the cost of debt after 30% tax. **(2 marks)**

Answer:

Cost of debt (K_d) $= \frac{12(1 - 0.30) + \left(\frac{120 - 110}{10}\right)}{\left(\frac{120 + 110}{2}\right)} \times 100$

$= \frac{(8.4 + 1)}{115} \times 100$

$= 8.17\%$

2016 - June [7] (b) ABC Ltd. has the following book value capital structure as on 31st March, 2016:

Particulars	Amount ₹
Equity share capital	40,00,000
11.5% Preference shares	10,00,000
10% Debentures	30,00,000
	80,00,000

The equity share of the company sells for ₹ 20. It is expected that next year the company will pay a dividend of ₹ 2 per equity share, which is expected to grow at 5% p.a. forever. Assume a 35% corporate tax rate.

Using book value weight:

(i) Compute weighted average cost of capital (WACC) of the company based on the existing capital structure.

(ii) Compute the new WACC, if the company raises an additional ₹ 20 lakhs debt by issuing 12% debentures, at par ₹ 100 which would result in increasing the expected equity dividend to ₹ 2.40 and leave the growth rate unchanged, but the price of equity share will fall to ₹ 16 per share. **(7 marks)**

Answer:

WACC based on existing capital structure:

(i) Cost of equity capital = 2/20 + 0.05 = 0.15 or 15%

(ii) Cost of preference share capital = 11.5/100 = 0.115 or 11.5%

(iii) Cost of debentures = 10% (1 - 0.35) = 6.5%

WACC (based on book values):

Source of Capital	Book Values (₹)	Weight	Post-tax Cost	Weighted Cost %
Equity Share Capital	40,00,000	0.500	15	7.50
Preference Share Capital	10,00,000	0.125	11.5	1.44 or 1.4375
10% Debentures	30,00,000	0.375	6.50	2.44 or 2.4375
Total	80,00,000	1.000		11.38 or 11.375

WACC (based revised capital structure):

(i) Cost of equity capital = 2.40/16 + 0.05 = 0.20 or 20%
(ii) Cost of preference share capital = 11.5/100 = 0.115 or 11.5%
(iii) Cost of 10% debentures = 10% (1-0.35) = 6.5%
(iv) Cost of 12% debentures = 12% (1-0.35) = 7.8%

WACC (based on book values, after raising additional finance by issue of 12% debentures):

Source of Capital	Book Values (₹)	Weight	Post-tax Cost	Weighted Cost %
Equity Share Capital	40,00,000	0.400	20	8.00
Preference Share Capital	10,00,000	0.100	11.5	1.15
10% Debentures	30,00,000	0.300	6.50	1.95
12% Debentures	20,00,000	0.200	7.80	1.56
Total	1,00,00,000	1.000		12.66

2017 - June [9] (a) A company issued 10,000, 10% Preference Share of ₹ 10 each, cost of issue is ₹ 2 per share. Calculate cost of capital, assuming that the shares are issued (a) at par, (b) at 10% premium, and (c) at 5% discount. **(6 marks)**

Answer:

(a) Cost of preference capital, (Kp) = D/NP
Where, Kp = Cost of preference capital D = Annual preference dividend
NP = Net proceeds of preference shares.
When issued at par: (₹ 10,000/10,000 × 8) × 100 =12.5%
(b) When issued at 10% premium: (₹ 10,000/10,000 × 9) × 100 = 11.11%
(c) When issued at 5% discount: (₹ 10,000/10,000 × 7.5) × 100 = 13.33%

2017 - Dec [9] (a) Given below is the Statement of Assets and Liabilities of a company as at 31st December, 2016.

Liabilities	₹	Assets	₹
Equity share capital		Fixed Assets	6,00,000
40000 shares of ₹ 10 each	4,00,000		

Reserve and surplus	2,60,000	Investments	1,00,000
8% debentures	1,70,000	Current assets	2,80,000
Current Liabilities			
Short term loans	1,00,000		
Trade creditors	50,000		
	9,80,000		9,80,000

Calculate the company's weighed average cost of capital using balance sheet valuations. The following additional information are also available.

(i) 8% Debentures were issued at par.
(ii) All interests payments are up to date and equity dividend is currently 12%.
(iii) Short term loan carries interest at 18% p.a.
(iv) The shares and debentures of the company are quoted on the Calcutta Stock Exchange and current Market Prices are as follows: Equity Shares at ₹ 14 each and 8% Debentures at ₹ 98 each.
(v) The rate of tax for the company may be taken at 50%. **(7 marks)**

Answer:

Calculation of the Cost of Equity:

	₹
Equity Share	4,00,000
Reserves and Surplus	2,60,000
Equity (Shareholder's) Fund	6,60,000
Book Value Per Share	= 6,60,000/40,000 = ₹ 16.50.
Equity Dividend Per Share	= 12/100 ×10 = ₹ 1.20
Therefore, Cost of Equity (%)	= 1.20/16.50 × 100 = 7.273%

Computation of Weighted Average Cost of Capital:

Capital Structure or

Type of Capital	Amount (₹)	Before Tax	After Tax	Weighted Average Cost %
Equity funds	6,60,000	7.273%	7.273%	48,000

Debentures	1,70,000	8%	4%	6,800
Total	8,30,000		54,800	

Weighted Average Cost of Capital = 54,800/8,30,000 × 100 = 6.602%

2018 - June [9] (a) The CMD Ltd. has the following specific cost of capital along with the indicated book and market value weights:

Type of Capital	Cost	Book value weights	Market value weights
Equity	0.18	0.5	0.58
Preference shares	0.15	0.2	0.17
Long-term debt	0.07	0.30	0.25
		1.00	1.00

Required:

(i) Calculate the weighted cost of capital, using book and market value weights.

(ii) Calculate the weighted average cost of capital, using marginal weights, if the company intends to raise the needed funds using 50 per cent long-term debt, 35 per cent preference shares and 15 per cent retained earnings.

Note: Ignore Taxation **(6 marks)**

Answer:

(i) K_o based on book value (BV) weights and market value (MV) weights:

Sources of Capital	Weights		Cost	Total Cost	
	BV	MV		(BV×K)	(MV × K)
Equity Funds	0.50	0.58	0.18	0.090	0.1044
Preference Shares	0.20	0.17	0.15	0.030	0.0255

Long-term debt	0.30	0.25	0.07	0.021	0.0175
				0.141	0.1474

K_o based on BV weights – 14.1 per cent.

K_o based on MV weights – 14.7 per cent.

(ii) K_o using marginal weights

Sources of Capital	Weights (W)	Cost (K)	Total Cost (W×K)
Long-term Debt	0.50	0.07	0.0350
Preference Shares	0.35	0.15	0.0525
Retained Earnings	0.15	0.18	0.1145

K_o = 11.45 per cent.

2019 - June [9] (a) The WONDERLAND LTD. has the following Book Value Capital Structure as on March 31, 2019:

	(Amount in ₹ Thousand)
6,00,000 Equity Shares at ₹ 10 each fully paid	6000
10,000, 9% Preference Shares of ₹ 100 each	1000
30000, 12% Debentures of ₹ 100 each	3000
	10000

The equity share of the Company sells at ₹ 20 per share. The dividend expected next year is ₹ 2.5 per share, which is expected to grow at 5% per annum. Corporate tax rate is 30%.

You are required to **determine** the Weighted Average Cost of Capital (WACC) of Wonderland Ltd. based on the existing Capital Structure.

(6 marks)

Answer:

$K_e = (D_1 / P_0) + g = \frac{2.5}{20} + 0.05 = 0.175 = 17.5\%$

$K_p = 9\%$

$K_a = 12\ (1 - 0.30) = 8.4\%$

Calculation of Weighted Average Cost of Capital : **(₹ In thousand)**

Sources	Amount	Weight	Cost %	K_0 (%)
Equity Share	6,000	0.60	17.5	10.50
9% Preference Shares	1,000	0.10	9	0.90
12% Debentures	3,000	0.30	8.4	2.52
	10,000	1.00		13.92

Hence, the weighted Average Cost of Capital (WACC) of Wonderland Ltd. is 13.92%.

2019 - Dec [9] (a) The following is the capital structure of ZENITH LTD.:

Source of capital	Book value	Market value
	₹	₹
Equity shares @ ₹ 100 each	80,00,000	1,60,00,000
9 per cent cumulative preference shares @ ₹100 each	20,00,000	24,00,000
11 per cent debentures	60,00,000	66,00,000
Retained earning	40,00,000	—
	2,00,00,000	2,50,00,000

The current market price of the company's equity share is ₹200. For the last year the company had paid equity dividend at 25 per cent and its dividend

is likely to grow 5 per cent every year. The corporate tax rate is 30 per cent and shareholders personal income tax rate is 20 per cent.

You are required to calculate:

(i) Cost of capital for each source of capital.

(ii) Weighted average cost of capital on the basis of market value weights. **(6 marks)**

Answer:

(i) **Calculation of Cost of Capital for each source of capital :**

1. Cost Equity Capital:

$$K_e = \frac{DPS\ (1 + g)}{MP} \times 100 + g$$

$$= \frac{25\ (1 + 0.05)}{200} \times 100 + 5$$

$$= \frac{26.25}{200} \times 100 + 5$$

$$= 13.125 + 5 = 18.125\%$$

2. Cost of Preference Capital or $K_p = 9\%$.

3. Cost of Debentures: K_d (after tax) $= r(1 - T) = 11(1 - 0.3) = 7.7\%$

(ii) **Weighted Average Cost of Capital (On the basis of Market value weights)**

Source	(Market Value) (₹)	Weight	Cost of Capital (after tax) (%)	WACC (%)
(1)	(2)	(3)	(4)	(5) = (3) × (4)
Equity Capital	1,60,00,000	0.640	18.125	11,600
Preference Share Capital	24,00,000	0.096	9	0.864
Debentures	66,00,000	0.264	7.7	2.033
Retained Earnings	—	—	—	—
	2,50,00,000	1,000		14.497

Hence, WACC on the basis of Market Value Weights = 14.497%. ie 14.50%

2021 - Dec [2] PAN Ltd. has the following Capital Structure on September 30, 2021.

	Amount in ₹ Thousand
Equity Share Capital (2 Lakh shares of ₹ 10 each)	2,000
Other equity	2,000
12% Preference Shares	1,000
9% Debentures	3,000
TOTAL	**8,000**

The market Price of Equity Share is ₹ 30. It is expected that the Company will pay next year a dividend of ₹ 3 per share which will grow at 7% forever. Corporate Tax is 40%. Based on above information you are required to answer the following questions :

(i) What is the Cost of Equity ?

(ii) What is the weighted Average Cost of Capital (WACC) of the Company using book value weights ? **(5 marks) [Sec. C One LAQ]**

Answer :

(i) Cost of Equity $K_e = \frac{D_1}{P_0} + g$

$K_e = \frac{3}{30} + 0.07 = 0.17$ or 17%

(ii) $WACC = \left(0.17 \times \frac{2}{8}\right) + \left(0.17 \times \frac{2}{8}\right) + \left(0.12 \times \frac{1}{8}\right) + \left[0.09(1-0.40) \times \frac{3}{8}\right]$

$= 0.12025$ or 12.03%

2022 - Dec [8] (a) HDR Ltd. requires additional finance of ₹ 20 lakhs for meeting its investment plans. The following information is given:

(i) Company has ₹ 4,00,000 in the form of retained earnings available for investment purposes.

(ii) Target Debt-Equity Ratio: 25:75.

(iii) Cost of debt is 10% (before tax) for the first ₹ 2,00,000 and 13% (before tax) beyond that.

(iv) Earning per share ₹12.

(v) Dividend Payout Ratio 50%.

(vi) P/E Ratio 5.

(vii) The company wants to offer the issue of Equity Shares at a premium of 20% of the market price. The flotation cost is expected to be ₹ 6 per share.

(viii) Company's tax rate is 30% and the shareholder's personal tax rate is 20%.

Calculate the overall weighted average (after tax) cost of additional finance. **(6 marks)**

Answer:

Weighted Average Cost of Capital = K0 = 0.16898 or 16.898%

2023 - June [4] (a) (i) Kaloo Ltd. requires additional finance of ₹ 20 lakhs for meeting its investment plans. The company has ₹ 4,00,000 in the form of retained earnings available for investment purposes. Target Debt-Equity Ratio 25:75. Cost of debt is 10% (before tax) for the first ₹ 2,00,000 and 13% (before tax) beyond that. Earning per share ₹ 12. Dividend Payout Ratio 50%. P/E Ratio 5. The company wants to offer the issue of Equity Shares at a premium of 20% of the market price. The flotation cost is expected to be ₹ 6 per share. Company's tax rate is 30% and the shareholder's personal tax rate is 20%. Calculate the overall weighted average (after tax) cost of additional finance. **(6 marks)**

Answer:

Please refer 2022 - Dec [8] (a) on page no. 163

2023 - Dec [4] (b) T Ltd, provides you the following information:

Particulars	
No. of Equity Shares (₹ 10 each)	1,50,000
No. of 17% Preference Shares (₹ 100 each)	20,000

Retained Earnings	₹ 5,00,000
No. of 7.5% Debentures (₹ 100 each)	30,000
10% Long-term Loan	₹ 10,00,000

Additional Information:

(i) The Current market price of the company's equity share is ₹ 30. Expected Dividend per Equity Share for the year is ₹ 1.20 which is expected to grow @ 5%. The flotation cost on issue of new equity shares is expected to be ₹ 5 per share.

(ii) The Preference shares of the company which are redeemable at par after 5 years are currently selling at ₹ 90 per Preference Share.

(iii) The Debentures of the company which are redeemable at 10% premium after 5 years are currently quoted at ₹ 90 per debenture.

(iv) The corporate tax rate is 20%.

Calculate Weighted Average Cost of Capital using (a) Book Value Weights (b) Market Value Weights. **(7 marks)**

Answer:

Calculation of specific costs:

1. Cost of debentures $(K_d) = \frac{I(1-T)+(Rv-Bo)/N}{(Rv+Bo)\div 2}$

$$= \frac{7.5(1-.2)+(110-90)/5}{(110+90)\div 2}$$

$$= \frac{6+4}{100} = 10\%$$

2. Cost of long term loan $= \frac{10}{100}(1-.2)$

$$= 8\%$$

3. Cost of equity shares $(K_e) = \frac{D_1}{P_0 - f} + g$

$$= \frac{1.2}{30-5} + 0.05$$

$$= 9.8\%$$

4. Cost of retained earning (K_r) = The cost of retained earning K_r will be same as that of cost of equity capital k_e however, there is no flotation cost in respect of the retained earning . Therefore:

$$K_r = \frac{D_1}{P_0} + g$$

i.e $\frac{1.2}{30} + 0.05 = 9\%$

WACC based on book value and market value weights

Particulars	Book Value (₹)	Market Value (₹)	Cost of Capital	B.V × c/c (2×4)	MV × c/c (3×4)
1	2	3	4	5	6
Eq. Share capital	15,00,000	33,75,000	0.098	1,47,000	3,30,750
Retained earning	5,00,000	11,25,000	0.09	45,000	1,01,250
Pref. Share capital	20,00,000	18,00,000	0.20	4,00,000	3,60,000
Debentures	30,00,000	27,00,000	0.10	3,00,000	2,70,000
Long term loan	10,00,000	10,00,000	0.08	80,000	80,000
	80,00,000	100,00,000		9,72,000	11,42,000

K_0 (On Basis of Book value as weight) $= \frac{9,72,000}{80,00,000} \times 100$

$$= 12.15\%$$

K_0 (On Basis of Market value as weight) $= \frac{11,42,000}{10,00,000} \times 100$

$$= 11.42\%$$

5. Cost of Pref. Share $(K_p) = \frac{P_D + (R_v - P_0)/N}{(Rv + P_o)\div 2}$

$$= \frac{17 + (100-90)/5}{(100+90)\div 2} = 20\%$$

2024 - June [4] (b) PQR Ltd., has the following book value capital structure:

Particulars	₹ in crore
Equity capital (₹ 10 each fully paid)	15.00
11% Preference capital (₹ 100 each fully paid)	1.00

Retained earnings	20.00
13.5% Debentures (₹ 100 each)	10.00
15% Term Loans	12.50

Additional Information:

(i) Expected equity dividend per share is ₹ 3.60. The dividend per share is expected to grow at the rate of 7 per cent. The market price per share is ₹ 40.

(ii) 11% Preference shares are redeemable after ten years at par. The current market price is ₹ 75 per share.

(iii) 13.5% Debentures are redeemable after six years at par. Current market price is ₹ 80 per debenture. Only interest is tax deductible.

(iv) The income-tax rate for the company is 40 per cent.

You are required to calculate the weighted average cost of capital using (i) Book value weights; and (ii) Market value weights. **(7 marks)**

Answer:

(i) **Book Value**

Statement of WACC (₹ in cr.)

Source	₹	Weight	CoC	WxCoc
Equity Share Capital	15.00	0.2564	0.1600	0.04100
11% Preference Share Capital	1.00	0.0171	0.1543	0.00260
Retained Earnings	20.00	0.3419	0.1600	0.05470
13.5% Debenture	10.00	0.1709	0.1270	0.02170
15% Term Loans	12.50	0.2137	0.0900	0.01923
	58.50			0.13923

WACC = 0.13923 or 13.923%

Working:

1. $Ke = \frac{D_1}{P_0} + g = \frac{3.6}{40} + 0.07 = 0.16$ or 16%

2. $Kp = \frac{PD + \left[\frac{Rv - NP}{n}\right]}{\frac{Rv + NP}{2}}$

$= \frac{11 + \left[\frac{100 - 75}{10}\right]}{\frac{100 + 75}{2}} = \frac{11 + 2.5}{87.5} = 15.43\%$

3. $Kd = \frac{Int. \times (1-T) + \left[\frac{Rv - NP}{n}\right]}{\frac{Rv - NP}{2}}$

$= \frac{[(100 \times 13.5\%) \times (1 - 0.4)] + \left[\frac{100 - 80}{6}\right]}{\frac{100 + 80}{2}}$

$= \frac{8.1 + 3.33}{90} = 0.127$ or 12.70%

4. Kd (Term loan) = Interest Rate × (1 - T)
=0 .150 × (1 -0.4)
= 0.09 or 9%

(ii) **Market Value**:

Statement of WACC

Source	₹	Weight	Coc	WxCoc
Equity Share Capital	60.00	0.7385	0.1600	0.1182
11% Preference Share Capital	0.75	0.0092	0.1543	0.0014
13.5% Debentures	8.00	0.0985	0.1270	0.0125
15% Term Loan	12.50	0.1538	0.0900	0.0138
	81.25	1.0000		0.1459

WACC = 0.1459 or 14.59%

Calculation of Market value:

1. Equity Share Capital = $\frac{15}{10} \times 40 = 60$
2. 11% Preference Share Capital = $\frac{1}{100} \times 75 = 0.75$
3. 13.5 % Debentures = $\frac{10}{100} \times 80 = 8$

So,

1. Book value = 13.923%
2. Market value = 14.59%

2024 - Dec [4] (b) Prakash Packers Ltd. has the following capital structure:

Particulars	₹ (in lakhs)
Equity Share Capital (₹10 each)	200
14% Preference Share Capital (₹100 each)	100
Retained Earnings	100
12% Debentures (₹100 each)	300
11% Term Loan from Bank	50
Total	750

Additional Information:

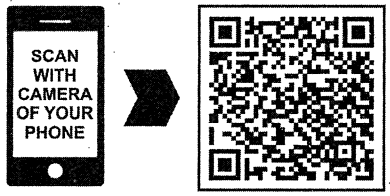
(i) The market price per equity share is ₹ 32. The company is expected to declare a dividend per share of ₹ 2 per share and there will be a growth of 10% in dividends for the next 5 years.

(ii) The preference shares are redeemable at a premium of ₹ 5 per share after 8 years and are currently traded at ₹ 84 in the market.

(iii) Debenture redemption will take place after 7 years at a premium of ₹ 5 per debenture and the current market price is ₹ 90 per debenture.

(iv) The corporate tax rate is 40%.

You are required to calculate the weighted average cost of capital using book value weights. **(7 marks)**



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Paper 11 Financial Management and Business Data Analytics

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Motivational Thoughts

- Quote: "The cost of capital is the price you pay for success, but the returns can be priceless."
- Thought: Understanding the cost of capital is crucial for making smart investment and financing decisions.

Fun Flow

- Visualize the flow: Capital Sources ? Cost Calculation ? WACC ? Decision Making

Checklist for Understanding
- Definition and importance of cost of capital.
- Components:
- Cost of Equity
- Cost of Debt
- Cost of Preference Shares
- Weighted Average Cost of Capital (WACC)
- Formulae and calculations.
- Factors affecting the cost of capital.

Fun Facts
- The concept of "cost of capital" was introduced in the 1950s by James E. Walter.
- Companies like Apple often have a lower cost of capital due to high creditworthiness.

Last-Minute Analysis
- Cost of Debt: Post-tax cost of interest-bearing debt.
- Cost of Equity: Based on expected returns and risk.
- WACC: Weighted average of all sources of financing.

Smart Study Tips
- Focus on understanding the formulae step by step.
- Practice real-world examples of WACC calculations.
- Relate the cost of capital to investment decisions.

Quick Study Tips
- Memorize formulas with acronyms like DPEW (Debt, Preference, Equity, WACC).
- Understand the logic behind each component rather than rote learning.

Practical Analysis
- Compare the cost of equity vs. cost of debt for companies like Reliance Industries.
- Analyze how WACC affects investment decisions in companies like Tesla.

Real-World Experience
- Example: How startups like Zomato face higher costs of equity due to perceived risk.
- Case: How Microsoft maintains a low cost of capital due to its credit rating.

Storytelling
- Case Study: How Infosys used WACC to make strategic investment decisions.
- The story of a CFO reducing the cost of debt through effective refinancing.

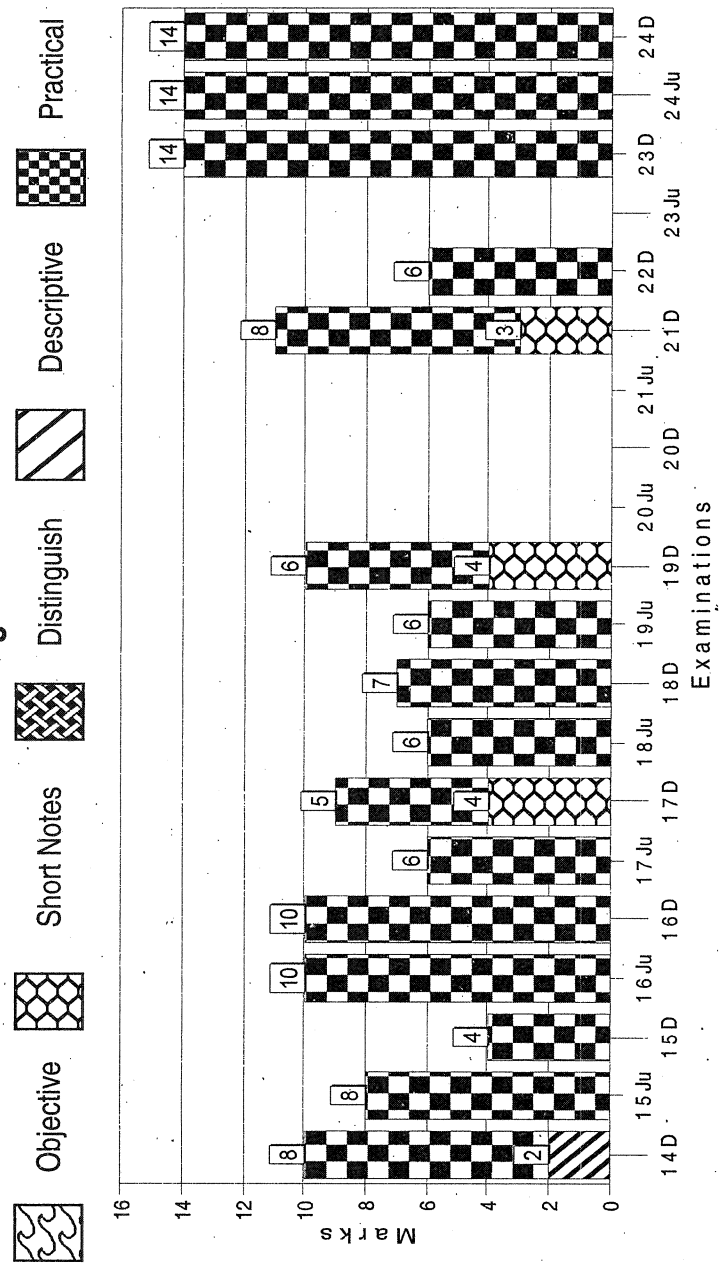
Fun Mnemonics
- SCORE for WACC:
- Sources of Capital
- Cost Components
- Overall Calculation
- Risk Adjustment
- Evaluation

Diagrammatic Representations
- Pie chart showing the composition of WACC.
- Flowchart of steps in calculating the cost of capital.

Jargon Busters
- Simplify terms like beta, risk premium, and yield to maturity.

THE GRAPH — Chapter Trend Analysis

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions



CHAPTER	
5	**Capital Budgeting**

THIS CHAPTER INCLUDES

1. Introduction to Capital Budgeting
2. Identification of Cash Flows and Forecasting
3. Cash Flow vs. Profit of the Firm
4. Evaluation Techniques – Non-discounted and Discounted Cash Flow Methods
5. Hurdle Rate in a Conglomerate Environment

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2017 - Dec [10] Write short note on the following:

(a) Internal Rate of Return **(4 marks)**

Answer:

Internal Rate of Return:

IRR method follows discounted cash flow technique which takes into account the time value of money. The internal rate of return is the interest rate which equates the present value of expected future cash inflows with the initial capital outlay. In other words, it is the rate at which NPV is equal zero. Whenever a project report is prepared, IRR is to be worked out in order to ascertain the viability of the project. This is also an important guiding factor to financial institutions and investors.

Formula:

$C = [\{A_1/(1+r)\} + \{A_2/(1+r_2)\} + \ldots\ldots\ldots\ldots + \{A_n/(1+R_n)\}]$

Where C = Initial Capital outlay.

A1, A2, A3 etc. = Expected future cash inflows at the end of year 1,2, 3 and so on.

r = Rate of interest
n = Number of years of project
In the above equation – 'r' is to be solved in order to find out IRR.

Computation of IRR:

The Internal Rate of return is to be determined by trial and error method. The following steps can be used for its computation,

(i) Compute the present value of the cash flows from an investment, by using arbitrary by selected Interest Rate,
(ii) Then compare the present value so obtained with capital outlay,
(iii) If the Present Value is higher than the cost, then the present value of inflows is to be determined by using higher rate,
(iv) This procedure is to be continued until the Present Value of the inflows from the investment are approximately equal to its outflow,
(v) The Interest Rate that bring about equality is the internal rate of return.

2019 - Dec [10] Write short note on the following:
(d) Need of Capital Budgeting Decision. **(4 marks)**

Answer:

Need of Capital Budgeting Decision:

The selection of the next profitable Project of capital investment is the key Function of Financial Manager. The decisions taken by the management in this area affect the operations of the firm for many years.

Capital budgeting decisions are usually needed for the following purposes:

(i) **Expansion:** Firm requires additional funds to invest in fixed in fixed assets when it intends to expand the production facilities.
(ii) **Replacement:** The machines and equipments used in production may either wear out or may be rendered obsolete due to new technology. The firm needs funds for modernization and renovation.
(iii) **Diversification:** Diversification in production would require large funds for long term investment.
(iv) **Buy or Leases:** This is most important area in financial management whether the firm acquires the desired equipment and building on lease or buy it.
(v) Research and development.

2021 - Dec [3] Write Short Note on Profitability Index (PI)
(3 marks) [Sec. C Six LAQ]

Answer:

Profitability Index (PI):

Profitability Index (PI) is also known as ' Benefits Cost Ratio (BCR). According to Horne Van Home, the profitability index of a project is " the ratio of the present value of future net cash inflows to the present value of cash outflows".

$$\text{Profitability Index} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of Cash Outflows}}$$

Decision criteria : If the profitability index is greater than or equal to one, the project should be accepted otherwise reject.

Demerits : However, this technique suffers from the following limitations:

- it is somewhat difficult to compute
- it is difficult to understand the analytical of the decision on the basis of profitability index

DESCRIPTIVE QUESTIONS

2014 - Dec [1] Answer the question:
(j) What is the acceptance rule for a project under the internal rate of return parameter? **(2 marks)**

Answer:

Acceptance Rule

If the internal rate of return exceeds the required rate of return, then the project will be accepted. If the project's IRR is less than the required rate of return, it should be rejected. In case of ranking the proposals the technique of IRR is significantly used. The projects with highest rate of return will be ranked as first compared to the lowest rate of return projects.

Thus, the IRR acceptance rules are

Accept if IRR > k
Reject if IRR < k
May accept or reject if IRR = k
Where, k is the cost of capital.

PRACTICAL QUESTIONS

2013 - Dec [8] (a) A company has received an offer to purchase a new machinery in replacement of the existing one. The cost of the new machine will be ₹ 30 lacs. The supplier has offered to take the existing machine at ₹ 4 lacs.

The new machine will have an expected life of 5 years after which it will fetch a salvage value of ₹ 3 lacs. Currently, the company generates sales revenue of ₹ 40 lacs per annum and earns a contribution of 40% of sales. The new machine will reduce the unit variable cost by 20% and increase the output by 20%. The extra output can be sold.

The revenue cash flows may be considered at the end of each year. The company's after tax cost of capital is 14% per annum. The present value factors at 14% at each year end are as follows:

Year	1	2	3	4	5
P.V. factor	0.877	0.769	0.675	0.592	0.519

Based on the Net Present Value criterion, advise whether the proposal is acceptable. Ignore taxation. **(8 marks)**

Answer:

Current Sales Revenue	=	₹ 40,00,000
New Current Sales Revenue	=	₹ 48,00,000
Cost 60% existing	=	₹ 24,00,000
New Cost 60% existing	=	₹ 23,04,000
Contribution 40% of sales (existing)	=	₹ 16,00,000
New Contribution 40% of sales	=	₹ 24,96,000
Increase in contribution	=	₹ 8,96,000

At existing situation (Cash flow)

End of year	0	1	2	3	4	5
Investments	0					
Contribution	0	**16,00,000**	**16,00,000**	**16,00,000**	**16,00,000**	**16,00,000**
P.V. factor	1	0.877	0.769	0.675	0.592	0.519

P.V. of cash inflow		**14,03,200**	**12,30,400**	**10,80,000**	**9,47,200**	**8,30,400**
Total P.V. of Net Inflow	**54,91,200**					

(It is assumed that there is no salvage value for the existing machine after 5 year and that its useful life is 5 more years)

Proposed Machine

End of year	0	1	2	3	4	5
Cost of new machine	-30,00,000					
Salvage value of old machine	4,00,000					
Contribution	0	24,96,000	24,96,000	24,96,000	24,96,000	24,96,000
New Inflow/ (Outflow)	(-26,00,000)	24,96,000	24,96,000	24,96,000	24,96,000	24,96,000
P.V. factor	1	0.877	0.769	0.675	0.592	0.519
P.V. of cash flow	(-26,00,000)	21,88,992	19,19,424	16,84,800	14,77,632	12,95,424
Net P.V	59,66,272					
Increase in NPV with new machine	4,75,072					

Advice- Based on NPV criterion, purchase the new machine.

2014 - June [8] (b) Information on two projects is given below:

Project.....	A	B
Cash Inflows (₹ '000) Year-end		
1	50	282
2	300	250
3	360	180
4	208	Nil
Initial Investment - beginning of year 1	535	540

Evaluate which project is better under each of the following criteria taking discount rate as 10% p.a.

(i) NPV
(ii) Discounted pay Back period
(iii) Profitability Index **(8 marks)**

Answer:

Year	PV factor @10%	Cash flows of Project A	Present Value of Project A	Cumul-ative PV of Project A	Cash Flows of Project B	Present Value of Project B	Cumulative PV of Project B
0	1.00	(535)	(535)	-	(540)	(540)	-
1	0.909	50	45.45	45.45	282	256.338	256.338
2	0.826	300	247.8	293.25	250	206.5	462.838
3	0.751	360	270.36	563.61	180	135.18	598.018
4	0.683	208	142.06	705.67	-	-	598.018

(i) Net present value of project A = PV of inflows – PV of outflows
= 705.67 – 535
= 170.67

Net present value of project B = PV of inflows – PV of outflows
= 598.018 – 540
= 58.018

Project A is better. Since, it has higher NPV.

(ii) Discounted payback period

Payback period = $2 + \frac{241.75}{270.36}$ = 2.89 years

Project B

Payback period = $2 + \frac{77.162}{135.18}$ = 2.57 years

Project B is better. Since, it has lower payback period.

(iii) Profitability Index = $\frac{\text{Present value of inflows}}{\text{Present value of outflows}}$

Project A

Profitability Index = $\frac{705.67}{535}$ = 1.32

Project B

Profitability Index = $\frac{598.018}{540}$ = 1.12

Project A is better. Since, it has higher Profitability Index.

2014 - Dec [3] Answer the question:

(b) (i) Lokesh Ltd. is considering buying a machine costing ₹ 15,00,000 which yields the following annual income:

End of year	1	2	3	4	5
Annual Income after Depreciation but before tax	3,50,000	3,72,000	3,10,000	1,75,000	1,10,000
P.V. factor at 12% of ₹1	0.893	0.797	0.712	0.636	0.567

Corporate tax rate applicable is 30%. Depreciation is on straight line basis for 5 years. There is no scrap value. Normal rate of return is 12%. Round off calculations to the nearest rupee and calculate:

(a) Pay-back period
(b) Discounted pay back period
(c) Net Present Value
(d) Profitability Index. **(8 marks)**

Answer:

Year	Profit before tax	Profit after tax	Cash inflows (PAT + Dep^n)	Cumulative Cash inflows	Discounting factors @ 12%	Present Value	Cumulative present value
1	3,50,000	2,45,000	5,45,000	5,45,000	0.893	4,86,685	4,86,685
2	3,72,000	2,60,000	5,60,400	11,05,400	0.797	4,46,639	9,33,324
3	3,10,000	2,17,000	5,17,000	16,22,400	0.712	3,68,104	13,01,428
4	1,75,000	1,22,500	4,22,500	20,44,900	0.636	2,68,710	15,70,138
5	1,10,000	77,000	3,77,000	24,21,900	0.567	2,13,759	17,83,897

1. Pay-back period = 2 + 394600/517000= 2.76 years
2. Discounted pay-back period = 3 + 198572/268710 = 3.74 years

3. Net present value = Present value of cash inflows -Present value of cash outflows
   = 17, 83,897 – 15,00,000 = ₹ 2,83,897
4. Profitability index = Present value of cash inflows/Present value of cash outflows
   = 17, 83,897 /15,00,000 = 1.19

Note:

$$\text{Depreciation} = \frac{\text{Cost - Scrap value}}{\text{Life}} = \frac{15,00,000 - 0}{5} = ₹\ 3,00,000$$

2015 - June [III] (b) (i) Annu Ltd. is examining two mutually exclusive investment proposals. The management uses Net Present Value Method to evaluate new investment proposals. Depreciation is charged using Straightline Method. Other details relating to these proposals are:

Particulars	Proposal X	Proposal Y
Annual Profit before tax (₹)	13,00,000	24,50,000
Cost of the Project (₹)	90,00,000	1,80,00,000
Salvage Value (₹)	1,20,000	1,50,000
Working Life	4 years	5 years
Cost of capital	10%	10%
Corporate Tax Rate	30%	30%

The present value of ₹ 1 at 10% discount rates at the end of first, second, third, fourth and fifth year are 0.9091; 0.8264; 0.7513; 0.683; and 0.6209 respectively.

You are required to advise the company on which proposal should be taken up by it. **(8 marks)**

Answer:

	Proposal X (₹)	Proposal Y (₹)
EBIT	13,00,000	24,50,000
Less: Tax@30%	3,90,000	7,35,000
EAT	9,10,000	17,15,000
Add: Depreciation	22,20,000	35,70,000
Cash inflow (a)	31,30,000	52,85,000

Present Value annuity factor @10% (b)	3.1698	3.7907
Present Value of Cash inflow (a) × (b)	99,21,474	2,00,33,850
Add: Present value of salvage value:		
Proposal X: 1,20,000 × 0.683	81,960	-
Proposal Y: 1,50,000 × 0.6209	-	93,135
Total Present Value	1,00,03,434	2,01,26,985
Less: Initial Outflow	90,00,000	1,80,00,000
Net Present Value	10,03,434	21,26,985

Working note:

	x	y
Depreciation		
Cost	₹ 90,00,000	₹ 1,80,00,000
Less: Salvage Value	₹ 1,20,000	₹ 1,50,000
	₹ 88,80,000	₹ 1,78,50,000
Working Life	4 year	5 year
Depreciation per Annum	₹ 22,20,000	₹ 35,70,000

Advise: Annualized Net Present Value is more in case of Project Y hence, we should accept project Y.

2015 - Dec [III] (c) (2) M/s. Progressive Co. Ltd. is considering an investment in Machine X. The cash flows expected are as under:

Initial Outflow (in lakhs ₹)	Cash in flows (in lakhs ₹) at the end of				
Cost of Machine	1st year	2nd year	3rd year	4th year	5th year
30	–	10	15	12	16

The cost of capital is 10% p.a. PV of ₹ 1 at 10% from year one to five:

End of year	1	2	3	4	5
P/V factor:	·91	·83	·75	·68	·62

Advise the Management whether the machine may be bought using the Net Present Value Method. **(4 marks)**

Answer:

(₹ in lakhs)

Year	Cash Flow	PV Factor @ 10%	PV
0	(30)	1	(30)
1	-	0.91	-
2	10	0.83	8.3
3	15	0.75	11.25
4	12	0.68	8.16
5	16	0.62	9.92
NPV			**+ 7.63**

As the NPV is positive the machine should be purchased.

2016 - June [1] (I) Answer the following question.

(iv) B's cash flows are ₹ 1,000 on 01.07.2014; ₹ 1,100 on 01.07.2016; ₹ 1,000 on 01.07.2018; Considering annual rests, interest rate of 10% and using p.v. factor only up to one decimal, calculate the present value of his cash flows as on 01.07.2016. **(2 marks)**

Answer:

P.V. on 1.7.2016 = ₹ [(1.2 × 1,000) + (0.8 × 1,000) + (1 × 1,100)] = ₹ 3,100
or Simply, ₹ (1,000 + 1,000 + 1,100) = ₹ 3,100
(Since the Cash Flows are equidistant and equal from the date of P.V., the undiscounted Cash Flows may be added. Alternatively, a student can do the above usual working.)

2016 - June [7] (a) MN Ltd. wishes to evaluate two mutually exclusive proposals to acquire a machine. Machines M and N are being considered, each costing ₹ 2,00,000 and having an estimated life of 5 years and 4 years respectively. Both have nil salvage value. The anticipated cash inflows after adjustment of taxes for M and N are given below:

End of Year	Machine M	Machine N
1	70,000	1,00,000
2	60,000	90,000
3	60,000	80,000

4	50,000	40,000
5	90,000	Nil

Find the accounting rate of return and net present value for both the machines and advise MN Ltd. which machine should be bought. The required rate of return is 10% p.a.

Present Value factor for 10%:

End of Year	1	2	3	4	5
	.909	.826	.751	.683	.621

(8 marks)

Answer:

Ranking of Proposals:

Year	Cash Inflow		P.V. Factor	Total P.V.	
	M (₹)	N (₹)	(10% p.a.)	M (₹)	N (₹)
1	70,000	1,00,000	0.909	63,630	90,900
2	60,000	90,000	0.826	49,560	74,340
3	60,000	80,000	0.751	45,060	60,080
4	50,000	40,000	0.683	34,150	27,320
5	90,000	-	0.621	55,890	-
				2,48,290	2,52,640
Less: Cash Outflow				2,00,000	2,00,000
Net P.V.				**48,290**	**52,640**

Average Rate of Return:

$$\frac{\text{Average Profit}}{\text{Average Investment}} \times 100$$

Note: [For evaluation of ARR the average investment has been taken at half of the initial cost for all the two machines]

M = 70,000 + 60,000 + 60,000 + 50,000 + 90,000 = 3,30,000 ÷ 5 = ₹ 66,000
N = 1,00,000 + 90,000 + 80,000 + 40,000 = 3,10,000 ÷ 4 = ₹ 77,500

M ARR = $\frac{\text{AV Profit}}{\text{AV Investment}} \times 100$

= Average Cash-in-flow-Depreciation

= $\frac{66,000 - 40,000}{1,00,000} \times 100$ = 26%

N = $\frac{77,500 - 50,000}{1,00,000} \times 100$ = 27.5%

Rank: Machine 'N' to be selected under both the methods.

2016 - Dec [7] (a) A company is considering the purchase of a stapler manufacturing machine. Two mutually exclusive machines, A and B are being evaluated. Relevant information is given below:

Particulars	Machine A	Machine B
Cost of the machine (₹)	10,00,000	15,00,000
Life in years	5	5
Salvage value (₹)	20,000	40,000
Cost of production per stapler (excluding depreciation)	30	28

Other Information:

The staplers can be sold at ₹ 40 each. Depreciation is based on cost net of residual value over the life of the machines on a straight line basis. Assume that taxes and operating cash flows occur at the end of the year and that salvage value is also taxed at the end of the 5th year. Assume 50% tax rate. Use 12% discount rate and P.V. factors with decimal places as given.

Present your calculations up to the nearest rupee.

Production volume = 1,00,000 units annually.

You are required to evaluate the proposals using NPV method, showing the discounted cash flows for each of the machines and advise from a financial perspective on the choice of a suitable alternative.

Do you feel the NPV would be the ideal measure in this case to take the decision?

End of year	1	2	3	4	5	6	7	8	9
P.V. factor @12%	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361

(10 marks)

Answer:

Details	Machine A	Machine B	Working Notes
Revenue ₹/unit	40	40	
Cost excluding Depreciation	30	28	
Cash Profit	10	12	
Tax (50 %)	5	6	
Cash profit per unit after tax	5	6	
Cash profit for 1,00,000 units p.a.	5,00,000	6,00,000	
Depreciation Shield	98,000	1,46,000	50%(10,00,000-20,000)/5 50%(15,00,000-40,000)/5 (Cost less salvage value over 5 years)
Annual Cash Inflows	5,98,000	7,46,000	
P.V. factor yr 1 to 5 annuity	3.605	3.605	
P.V. of annual cash inflows	21,55,790	26,89,330	
Discounted Salvage value after tax at the end of year 5	5,670	11,340	20,000 × .5 × .567 40,000 × .5 × .567
P.V. of inflows	21,61,460	27,00,670	

P.V. of Outflows = Initial outlay	10,00,000	15,00,000	
Net Present Value (NPV)	+11,61,460	+ 12,00,670	
Conclusion: As per NPV method, B is preferable. NPV is not the best method in this case since B's NPV are only marginally higher than A's, whereas initial outlay is 1.5 times that of A.			

Note: The question is specific that nearest rupee is used, discount factors only as given be taken and each proposal is to be presented. Hence alternative solutions where figures vary due to being in rupees in lacs or p.v. factors being different or incremental approach are not acceptable.
Even if a student works out cash flows showing profit after adding back depreciation instead of cash profits + shield on depreciation, he will have to arrive at the annual cash inflows.

2017 - June [9] (b) FB Chemical Ltd. has three potential projects, all with an initial cost of ₹ 20,00,000 and estimated life of five years. The capital budget for the year will only allow the company to accept one of the three projects. Given the discount rates and the future cash flows of each project, which project should the company accept?
Project 1 has an annual cash flow of ₹ 5,00,000 and discount rate of 6%
Project 2 has an annual cash flow of ₹ 6,00,000 and discount rate of 9%
Project 3 has the following cash inflow and discount rate of 15%

Year	1	2	3	4	5
Cash Inflows ₹	10,00,000	8,00,000	6,00,000	2,00,000	1,00,000

(6 marks)

Answer:
NPV = PV of Inflow - PV of outflow
Project 1's NPV = ₹ [5,00,000 (.943+.889+.839+.792+.747) - 20,00,000] = ₹ 1,05,000
Project 2's NPV = ₹ [6,00,000 (.917+.841+.772+.708+.649) - 20,00,000] = ₹ 3,32,200
Project 3's NPV = ₹ 20,31,900 - 20,00,000 = 31,900.
Project 2 should be accepted as its NPV is maximum.

2017 - Dec [9] (b) ZZZ Co. has four potential projects all with an initial cost of ₹ 15,00,000. The capital budget for the year will only allow the company to take up only one of the three projects. Given the discount rates and the future cash flows of each project, which project should they accept?

PROJECT	Annual Net Cash Flows per year for five years (₹)	Discount Rates
A	3,50,000	4%
B	4,00,000	8%
C	5,00,000	10%

(5 marks)

Answer:
Cash Outflow = 15,00,000
Life of Project = 5 years

1. **Calculation of NPV of Project A**
   NPV = P.V. of CI – P.V. of cash outflow
   P.V. of CI = CI × P.V. of Annuity factor for 5 years @ 4%
   = 3,50,000 × 4.452
   = 15,58,200
   NPV = 15,58,200 – 15,00,000
   = ₹ 58,200
2. **Calculation of NPV of Project B**
   P.V. of CI = CI × PV of Annuity factor for 5 years @ 8%
   = 4,00,000 × 3.993
   = 15,97,200
   ∴ NPV = 15,97,200 – 15,00,000
   = ₹ 97,200
3. **Calculation of NPV of Project C**
   P.V. of CI = CI × PV of Annuity factor for 5 years @ 10%
   = 5,00,000 × 3.791
   = 18,95,500
   NPV = 18,95,500 – 15,00,000
   = ₹ 3,95,500

Recommendation : The management of ZZZ Company may be advised to select Project C as its NPV is more than NPV of Project A&B.

2018 - June [9] (b) ANURAG MILLS LTD. has number of machines that were used to make a product that the firm has phased out its operations. An existing machine was originally purchased six years ago for ₹ 5,00,000 and is being depreciated by the straight line method: its remaining useful life is 4 years. No salvage value is expected at the end of the useful life. It can currently be sold for ₹ 1,50,000. The machine can also be modified to produce another product at a cost of ₹ 2,00,000. The Modifications would not affect the useful life, or salvage value and would be depreciated using the straight line method.

If the firm does not modify the existing machine, it will have to buy a new machine at a cost of ₹ 4,40,000 (no salvage value) and the new machine would the depreciated over 4 years. The engineers estimate that the cash operating costs with the new machine would be ₹ 25,000 per year less than with the existing machine. Cost of Capital is15 per cent and Corporate Tax Rate is 35 per cent.

Advice The Company whether the new machine should be bought, or the old equipment modified. Assume straight line method of depreciation for tax purposes and loss on sale of existing machine can be claimed as short-term capital loss in the current year itself.

[Given : PVIFA (15% 4 year) = 2.855] **(6 marks)**

Answer:

Cash Outflows:

Particulars	₹
Price of new machine	4,40,000
Less: Sale proceeds of existing machine	1,50,000
Less: Tax savings on loss of the sale of existing machine [0.35 × (₹ 2,00,000, Book Value – ₹ 1,50,000, Sale Value)]	17,500
Less: Modifications avoided if the new machine is bought	2,00,000
Net Cash Outflows	72,500

Cash Inflows (annual savings):

Particulars	Amount Before Tax (₹)	Amount After Tax (₹)
Cost savings	25,000	16,250
Differential depreciation (1,10,000 – 1,00,000)	10,000	3,500
Total Cash advantage per year		19,750
(x) PV Factor		(x) 2,855
PF of future savings from buying new machine		56,386
Cash flow required		72,500
Negative PV favouring modifying machine		(16,114)

Recommendation: The old machine should be modified.

2018 - Dec [9] (b) ZENITH LTD. is faced with the problem of choosing between two mutually exclusive projects A and B. Project A requires a cash outlay of ₹ 10,00,000 and cash running expenses of ₹ 3,50,000 per year. On the other hand, Project B will cost ₹ 15,00,000 and require cash running expenses of ₹ 2,00,000 per year. Both the projects have an eight-year life. Project A has a salvage value of ₹ 40,000 and Project B has a salvage value 1,40,000. The company's tax rate is 50% and it has a 10% required rate of return.

Required:

Assuming depreciation on straight line basis and that there is no funds constraint for the company, Ascertain which project should be accepted.

[Given: PVIFA (10%, 8 years) = 5.335 and PVIF (10%, 8 years) = 0.467]

Note: Solve the problem by an incremental cash flow approach.

(7 marks)

Answer:

Zenith Ltd.
Financial Evaluation of Project A and Project B

	Project A (₹)	Project B (₹)	Incremental Cash flows (₹)
Cash outflows	1,00,00,000	1,50,00,000	5,00,000
Cash running expenses	3,50,000	2,00,000	1,50,000
Depreciation	1,20,000	1,70,000	(50,000)
Total saving			1,00,000
Less: Tax @50%			(50,000)
Saving after Tax			50,000
Add: Depreciation (not being cash outflow)			50,000
Net Saving			1,00,000
Salvage value at the end of year 8	40,000	1,40,000	1,00,000
Present value of annual saving for 8 years = PV of annuity × net savings for 8 years = 1,00,000 × 5.335 Present value of incremental salvage value at end of year 8			5,33,500
= 0.467 × 1,00,000			46,700
Total			**5,80,200**
Less: Cash outflow			

(incremental)			5,00,000
Net present value (incremental)			80,200

Recommendation:
Since Project B has positive NPV over and above the NPV of Project A, Project B is recommended for acceptance.
Note: Working for depreciation:
Project A: (₹ 10,00,000 – 40,000)/8 years = ₹ 1,20,000
Project B: (₹ 15,00,000 – 1,40,000)/8 years = ₹ 1,70,000.

2019 - June [9] (b) ELROND LTD. (EL) has just installed MACHINE A at a cost of ₹ 2,00,000. This machine has 5 years life with no residual value. The annual volume of production is estimated at 1,50,000 units, which can be sold at ₹ 8 per unit. Annual operating costs are estimated at ₹ 2,00,000 (excluding depreciation) at this output level. Fixed costs are estimated at ₹ 4,50,000 per annum for the same level of production.
The company has just come across another model called MACHINE B capable of giving the same output at an annual operating costs of ₹ 1,50,000 (excluding depreciation). There will be no change in fixed costs. Capital cost of this machine is ₹ 2,50,000 and the estimated life is 5 years with no residual value.
The company has an offer for sale of MACHINE A at ₹ 1,00,000. But the cost of dismantling and removal will amount to ₹ 30,000. As the company has not yet commenced operation, it wants to sell MACHINE A and purchase MACHINE B.
ELROND LTD. will be zero-tax company for 7 years in view of several incentives and allowances available. The cost of capital is 14%.
Required:
Based on the NPV Criterion, advise the Company whether it should opt to replace MACHINE A by installing MACHINE B.
[Given : PVIFA (14%, 5 years) = 3.433 and PVIF (14%, 5 years) = 0.519]
(Solve the problem by an incremental cash flow approach.) **(6 marks)**

Answer:

Appraisal of Replacement Decision Under NPV Method:

Calculation of Present Value of Net Cash outflow: **(Amount in ₹)**

Cost of Machine B		2,50,000
Less: Sale proceeds of Machine A	1,00,000	
Cost of dismantling and removal	(30,000)	(70,000)
Net outflow		1,80,000

Calculation of Present Value of Incremental Cash inflow:

(Amount in ₹)

Particulars	**Machine - A**	**Machine - B**	**Incremental**
Sales P.A (units)	1,50,000	1,50,000	–
Sales P.A (1,50,000 × 8)	12,00,000	12,00,000	
Less: Expenditures :			
Operating Cost	2,00,000	1,50,000	50,000
Fixed Cost	4,50,000	4,50,000	–
Net Cash inflow			50,000
Present Value	50,000×3.433		1,71,650
Less: Out flow			(1,80,000)
Net Present Value			(8,350)

Decision:

AS NPV of Machine B is negative, the replacement decision is not financially feasible. So the Company should not replace the Machine A.

2019 - Dec [9] (b) MONPTEK LTD. wants to replace its old machine with a new automatic machine. Two models A and B are available at the same cost of ₹5 lakhs each. Salvage value of the old machine is ₹1 lakh. The utilities of the existing machine can be used if the company purchases A. Additional cost of utilities to be purchased in that case is ₹1 lakh. If the company purchases B then all the existing utilities will have to be replaced with new utilities costing ₹1.8 lakhs. The earnings after taxation are expected to be:

Year	(cash in-flows of)		
	A ₹	B ₹	P.V. Factor @ 15%
1	1,00,000	2,00,000	0.87
2	1,50,000	2,10,000	0.76
3	1,80,000	1,80,000	0.66
4	2,00,000	1,70,000	0.57
5	1,70,000	40,000	0.50
Salvage Value at the end of Year 5	50,000	60,000	

The targeted return on capital is 15%.

Based on Profitability Index Criterion, advise the company on which machine should be taken up by it. **(6 marks)**

Answer:

(i) Expenditure at year zero

Particulars	**Machine A (₹) in Lakh**	**Machine B (₹) in Lakh**
Cost of Machine	5.00	5.00
Cost of Utilities	1.00	1.80
Salvage of old machine	(1.00)	(1.00)
	5.00	**5.80**

(ii) Discounted value of Cash inflows

Amount (₹) in Lakh

Year	**NPV Factor @ 15%**	**Machine A**		**Machine B**	
		Cash inflows	**Discounted value of inflows**	**Cash inflows**	**Discounted value of inflows**
1	0.87	1.00	0.87	2.00	1.74
2	0.76	1.50	1.14	2.10	1.60
3	0.66	1.80	1.19	1.80	1.19
4	0.57	2.00	1.14	1.70	0.97
5	0.50	1.70	0.85	0.40	0.20

Salvage	0.50	0.50	0.25	0.60	0.30
Present value of Net Cash Inflow			**5.44**		**6.00**

Profitability Index $= \frac{\text{Sum of PV of net Cash Inflow}}{\text{Initial Cash Outflow}}$

Machine A $= \frac{₹5.44 \text{ lakh}}{₹5.00 \text{ lakh}} = 1.088$

Machine B $= \frac{₹6\,00 \text{ lakh}}{₹5.80 \text{ lakh}} = 1.034$

Advice: Since the profitability Index is higher in the case of Machine A, it is better to choose Machine - A.

2021 - Dec [19] A project of ₹ 20,00,000 yielded annually profit of ₹ 3,00,000 after depreciation at 12.5% for 5 years and is subject to income tax at 50%, What will be the Pay Back Period ? **(1 mark) [Sec. B - SAQ]**

Answer :

5 years

2021 - Dec [1] MODERN ENT LTD is Considering the purchase of a new Computer System for its research and development Division, which would cost ₹ 35 Lakh. The operation and maintenance costs (excluding depreciation) are expected to be ₹ 7 lakh per annum. It is estimated that the useful life of the System would be 6 years, at the end of which the disposal value is expected to be ₹ 1 Lakh.

The tangible benefits expected from the System in the form of reduction in design and draftsmanship Costs would be ₹ 12 lakh per annum. The disposal of used drawing and drawing office equipment and furniture initially is anticipated to net ₹ 9 lakh.

As Capital expenditure in research and development, the proposal would attract a 100 percent write-off for tax purposes. The gains arising from disposal of used assets may be considered tax-free. The Corporate tax rate is 35%. The average cost of capital of the company is 12 per cent. Ignore tax on Salvage value.

(Calculations should be made upto three digits after decimal)

Given [PVIF (12%, 6 years) = 0.507 and PVIFA (12%, 6 years) = 4.111]

Based on above information you are required to answer the following questions [Using NPV Method] :

(i) What is the amount of Incremental Cash out flows from the new computer System ? **(1 mark)**

(ii) What is the amount of Total Present value of Future Cost saving from buying Computer System ? **(2 marks)**

(iii) The Net Present value (NPV) (incremental) from the Computer System will be_____. **(2 marks)**

(iv) As a financial adviser, what would be your recommendation for the company in respect of the Purchase of Computer System ? **(1 mark) [Sec. C Three LAQ]**

Answer:

(i) Incremental Cash Outflows: = (₹ 26 lakh)

(ii) The total P.V. of future cost Savings: = ₹ 13.361 lakh

(iii) The Net Present Value (NPV) (incremental): = (1.193) lakh

(iv) Recommendations:

Since Net present value is negative, the proposal is not financially viable. The company should not consider to purchase a new computer system.

NPV Analysis for MODERN ENT LTD.

This document provides a step-by-step calculation of the Net Present Value (NPV) for MODERN ENT LTD's proposal to purchase a new computer system for its research and development division.

Calculate Incremental Cash Outflows

The initial cash outflows include:

Cost of the new computer system: ₹ 35 lakh

Disposal value of used drawing and drawing office equipment and furniture: 9 lakh

Since the disposal value is a cash inflow, it reduces the initial cash outflows.

Incremental Cash Outflows = ₹ 35 lakh - ₹ 9 lakh = ₹ 26 lakh.

2022 - Dec [8] (b) Given below are the data on a capital project 'M':

Annual Cost Saving	₹ 60,000	Profitability index	1.064
Useful Life	4 years	Salvage value	0
Internal Rate of Return	15%		

You are required to calculate for this project M :

(i) Cost of Project
(ii) Payback Period
(iii) Cost of Capital
(iv) Net Present Value

Given the following table of discount factors:

Discount Factor	15%	14%	13%	12%
1 year	0.869	0.877	0.885	0.893
2 years	0.756	0.769	0.783	0.797
3 years	0.658	0.675	0.693	0.712
4 years	0.572	0.592	0.613	0.636
	2.855	2.913	2.974	3.038

(6 marks)

Answer:

1. As IRR is 15%
   ∴ Discounted cash inflows @ 15% = Initial investment in the product.
   So, Cost of Product = Initial cost of investment = $CFAT_{p.a.}$ × Commutative PVF @ 15% for 4 year i.e. 60,000 × 2.855 = ₹ 1,71,300
2. Pay Back Period = $\frac{\text{Initial investment}}{\text{CFAT per Annum}}$
   $= \frac{171}{\text{CFAT per Annum}}$
   $= \frac{1,71,300}{6,000}$
   = 2.855 years
3. Profitability Index = $\frac{\text{P.V. of C.I.}}{\text{P. of cashoutflow}}$
   $1.064 = \frac{\text{P.V. of.C.I.}}{1,71,300}$
   = 1,82,263
   P.V. of C.I. = $CFAT_{p.a.}$ × P.V.F. at K_O
   182263 = 60,000 × P.V.F. at K_O

∴ $K_O = \frac{1,82,263}{60,000} = 3.03$

From table given K_O = 12%

4. NPV = P.V. of C.I. – P.V. of cast outflow
   = 182263 – 1,71,300
   = ₹ 10,963

2023 - Dec [5] (a) Company A wants to invest in a project, the life of which is expected to be 4 years. The actual net profit is expected to be ₹ 20,000 after charging yearly depreciation of ₹ 16,000 in order to write-off the capital cost of ₹ 64,000. Out of the capital cost, ₹ 40,000 is payable immediately (Year 0) and the balance in the next year end. Stock amounting to ₹ 12,000 (to be invested in year 0) will be required throughout the project and for debtors a further sum of ₹ 16,000 will have to be invested at the end of year 1. The working capital will be recouped at the end of year 5. It is expected that the machinery will fetch a scrap value of ₹ 4,000 at the end of 4th year. Income tax is payable @ 40% and the Depreciation equals the taxation writing down allowances of 25% per annum. Income tax is paid after 9 months after the end of the year when profit is made. The residual value of ₹ 4,000 will also bear tax @ 40%. Since the tax paid is in the next year and the working capital is recouped in the fifth-year cash inflow, calculations will be required up to 5 years.

Taking discount factor of 10%, calculate NPV of the project and give your comments regarding its acceptability.

PV of ₹ 1.00 at 10% p.a.

Year	1	2	3	4	5
PV	0.9091	0.8264	0.7513	0.6830	0.6209

(7 marks)

Answer:

Calculation of NPV of Project

Particulars	Year	Year	Year	Year	Year	Year
	0	1	2	3		5
Capital expenditure	(40,000)	(24,000)				

Working Capital	(12,000)	(16,000)				
Net Profit		20,000	20,000	20,000	20,000	
Depreciation Add Bank		16,000	16,000	16,000	16,000	
Tax			(8,000)	(8,000)	(8,000)	(9,600)
Salvage value					4,000	
Recovery of working capital						28,000
Net Cash Inflow	(52,000)	(4,000)	28,000	28,000	32,000	18,400
Discount Factor @ 10%	1.00	0.9091	0.8264	0.7513	0.6830	0.6209
Present Values	(52,000)	(3,636)	23,139	21,036	21,856	11,425

Since, NPV is ₹ 21,820, proposal should be accepted.

2023 - Dec [5] (b) A company has to replace one of its machines, which has become unserviceable. Two options are available to the company:

(i) A more expensive machine (Premium) with 12 years life.

(ii) A less expensive machine (Standard) with 6 years life.

If Standard machine is chosen, it will be replaced at the end of 6 years by another Standard machine. The pattern of maintenance, running costs and prices is as under:

Particulars	Premium (₹)	Standard (₹)
Purchase price	40,00,000	28,00,000
Scarp value at end of life	6,00,000	6,00,000
Overhauling is due at the end of	8th Year	4th Year
Overhauling cost	8,00,000	4,00,000
Annual repairing expenses	4,00,000	5,60,000

Cost of capital is 14%.

You are required to recommend which of the machines should be purchased.

Given, Present Value Interest Factor, PVIF (14%).

Year	4	6	8	12
PV Factor	0.5921	0.4556	0.3506	0.2076

Present Value Interest Factor for an Annuity, PVIFA (14%)

Year	1 to 6 Years	1 to 12 Years
PV Factor	3.8899	5.6600

(7 marks)

Answer:

Machine Premium (12 years life)

Particulars	Year	Cost (₹)	Discount Factor	Present Value (₹)
Purchase Price	0	40,00,000	1.00	40,00,000
Overhead Cost	8	8,00,000	0.3506	2,80,480
Annual Repairs	1 - 12	4,00,000	5.66	22,64,000
Scrap Value	12	6,00,000	0.2076	(1,24,560)
Total NPV of Outflow				(64,19,920

Machine Standard (6 years life)

Particulars	Year	Cost (₹)	Discount Factor	Present Value (₹)
Purchase Price	0	28,00,000	1.00	28,00,000
Overhead Cost	4	4,00,000	0.5921	2,36,840
Annual Repairs	1 - 6	5,60,000	3.8890	21,77,840
Scrap Value	6	6,00,000	0.4556	(2,73,360)
Total NPV of Outflow				49,41,320

Annualized Value:

Machine Premium = $\frac{64,19,920}{5.66}$ = 11,34,261

Machine Standard = $\frac{49,41,320}{3.889}$ = 12,70,589

As annualized value is less for machine premium, existing machine should be replaced with machine premium.

2024 - June [5] (a) Boldwire Co. Ltd. produces a sophisticated integrated circuit chip. Last year, the research and development department of the company designed and prototyped an improved model of the chip. The marketing department of the company made a forecast that it would be able to sell 8,000 units of the new chip in the next year.

However, additional investment would be required to buy and install new machinery for production. The cost of the new machinery would be ₹ 25,00,000 and that would have an economic life of 4 years. The salvage value of the machine at the end of four years would be Nil. The marketing department also informed that during the period of four years there would be certain advertising and promotional expenditure necessary for selling the new chips. The details of such expenses are given below:

Year	1	2	3	4
Expenses (₹)				
Advertisement	1,00,000	75,000	60,000	30,000
Promotion	50,000	75,000	90,000	1,20,000

The variable costs of producing and selling each unit of the new chip would be ₹ 250. Additional fixed operating costs to be incurred because of this new product are budgeted at ₹ 75,000 per year. A discounted return of 15% (after tax) on investments in the new product is contemplated by the management. Advise as to what should be the selling price per unit of the new chip that may be fixed with a view to obtaining the desired return on investment. The tax rate of the company is 40% and depreciation is on straight line basis.

(**Note:** The present value of annuity of ₹ 1.00 received or paid throughout the period of four years in the future at 15% is 3.0079) **(7 marks)**

Answer:

Let Selling Price be ₹ x per unit.

Then,

Sales = ₹ 8,000x

Variable Cost = 8,000 × 250 = ₹ 20,00,000

Contribution = 8,000x – 20,00,000

Additional Fixed Cost = ₹ 75,000 per year

Advertisement and Promotion expenses = ₹ 1,50,000

Depreciation = ₹ 6,25,000

PBT = 8,000x – 20,00,000 – 75,000 – 1,50,000 – 6,25,000 = 8,000x – 28,50,000

Tax @ 40% = 3,200x – 11,40,000

PAT = 4,800x – 17,10,000

Cash Flow = PAT + Depreciation

= 48,00x – 17,10,000 + 6,25,000

= 4,800x – 10,85,000

NPV = (4,800x – 10,85,000) × 3.0079 – 25,00,000 = 0

= 14,437.92x – 32,63,572 – 25,00,000 = 0

x = ₹ 399.20

2024 - June [5] (b) C Ltd. is considering a proposal of installing a drying equipment. The equipment would involve a cash outlay of ₹ 12,00,000 and net working capital of ₹ 1,60,000. The expected life of the project is 5 years without any salvage value. Assume that C Ltd. is allowed to charge depreciation on straight-line basis for income-tax purpose.

The estimated before-tax cash inflows are given below:

Year	1	2	3	4	5
Before-tax cash-inflows (₹' 000)	480	550	420	360	320

The applicable income-tax rate for C Ltd. is 35%. C Ltd.' s opportunity cost of capital is 12% p.a. The management has determined that acceptable payback period and discounted payback period for the equipment are 3.6 years and 4.5 years respectively. Advise the management on the proposal based on payback period and discounted payback period.

Year	1	2	3	4	5
PVIF (12%)	0.893	0.797	0.712	0.636	0.567

(7 marks)

Answer:

Year	CFAT (₹)	Cumulative CFAT (₹)
1	3,96,000	3,96,000
2	4,41,500	8,37,500
3	3,57,000	11,94,500

4	3,18,000	15,12,500
5	4,52,000	19,64,500

Pay back (PB) period:

The recovery of investment (₹ 13,60,000) falls between the third and fourth years.

Therefore, the PB is 3 years plus a fraction of 4th year.

The fractional value is = 0.52.

Thus, the PB period is 3.52 years.

Advice: Since, the target PBP is higher, the project is acceptable.

Year	CFAT (₹)	Total PV (₹)	Cumulative PV (₹)
1	3,96,000	3,53,628	3,53,628
2	4,41,500	3,51,876	7,05,504
3	3,57,000	2,54,184	9,59,688
4	3,18,000	2,02,248	11,61,936
5	4,52,000	2,56,284	14,18,220

Discounted Pay back (DPB) period:

Discounted PB period is 4 years plus a fraction of 5th year.

The fractional value is = 0.77

Thus, the discounted PB period is 4.77 years.

Advice: Since, the target DPBP is lower, the project is not acceptable.

2024 - Dec [5] (a) From the following information, calculate Net Present Value of the following business proposal and suggest whether the proposal should be accepted or rejected:

Initial Investment in Fixed Assets	₹5,00,000
Initial Investment in Working Capital	₹1,00,000
Salvage Value of Fixed Assets after 3 years	₹2,00,000
Annual Cash inflows before tax	₹3,00,000
Income tax rate (on profit as well as capital gain)	30%
Cost of capital	18%

Depreciation is to be charged under WDV method @40%.

Present Values of Re. 1.00 at 18% are as follows:

Year	1	2	3
PVIF	0.8475	0.7182	0.6086

(7 marks)

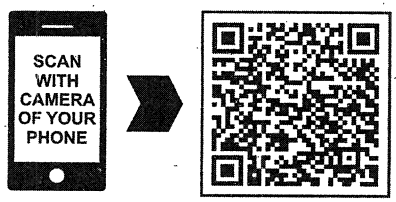
2024 - Dec [5] (b) A project, requiring initial investment of ₹ 5,00,000 in creating a fixed facility, ensures net incremental inflow of ₹ 1,50,000 per annum before deduction of depreciation and tax. The fixed facility is likely to have an economic life of five years with scrap value of ₹ 1,00,000 at the end. Depreciation is allowed on straight-line basis and marginal tax rate is 40%. The cost of capital is 10% p.a.

You are required to estimate the IRR of the project and advise the management on its acceptability.

Consider the following Present Value table:

Year	1	2	3	4	5
PVIF @ 10%	0.909	0.826	0.751	0.683	0.621
PVIF @ 11%	0.901	0.812	0.731	0.659	0.593
PVIF @ 12%	0.893	0.797	0.712	0.636	0.567

(7 marks)



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Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER

6 Working Capital Management

THIS CHAPTER INCLUDES

1. Introduction to Working Capital Management
   - Theoretical Underpinnings
   - Planning of Working Capital
   - Working Capital Cycle and Cash Cycle
   - Estimation of Working Capital Requirement
2. Receivable Management
3. Payable Management
4. Inventory Management
5. Management of Cash and Cash Equivalents
   - Motives of holding Cash
   - Objectives of Cash Management
   - Models of Cash Management
6. Financing Working Capital
   - Monthly Cash Flow Forecast and Analysis
   - Maximum Permissible Bank Finance (MPBF) Calculation
   - Commercial Paper
   - Export Financing– Pre-shipment and Post-shipment Packing Credit

QUICK LOOK — ***Weightage Analysis***

Repeatedly Asked Questions

2018 - June [10] (b),
2019 - Dec [10] (b)

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2015 - June [III] (b) (ii) Write short notes on:
(a) Letter of credit **(4 marks)**
Answer:
Letter of Credit: A letter of credit is an arrangement whereby a bank helps its customer to obtain credit from its (customer's) suppliers. When a bank opens a letter of credit in favour of its customer for some specific purchases, the bank undertakes the responsibility to honour the obligation of its customer, should the customer fails to do so.

2018 - June [10] Write short notes on the following:
(b) Determinants of Working Capital **(4 marks)**
Answer:
Some of the most determinants of working capital are:
1. Nature of business
2. Length of period of manufacture
3. Volume of business
4. The Proportion of the cost of raw materials to total cost
5. Use of Manual Labour or Mechanisation
6. Need to keep large stocks of raw materials of finished goods
6. Turnover of working capital
8. Terms of Credit
9. Seasonal Variations
10. Requirements of Cash and
11. Other Factors.

2018 - Dec [10] Write short notes on the following:
(iv) Danger of inadequate amount of working capital **(4 marks)**

Answer:
Danger of inadequate amount of working capital:
(a) Inadequate amount of working capital makes it difficult to implement operating plans and for achieving the firm's profit target.
(b) It stagnates growth. It will become very difficult to the firm to undertake profitable ventures due to inadequacy of working capital funds.
(c) The firm may not be in a position to meet its day-to-day current obligations, leading to operational inefficiencies.
(d) The ROI falls due to under utilisation of fixed assets and other capabilities of the business concern.
(e) Credit facilities in the market will be lost due to faculty working capital.
(f) The reputation and goodwill of the firm will also be impaired considerably.

2019 - Dec [10] Write short note on the following:
(b) Determinants of Working Capital. **(4 marks)**
Answer:
Please refer 2018 - June [10] (b) on page no. 207

DESCRIPTIVE QUESTIONS

2015 - June [III] (a) (ii) List the usual forms of bank credit available in India for a business. **(4 marks)**
Answer:
The usual form of bank credit is as follows:
1. Overdraft
2. Cash Credit
3. Letter of Credit
4. Working Capital Term Loan
5. Funded Interest Term Loan
6. Bills Purchased and Bills Discounting.

PRACTICAL QUESTIONS

2013 - Dec [9] (a) From the following information, work out the average amount of working capital requirement:

	Average period of credit (in weeks)	Estimate for the year (52 weeks) (in ₹)
Purchase of material	6	26,00,000
Wages	1½	20,80,000
Rent	26	1,00,000
Other overheads	8	10,40,000
Salaries	4	13,00,000
Credit sales	8	52,00,000

Average amount of holding of stocks and WIP is ₹ 4,00,000 and there should be cash balance of ₹ 50,000. Assume that all expenses and income are made evenly throughout the year. **(8 marks)**

Answer:

Particulars	**Estimate per annum**	**Estimate per week**	**Avg. Credit period**	**Working capital requirement (₹)**
Purchase of raw material	26,00,000	50,000	6	3,00,000
Wages	20,80,000	40,000	1.5	60,000
Rent	1,00,000	1,92,308	26	50,000
Other overheads	10,40,000	20,000	8	1,60,000
Salaries	13,00,000	25,000	4	1,00,000
Total Current liabilities (A)				6,70,000
Current assets				
Credit Sales	52,00,000	1,00,000	8	8,00,000
Inventory Including WIP				4,00,000
Cash Balance				50,000
Total Current assets (B)				12,50,000
Net working Capital Requirement (Avg.) = (B) - (A)				**5,80,000**

2014 - June [9] (a) Z Ltd's cost sheet gives you the following information:

Items of Cost/Revenue	₹/unit
Raw Material Cost	117
Direct Labour	49
Factory Overheads (includes depreciation at ₹ 18 per unit at budgeted level of activity)	98
Total Cost per unit	264
Profit	36
Selling Price per unit	300

The following information is also available:

Average raw material in stock	4 weeks
Average Work-in-progress stock (Material 80% complete, Labour and overheads - 60% complete)	2 weeks
Credit period allowed to debtors	6 weeks
Credit availed from suppliers	8 weeks
Time lag in payment of wages	1 week
Time lag in payment of overheads	2 weeks

The company sells one-fifth of its output against cash and the remaining is credit sale. Cash balance is maintained at ₹ 2,50,000. Budgeted level of activity is 78,000 units. Production, wages and overheads may be taken as being carried out evenly throughout the year. Debtors may be valued at sales value.

Prepare a statement showing the item wise break up of the total working capital requirement needed to finance the budgeted level of activity. **(8 marks)**

Answer:

Budget production	78,000 units p.a.							
No. of weeks	52 p.a.							
Budgeted production	15,00 units per week							
	Stock	WIP	Finished Goods	Debtors	Cash Balance	Total	Creditors	Net WC
Raw Material	7,02,000	2,80,800	5,26,500	8,42,400		23,51,700	14,04,000	9 47,700
Direct Labour		88,200	2,20,500	3,52,800		6,61,500	73,500	5 88,000
Overheads(Cash)		1,44,000	3,60,000	5,76,000		10,80,000	2,40,000	8,40,000
Non Cash Exp/ Profit				3,88,800		3,88,800		3,88,800
Cash Balance					2,50,000	2,50,000		2,50,000
Total	7,02,000	5,13,000	11,07,000	21,60,000	2,50,000	47,32,000	17,17,500	30,14,500

Statement of Working Capital Requirement

Current Assets:	
Raw Material Inventory	7,02,000
WIP Inventory	5,13,000
Finish Goods Inventory	11,07,000
Sub total - Inventory	23,22,000
Sundry Debtors	21,60,000
Cash	2,50,000
Current Asset total	47,32,000
Less:	
Creditors for purchases	14,04,000
Wages payable	73,500
Overhead payable	2,40,000
Sub total- current liability	17,17,500
Working Capital = CA - CL	30,14,500

2014 - Dec [1] Answer the question:

(i) The proprietor's fund is ₹ 45,00,000 and ratio of fixed assets to proprietor's funds is 0.75. Find the amount of net working capital.

(2 marks)

Answer:

Proprietors fund	=	₹ 45,00,000
Fixed Assets to Proprietors Fund	=	0.75
Fixed Assets : Proprietors Fund	=	0.75
Fixed Assets: 45,00,000	=	0.75
Fixed Assets	=	33,75,000
Net Working Capital 45,00,000 - 33,75,000	=	₹ **11,25,000**

2014 - Dec [3] Answer the question:

(a) (i) From the following details, find out the working capital requirements of G. Ltd. on cash cost basis:

Sales (at 3 months' credit)	₹ 60,00,000
Material Consumed (Suppliers extend 2 months' credit)	₹ 18,00,000
Wages paid (one month in arrear)	₹ 11,40,000
Cash Manufacturing expenses outstanding at the year end (cash expenses are paid one month in arrear)	₹ 90,000
Total Administrative expenses (paid as above)	₹ 4,20,000
Sales Promotion expenses (paid one month in advance)	₹ 2,70,000

It keeps two months' stock of raw materials, one month's stock of finished goods and a cash balance of ₹ 2,00,000. There is no work-in-progress.

(8 marks)

Answer:

Current assets:	₹
Cash	2,00,000
Raw material (18,00,000/12 × 2)	3,00,000
Finished goods (40,20,000/12)	3,35,000

Debtors (47,10,000/12 × 3)	11,77,500
Sales promotion expenses (2,70,000/ 12)	22,500
Total	**₹ 20,35,000**

Current liabilities:	₹
Creditors (18,00,000/12 x 2)	3,00,000
Wages (11,40,000/12)	95,000
Manufacturing expenses	90,000
Admin. Expenses (4,20,000/12)	35,000
Total	₹ 5,20,000

Working capital requirement = Current assets – current liabilities
= 20,35,000 -5,20,000
= ₹ 15,15,000

Working Note:

Cost of production

	₹
Material used	18,00,000
Wages paid	11,40,000
Manufacturing Expenses (90,000 × 12)	10,80,000
Cash cost of production	40,20,000
Admin. Expenses	4,20,000
Sales promotion expenses	2,70,000
Total	47,10,000

2015 - June [I] (d) Average collection period is 2 months, Cash sales and average receivables are ₹ 5,00,000 and ₹ 6,50,000 respectively. Find the amount of total sales. **(2 marks)**

Answer:

Average collection period is 2 months

Cash Sales ₹ 5,00,000

Average Receivable ₹ 6,50,000

$$\text{Average collection period} = \frac{12}{\text{Debtors turnover}}$$

$$2 = \frac{12}{\text{Debtors turnover}}$$

Debtors turnover = 6

$$\text{Debtors turnover} = \frac{\text{Credit Sales}}{\text{Average Receivables}}$$

$$6 = \frac{\text{Credit Sales}}{6,50,000}$$

Credit Sales = ₹ 39,00,000

Total Sales = ₹ 39,00,000 + ₹ 5,00,000 = ₹ 44,00,000

2015 - June [III] (c) (ii) A company manufactures a small computer component. The component is sold for ₹ 1,000 and its variable cost is ₹ 700. The company sold on an average, 300 units every month in 2014-15. At present the company grants one month credit to its customers. The company plans to extend the credit to 2 months on account of which the following is expected:

Increase in sales is 25%

Increase in stock is ₹ 1,50,000

Increase in creditors ₹ 60,000

Should the company extend the credit terms if

(A) All customers avail of the extended period of 2 months.

(B) Only new customers avail of 2 months credit, assuming that the increase in sales is due to new customers.

The company expects a minimum rate of return of 30% on its investment. (Consider debtors at sales value) **(5 + 3 = 8 marks)**

Answer:

Statement showing the analyses of credit policy of the company:

	Option I All customers avail extended credit policy	**Option II Only new customers avail extended credit policy**

Profitability of additional sales:		
Present annual turnover (300 × 12 × 1,000)	36,00,000	36,00,000
Increase in turnover	9,00,000	9,00,000
	45,00,000	45,00,000
Revised sales		
PV Ratio $\frac{1,000 + 700}{1,000} \times 100$	30%	30%
Increase in contribution (a) (9,00,000 × 30%)	2,70,000	2,70,000
Cost of carrying additional debtors and stock:		
Proposed/Additional debtors	45,00,000 × $\frac{2}{12}$ = 7,50,000	90,00,000 × $\frac{2}{12}$ = 15,00,000
Less: Existing debtors 36,00,000 × $\frac{1}{12}$	3,00,000	–
Increase Debtors	4,50,000	1,50,000
Investment in additional debtors (variable cost being 70% of sales value)	3,15,000	1,05,000
Increase in stock	1,50,000	1,50,000
	4,65,000	2,55,000
Less: Increase in credit	60,000	60,000
Net additional investment in working capital	4,05,000	1,95,000
Expected returns (b)	1,21,500	58,500
Excess of profit over cost [(a) - (b)]	1,48,500	2,11,500

Suggestion: From the above statement company can extend credit policy in the both cases however, in view of higher profit second option is more profitable. Hence, company should adopt option II.

2015 - Dec [III] (c) (1) S. Ltd. produces a product with the following revenue-cost structure:

	₹ per unit
Raw Material	115
Direct labour	80
Overheads	37
Total cost	**232**
Profit	58
Selling Price	290

The following additional information is available:

(i) Average raw materials in stock: one month
(ii) Average work in-process: half-a-month – Raw Materials 100%, Direct labour 50%, Overheads 50% complete
(iii) Average finished goods in stock: one month
(iv) Credit allowed by suppliers: one month
(v) Credit allowed to debtors: two months
(vi) Time lag in payment of wages: half -a-month
(vii) Overheads: one month
(viii) One-fourth of sales are on cash basis
(ix) Cash balance is expected to be ₹ 1,65,000

You are required to prepare a statement showing the Working Capital requirement of the company to finance a level of activity of 60,000 units of annual output. Assume uniform production throughout the year. Wages and overheads accrue uniformly. Debtors are to be taken at cost.

(12 marks)

Answer:

Statement showing estimate of Working Capital

Particulars	₹	₹
Current Assets:		

Stock of Raw Material (60,000 units × 115 × 1/12)		5,75,000
Work-in-progress:		
Raw materials (60,000 units × 115 × 1/12 × ½)	2,87,500	
Direct labour (60,000 units x 80 x 1/12 × ½ × ½)	1,00,000	
Overheads (60,000 units × 37 × 1/12 × ½ × ½)	46,250	4,33,750
Stock of finished goods (60,000 units × 232 × 1/12)		11,60,000
Debtors (60,000 units × 3/4 × 232 × 2/12)		17,40,000
Cash balance		1,65,000
	(a)	40,73,750
Current Liabilities:		
Creditors for raw material (60,000 units × 115 × 1/12)		5,75,000
Creditors for wages (60,000 units × 80 × 1/12 × ½)		2,00,000
Creditors for overheads (60,000 units × 37 × 1/12)		1,85,000
	(b)	9,60,000
Net Working Capital	(a) – (b)	31,13,750
Total Working Capital Requirement		**31,13,750**

2016 - June [6] (b) A company plans to sell 48,000 units next year. The following information is given:

Raw Materials = ₹ 100 (per unit)
Manufacturing expense = ₹ 30 (per unit)
Selling Cost = ₹ 20 (per unit)
Selling Price = ₹ 180 (per unit)
Average Cash balance = ₹ 1,20,000

The duration at various stages is expected to be as follows:
Raw materials stage 2 months

Work in progress 1 month (Raw Materials 100% complete; Manufacturing 25% complete)
Finished goods 1 month
Debtors 1 month
Assume uniform sales of 4,000 units per month.
Estimate the gross working capital requirement taking
(i) Debtors at Cost;
(ii) Debtors at Sales Value. **(7 marks)**

Answer:

Statement of Gross Working Capital:

Item	Workings	Amount (₹)
Current Assets		
Raw Materials	4,000 × 2 × 100	8,00,000
WIP:		
Materials	4,000 × 100 × 100% × 1 month	4,00,000
Manufacturing Expenses	4,000 × 30 × 25% × 1 month	30,000
Finished Goods	4,000 × 130 × 1 month	5,20,000
Debtors (at cost)	4,000 × 150 × 1 month	6,00,000
Cash		1,20,000
Total Gross WC Requirement		24,70,000

If Debtors are at Sales, add profit of ₹ 30 per unit. Debtors will be 30 × 4,000 = ₹ 1,20,000 more than the above figure, i.e. ₹ 7,20,000
Then, Gross WC = ₹ 25,90,000.

2016 - Dec [8] (a) The following information is given:

Details	
Annual production	72,000 units
Raw Materials Inventory	2 months' consumption
Finished Goods Stock	3 months

Work-in-Progress (Raw Materials 100%; Conversion Costs 50% complete)	1 month
Debtors	3 months (sales value)
Creditors	2 months
Cash balance required	1,00,000
Assume: Sales, production, costs are uniform throughout the cycle.	
Other information:	
Selling Price ₹/unit	120
Raw Material	60% of selling price
Direct Wages	20% of selling price
Overheads (assume no depreciation)	10% of selling price

You are required to estimate the working capital requirement with a detailed break up of its constituents. **(10 marks)**

Answer:

Working Notes:

1. Production for the year 72,000 units
2. Production for the month - 6,000 units.

Particulars	(₹)
Selling price per unit	120
Raw material 60% of 120	72
Direct Wages 20% of 120	24
Overhead 10% of 120	12
Total Cost	108

Working Capital Requirements:

Particulars	Basis	Amount (₹)
Current Assets:		
Raw material in store	6,000 × 2 × 72	8,64,000
Work-in-process R.M.	6,000 × 1 × 72	4,32,000
Work-in-process Wages	6,000 × 1 × 24 × 50%	72,000
Work-in-process Overhead	6,000 × 1 × 12 × 50%	36,000
Finished Goods	6,000 × 3 × 108	19,44,000
Total Inventory		**33,48,000**
Debtors (at sales price)	6,000 × 3 × 120	21,60,000
Cash		1,00,000
Total current assets		**56,08,000**
Current Liabilities:		
Creditor	6,000 × 2 × 72	8,64,000
Total Current Liabilities		**8,64,000**

Working capital:

CA-CL = ₹ 56,08,000 – ₹ 8,64,000
= ₹ 47,44,000

2017 - June [8] (a) From the following data, compute the duration of the Operating Cycle for each of the two years:

	Year 1 (₹)	Year 2 (₹)
Stock:		
Raw Materials	20,000	27,000
Work-in-progress	14,000	18,000
Finished goods	21,000	24,000
Purchases	96,000	1,35,000

Cost of goods sold	1,40,000	1,80,000
Sales	1,60,000	2,00,000
Debtors	32,000	50,000
Creditors	16,000	18,000

Assume 360 days per year for computational purposes. **(6 marks)**

Answer:

Calculation of operating cycle

	Year 1 (₹)	Year 2 (₹)
Current Assets:		
1. Raw material stock = $\frac{\text{Stock of raw material}}{\text{Purchases}} \times 360$	(20 / 96) x 360 = 75 days	(27 / 135) x 360 = 72 days
2. WIP turnover = (WIP / COGS) x 360	(14 / 140) x 360 = 36 days	(18 / 180) x 360 = 36 days
3. Finished goods turnover = (Finished good/ COGS) x 360	(21 / 140) x 360 = 54 days	(24 / 180) x 360 = 48 days
4. Debtors turnover = (Debtors / Sales) x 360	(32 / 160) x 360 = 72 days	(50 / 200) x 360 = 90 days
Total (A)	237 days	246 days
Creditors period = (Creditors / Purchases) x 360	(16 / 96) x 360 = 60 days	(18 / 135) x 360 = 48 days
Total (B)	60 days	48 days
Operating cycle (A-B)	177 days	198 days

2017 - Dec [8] (a) Jai & Karti are regular customers of MJK Ltd. Kolkata and have approached the sellers for extension of credit facility for enabling them to purchase goods from MJK Ltd. On the analysis of past performance and on the basis of information supplied, the following pattern of payment schedule emerges in regard to Jai & Karti:

Schedule	Pattern
At the end of 30 days	15% of the bill
60 days	34% of the bill
90 days	30% of the bill
100 days	20% of the bill
Non-recovery	1% of the bill

Jai & Karti wants to enter into a firm commitment for purchase of goods of ₹ 15,00,000 in 2016, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of the commodity is ₹ 150 on which a profit of ₹ 5 per unit is expected to be made. It is anticipated by the MJK Ltd. that taking up of this contract would mean an extra recurring expenditure to ₹ 5,000 per annum. If the opportunity cost of funds in the hands of MJK Ltd. is 24% per annum, would you as a Management Accountant of the seller recommend the grant of credit to Jai & Karti? Working should form part of your answer. **(8 marks)**

Answer:

Appraisal of credit proposal from slow players:

(a) Incremental Profit = $15,00,000 \times \frac{5}{150}$ = ₹ 50,000

(b) Calculation of incremental Finance Cost = 17,975 × 4 = ₹ 71,900

Sales per quarter = $\frac{15,00,000}{4}$

= ₹ 3,75,000

Finance Cost per quarter:

For 15% of bill	$3,75,000 \times 15\% \times 24\% \times \frac{30}{360}$	1,125
For 34% of bill	$3,75,000 \times 34\% \times 24\% \times \frac{60}{360}$	5,100
For 30% of bill	$3,75,000 \times 30\% \times 24\% \times \frac{90}{360}$	6,750
For 20% of bill	$3,75,000 \times 20\% \times 24\% \times \frac{100}{360}$	5,000
Finance cost per quarter		17,975

(c) Extra Recurring expenses = ₹ 5,000
(d) Bad Debts = 15,00,000 × 1% = ₹ 15,000
Therefore, Incremental Profit = a-b-c-d = 50,000 - 71,900 - 5,000 - 15,000 = ₹ 41,900 (loss)
Comment : As there is incremental loss, it is advice not to extend credit facility to slow players.

2018 - June [8] (a) The management of CAMELLIA Ltd. has called for a statement showing the working capital needed to finance a level of activity of 3,00,000 units of output for the year ended March 31, 2018, The Cost Structure for the company's product, for the above mentioned activity level, is detailed below:

	Cost per unit
Raw materials	₹ 20
Direct labour	5
Overheads	15
Total Cost	40
Profit	10
Selling price	50

Past trends indicate that the raw materials are held in stock, on an average, for two months. Work-in-process (50 per cent complete) will approximate to ½ month's production. Finished goods remain in warehouse, on an average, for 1 month Suppliers of materials extend 1 month's credit. Two month's credit is normally allowed to debtors. A minimum cash balance of ₹ 25,000 is expected to maintained. The production pattern is assumed to be even during the year. (12 months)
Required:
Prepare a statement of Working Capital determination **(7 marks)**
Answer:
Statement of Determine Net working Capital of Camellia Ltd.

(A) Current Assets	₹	₹
(i) Raw materials (25,000 units× 2 × ₹ 20)		10,00,000
(ii) Working in process		

Raw Materials (12,500 units × ₹ 10)	1,25,000	
Direct Labour (12,500 units × ₹ 2.5)	31,250	
Overhead (12,500 units × ₹ 7.5)	93,750	2,50,000
(iii) Finished Goods (25,000 units × ₹ 40)		10,00,000
(iv) Debtors (3,00,000 × ₹ 40 × 2)/12		20,00,000
(v) Minimum Cash Balance		25,000
Total		42,75,000
(B) Current Liabilities		
(i) Creditors for 1 month (3,00,000 × ₹ 20 × 1)/12		5,00,000
(C) Net Working Capital (NWC) (A – B)		37,75,000

Alternatively, in work-in-process [Item A(iii) above] Raw Materials may be valued at 12,500 units × ₹ 20 = ₹ 2,50,000. Debtors [item A (iv) above] may also be valued at [3,00,000 × ₹ 50 (selling price)×2]/12 = ₹ 25,00,000. Calculation of Net Working Capital will change accordingly.

2018 - Dec [8] (a) GOLDEN GARMENT LTD. manufactures readymade garments and sells them on credit basis through a network of dealers. It present sale is ₹ 60 lakh per annum with 20 days credit period. The company is contemplating an increase in the credit period with a view to increasing sales. Present variable costs are 70 per cent of sales and the total fixed costs ₹ 8 lakh per annum. The company expects pre-tax return on investment @ 25 per cent. Some other details are given as under:

Proposed credit policy	Average collection period (days)	Expected annual sales (Amount in ₹ lakh)
I	30	65
II	40	70
III	50	74

Required:
Which credit policy should the company adopt?
Present your answer in a tabular form. Assume 360-day a year. Calculations should be made up to two digits after decimal. Ignore taxation.

(7 marks)

Answer:

Evaluation of proposed credit policies

(Amount in ₹ lakh)

	Present	Proposed (Number of days)		
	(20)	I (30)	II (40)	III (50)
(a) Sales revenue	60	65	70	74
Less: Variable costs (VC)	42	45.5	49	51.8
Total Contribution	18	19.5	21	22.2
Less: Fixed Cost (FC)	8	8	8	8
Profit	10	11.5	13	14.2
Increase in profit due to increase in total contribution compared to present profit	—	1.5	3	4.2
(b) Investment in debtors/receivables:				
Total costs (V+FC)	50	53.5	57	59.8
Debtors turnover ratio (DT)				
(360 ÷ Average collection period)	18	12	9	7.2
Average investment in debtors				
(Total cost ÷ DT)	2.78	4.46	6.33	8.31

Additional investment compared to present level	—	1.68	3.55	5.52
Cost of additional investment @25%	—	0.42	0.89	1.38
(c) Incremental profit [(a) – (b)]	—	1.08	2.11	2.82

Recommendation: Policy III (average collection period 50 days) is recommended as it yields maximum profit.

2019 - June [8] (a) GOLDILOCKS LTD. sells goods to domestic market on a gross profit of 25% on sales without considering depreciation. Its estimates for the year 2019-20 are as follows:

(Amount in ₹ Lakh)

Sales:	
Domestic Market at 2 months' Credit	1600
Export (Selling price 10% below home price) (Exports at 3 months' Credit)	540
Cost:	
Materials used (Suppliers extend 2 months' Credit)	600
Wages paid (½ month in Arrear)	400
Manufacturing Expenses (Paid 1 month in Arrear)	600
Sales Promotion (Payable quarterly in advance)	80
Administration Expenses (Paid 1 month in Arrear)	200

The company maintains one month's stock of each raw material and finished goods.
A cash balance of ₹ 20 lakh is also maintained.
There is no Work-In-Progress (WIP).
All expenses and incomes are made evenly throughout the year.
Required:
Prepare a statement of Working Capital Requirements of the Company for 2019-20 on Cash Cost basis. **(7 marks)**

Answer:

Statement Showing the Requirement of Working Capital of Goldilocks Ltd. For 2019-20. **(Amount in ₹ Lakhs)**

Particulars		₹	₹
(A) Current Assets:			
Raw Materials	$\left(600\times\frac{1}{12}\right)$	50.00	
Finished Goods	$\left(1{,}800\times\frac{1}{12}\right)$	150.00	200.00
Debtors:			
Domestic Market Sales	$\left(1{,}600\times0.75\times\frac{1}{6}\right)$	200.00	
Export Market	$\left(600\times0.75\times\frac{3}{12}\right)$	112.50	312.50
Sales Promotion Expenses	(80 × 0.25)		20.00
Cash Balance to be maintained			20.00
Total Current Assets			**552.50**
B. Current Liabilities :			
Creditors for Raw materials	$\left(600\times\frac{2}{12}\right)$	100.00	
For wages	$\left(400\times\frac{1}{24}\right)$	16.67	
For Manufacturing Expenses	$\left(600\times\frac{1}{12}\right)$	50.00	
For Administration Expenses	$\left(200\times\frac{1}{12}\right)$	16.67	183.34

Total Current Liabilities		183.34
Working Capital Required (A – B)		369.16

Working Notes: **(₹ in Lakhs)**

(i) Cost of Production :

Material used	600
Wages paid	400
Manufacturing Expenses	600
Administration Expenses	200
	1,800
(ii) Export sales at equivalent to D. Sales (540/0.90)	600

2019 - Dec [8] (a) BENTECH (I) LTD. is presently having credit sales of ₹12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 per cent (pre-tax), 50 per cent and 80 per cent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%.

(Assume 360 days in a year.)

Required:

Should the Company change its credit terms? **(6 marks)**

Answer:

Evaluation of Credit Policy

Working Notes:

(i) Calculation of Cash discount

Cash Discount = Total credit Sales × % of customers who take up discount × Rate

Present Policy = $\frac{12,00,000 \times 50 \times .01}{100}$ = ₹6,000

Proposed Policy = 16,00,000 × 0.80 × 0.02 = ₹25,600

(ii) Opportunity Cost of Investment in Receivables

Present Policy = 9,36,000 × (30/360) × (70% of 15)/100 = 78,000 × 10.5/100 = ₹8,190

Proposed Policy = 12,48,000 × (20/360) × 10.50/100 = ₹7,280

Statement showing Evaluation of Credit Policies

Particulars	Present Policy (₹)	Proposed Policy (₹)
Credit Sales	12,00,000	16,00,000
Variable Cost @ 78% of Sales	9,36,000	12,48,000
Bad Debts @1.5% and 2%	18,000	32,000
Cash discount	6,000	25,600
Profit before tax	2,40,000	2,94,400
Tax @30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Opportunity Cost of Investment in Receivables	8,190	7,280
Net Profit	1,59,810	1,98,800

Advise: Proposed policy should be adopted since the net benefit is increased by (₹1,98,800 – ₹1,59,810) = ₹38,990.

2021 - Dec [1] HIND INSTRUMENTS LTD (HIL) manufactures Industrial Components for the heavy machinery Industry. It mainly sells to the Industrial Company at a retail price of ₹ 50 per Component.

The HIL has recently appointed Mr. Anupam as its new Financial Controller.

Immediately after taking over, he examines the working Capital Management Policy of the Company. Against the Industry norm of 10 – 12 percent, the HIL's ratio of Networking Capital to annual turnover (Sales) was as stated 10.40%, 8.80% and 7.50% for last three years 2018 – 19 to 2020 – 21 low as well as declining.

Mr Anupam also finds that Current Ratios & Quick ratios as stated 1.64, 1.41, 1.32 and 0.87, 0.70, 0.65 respectively for last three years 2018 – 19 to 2020 – 21 are inadequate. These findings convinced Mr. Anupam that all was not well with the working capital Management of the Company. He discussed the problem with CFO of the Company Mr. Anint Kapoor.

To find a solution, he undertook a detailed analysis of the Income Statements of the Company. The following points emerged from the study of Income statement of Last three years (2018 – 19 to 2020 – 21).

(i) The Company was retailing the Component for the Sale price of ₹ 50, while the variable cost was 65 percent;

(ii) The fixed cost was ₹ 150 lakh as long as production levels were below 14.50 Lakh units per annum.

(iii) For Production levels of 14.50 Lakh units and above, the fixed costs rose to ₹ 160 lakh;

(iv) The bad debts levels had been 1.98% (2018-19), 2.11% (2019-20) and 2.3% (2020-21).

(v) The credit policy followed by the company is "2/10 net 30".

(vi) On an average, only 30 percent of the customers availed of the cash discount over all the last three years

(vii) The pre-tax rate of return that HIL was expecting for the last three years was 18 percent.

From the above facts Anupam was convinced that the solution to the ills that besieged that company lay with the customers. So he sought to meet the major customers of HIL. He found the following main facts from the customer of HIL.

(a) Many of the customers, the ones with the large orders worth nearly 65 percent of the annual Sales of HIL were of the opinion that it was high time that HIL reviewed its credit terms extended to its debtors;

(b) Many customers were asking for more credit period, though some were also ready to forego the 2 percent discount that HIL was endowing as of now; in fact, they were ready to settle with discounts as low as 1-1.5

percent, as was the industry norm, in return for an extension of the credit period by HIL. From the talks he had with the customers and internal management of HIL, Anupam showed the two alternative to them.

From consultations with both, he was able to come to the following estimations :

(A) For first option (2/20 net 45),

(a) For Production of 14.55 lakh units, a sales of 14.55 lakh units. (after taking into account the previous year's closing inventory 0.90 lakh)
(b) The fixed cost would be ₹ 160 lakh;
(c) The bad debts are expected to be 2 percent of sales revenue;
(d) 52 percent of the customers would avail of the cash discount;
(e) The pre-tax RoR expected by HIL, 18 percent;
(f) The average collection period would be 32 days.
(g) The average collection cost would be ₹ 0.43 lakh

(B) For second option (1.5/30 net 60),

(a) For Production of 14.65 lakh units, a sales of 14.65 lakh units (after taking into account the previous year's closing inventory 0.90 lakh)
(b) The fixed cost would be ₹ 160 lakh
(c) The bad debts are expected to be 1.5 percent of sales revenue;
(d) 56 percent of the customers would avail of the cash discount;
(e) The pre-tax RoR expected by HIL, 18 percent;
(f) The average collection period would be 43 days.
(g) The average collection cost would be 0.42 lakh.

Note: (assume 360 days in a year) (Calculations should be made upto three digits after decimal)

Based on the above information you are required to answer the following question:

(i) What are the amount (₹ in Lakh) of Cash discount and Cost of Investment in Debtors for the Credit term First Option (2/20 net 45)? **(2 marks)**

Answer:

For the credit term first option (2/20 net 45):
Cash Discount = ₹ 7.566 lakh
Cost of Investment in Debtors = ₹ 10.126 lakh

(ii) What is the value of Net Profit (₹ in Lakh) for the Credit Term First Option (2/20 net 45) ? **(4 marks)**

Answer:

Net profit for Credit term First Option (2/20 net 45): = ₹ 61.953 lakh.

(iii) What is the amount (₹ in lakh) of cash discount as well as cost of Investment in Debtors for Credit Term Second Option (1.5/30 net 60)? **(2 marks)**

Answer:

For credit terms- Second Option (1.5/30 net 60): Cash Discount = ₹ 6.153 lakh Cost of Investment in Debtors = ₹13.677 lakh

(iv) The Net profit to be earned from the Credit term Second Option (1.5/30 net 60) would be how much ? **(3 marks)**

Answer:

Net Profit for Credited term Second Option (1.5/30 net 60) = ₹ 65.137 lakh

(v) Which credit term option should be recommended by Mr Anupam to CFO of Hind Instruments Ltd.? **(1 mark) [Sec. D Case Study Question]**

Answer:

Recommendation:

The credit term - second option (1.50/30 net 60) should be recommended by Mr. Anupam to the CFO of the Hind Instruments Ltd. (HIL) since the company's earnings (profit) will be increased by ₹ 3.184 lakh (65.137-61.953).

2022 - Dec [9] (a) Tulsian Ltd., is considering changing its credit terms from 1/35, net 60 to 2/10, net 60. As a result, the credit sales will increase from ₹150 crores to 105%, the Average collection period will decline by 25 days and the Default Percentage will increase from 0.5% to 1%. Collection Expenses will increase from ₹ 35,000 to ₹ 40,500. At present, Selling Price is ₹ 300 per unit, Contribution to Sales Ratio 20%, Average Cost is ₹ 270 per unit and 60% of the credit customers avail cash discount. Should the credit terms be changed if the required rate of return is 24% (pre-tax) and the Tax rate is 25%? (Take 360 days in a year.) **(6 marks)**

Answer:

Present Collection Period = (35 days × 60%) + (60 days × 40%) 21 days + 24 days = 45 days.
Collection Period for Proposed Policy 45 days – 25 days = 20 days

Let Proportion of Customers availing Cash discount under proposed policy is X

Hence (10 days × X) + [60 days x (1 – X)] = 20 days

10X + 60 – 60X – 20 days

– 50X – 40 days

$X = \frac{40}{50} = 0.80$ or 80%

Therefore Proportion of Customers availing Cash Discount under proposed policy is 80% Evaluation of Proposed Debtor Policies

Particulars	₹ in crores
A. Increase in Sales (₹150 crores × 5%)	7.50000
B. *Less:* Increase in Variable Cost (₹ 150 crores × 80% × 5%)	6.00000
C. *Less:* Increase in Bad Debts (₹157.5 crores × 1%) (₹150 crores × 0.5%)	0.82500
D. *Less:* Increase in Cash Discount (₹157.5 crores × 80% x2%) - (₹150 crores × 60% × 1%)	1.62000
E. *Less:* Increase in Collection Expenses (₹ 40,500 - ₹ 35,000)	0.00055
F. Expected Profit (A – B – C -- D – E)	-0.94555
G. *Less:* Tax @ 25%	-0.23639
H. Profit after Tax	-0.70916
I. *Add:* Saving in Opportunity Cost due to reduction in Credit Period $\left(\frac{₹150 \text{ crores} \times 80\% \times 45 \text{ days} \times 18\%}{360 \text{ day}}\right)$ $\left(\frac{₹157.5 \text{ crores} \times 80\% \times 20 \text{ days} \times 18\%}{360}\right)$	1.44000
J. Net Benefits from Proposed Policy (H+I)	0.73084

Recommendation: The Proposed Policy should be adopted since the Net Benefits from Proposed Policy higher than Present Policy.

2023 - June [7] (a) Oli Ltd. provides you with the following information:

Estimated Level of Activity: Completed Units of Production 1,04,000 plus units of WIP

Raw material	19.6% of the selling price
Wages	10.6% of the selling price
Production Overheads (including depreciation of ₹15 per unit at the budgeted level of activity)	17.6% of the selling price
Selling Price	₹ 500 per unit
Average raw material in stock	3 weeks
Average work-in-progress (% of completion with respect to Material-75%, Conversion Cost-70%)	2 weeks
Finished goods in stock	4 weeks
Credit allowed to debtors	2½ weeks
Credit allowed by creditors	3½ weeks
Time lag in payments of labour	2 weeks
Time lag in payments of Production Overheads	1½ weeks
Cash Sales and Cash Purchases	25%
The company believes in keeping ₹ 3,00,000 available to it including the overdraft limit of ₹ 75,000 not yet utilized by the company.	
Provision for contingencies is required @ 4% of the working capital requirement including that provision.	
Assume that production is carried on evenly throughout the year (52 weeks) and wages and overheads accrue similarly.	

You are required to calculate the Net Working Capital Requirement on Cash Cost Basis if Oli Ltd. is an existing company. **(10 marks)**

Answer:

Net Working Capital = ₹ 32,77,396

2023 - June [7] (b) TULSI Ltd. provides the following information:
The company maintains a minimum cash balance of ₹ 10,00,000. The standard deviation of the company's daily cash flow is ₹ 3,60,000. The annual interest rate is 12%. The transaction cost of buying & selling securities is ₹ 180 per transaction. (Assume 360 days in a year).
Required: Calculate the upper limit, return point, and Average Cash Balance as per the Miller-Orr model. **(2 + 2 + 1 = 5 marks)**
Answer:
Upper limit = ₹ 21,23,245
Return Point = ₹ 13,74,415
Average Cash Balance = ₹ 14,99,220

2023 - Dec [6] (a) From the following information you are required to estimate the net working capital requirement:

Particulars	
Cost per unit (₹)	
Raw Materials	40
Direct labour	15
Overheads (excluding depreciation)	30
Total Cost	85
Additional Information:	
Selling-Price	₹ 100 per unit
Output	52,000 units per annum
Raw Material in stock	average 4 weeks
Work-in-process:	

(Assume 50% completion stage with full material consumption)	average 2 weeks
Finished goods in stock	average 4 weeks
Credit allowed by suppliers	average 4 weeks
Credit allowed to debtors	average 8 weeks
Cash at bank is expected to be	₹ 50,000

Assume that production is sustained at an even pace during the 52 weeks of the year. All sales are on credit basis. State any other assumption that you might have made while computing. **(7 marks)**
Answer:
Net Working Capital Required = ₹ 11,95,000

2023 - Dec [6] (b) P Ltd. has received an offer of quantity discounts on its order of materials as under:

Ordering quantities (Kgs)	Price per kg. (₹)
Less than 500	12.00
500 but less than 1,600	11.80
1,600 but less than 4,000	11.60
4,000 but less than 8,000	11.40
8,000 and above	11.20

The annual requirement for the material is 8,000 kgs. The ordering cost per order is ₹ 12.00 and the stock holding cost is estimated at 20% of material cost per annum. As a Cost and Management Accountant you have to compute the most economical ordering quantity. **(7 marks)**
Answer:

Total Annual Requirement (Kg)	Order size Kg	Price per Kg ₹	No. of rders (1) ÷ (2)	Total cost of Inventory (1) × (3)	Ordering cost (4) × ₹ 12	Carrying cost $(2) \times \frac{1}{2} \times (3)$ × 20 % ₹	Total cost (5) + (6) + (7)
1	2	3	4	5	6	7	8

8,000	400	12.00	20	96,000	240	480	96,720
	500	11.80	16	94,400	192	590	95,182
	1,600	11.60	5	92,800	60	1,856	94,716
	4,000	11.40	2	91,200	24	4,560	95,784
	8,000	11.20	1	89,600	12	8,960	98,572

The above table shows that the most economical order size among the given option is 1,600 kg. because as their order size the total cost is minimum.

2024 - June [6] (a) MJK Ltd. has called for a statement showing the working capital needed to finance a level of activity of 30,000 units of output for the year. The cost structure for the company's product for the above-mentioned activity level is detailed below:

Cost Per Unit:

Raw Material = ₹ 20, Direct Labour = ₹ 5, Overheads = ₹ 15,
Total Costs = ₹ 40, Profit = ₹ 10, Selling Price = ₹ 50

Additional Information:

- Raw Materials are held in stock, on an average for two months.
- Work in Progress (100% completed in regard to materials and 50% for labour and overheads) will approximately be half a month's production.
- Finished goods remain in warehouse, on an average, for a month.
- Suppliers of materials give a month's credit.
- Two months credit is allowed to Debtors. Calculation of debtors may be made at selling price.
- A minimum cash balance of ₹ 25,000 is expected to be maintained.
- 30% of the production is sold for cash.
- It may be assumed that production is continued evenly throughout the year.

Prepare the statement showing working capital requirement. **(7 marks)**

Answer:

MJK LTD.
Statement Showing Working Capital Requirement

	₹	₹
Current Assets:		
Stock of Raw Material	1,00,000	

Work in Progress	37,500	
Stock of Finished Goods	1,00,000	
Debtors	1,75,000	
Cash	25,000	
Total Current Assets		4,37,500
Less: **Current Liabilities:**		
Creditors		50,000
Estimated Working Capital Requirement		3,87,500

2024 - June [6] (b) The annual cash requirement of MJ Ltd. is ₹ 10 lakh. The company has marketable securities in lot sizes of ₹ 50,000, ₹ 1,00,000, ₹ 2,00,000, ₹ 2,50,000 and ₹ 5,00,000. Cost of conversion of marketable securities per lot is ₹ 1,000. The company can earn 5% annual yield on its securities. As a Cost and Management Accountant you are required to prepare a table indicating which lot size will have to be sold by the company. Also show that the Economic lot size can be obtained by the Baumol Model. **(7 marks)**

Answer:

MJ Ltd.
Table Indicating Lot Size

Annual requirement of cash (₹)	10,00,000	10,00,000	10,00,000	10,00,000	10,00,000
Lot size of securities (₹)	50,000	1,00,000	2,00,000	2,50,000	5,00,000
Number of transaction	20	10	5	4	2
Average holding of cash (₹)	25,000	50,000	1,00,000	1,25,000	2,50,000
Opportunity holding cost of cash	1,250	2,500	5,000	6,250	12,500
Fixed conversion cost per transaction (₹)	1,000	1,000	1,000	1,000	1,000
Total conversion cost (₹)	20,000	10,000	5,000	4,000	2,000
Total cost (₹)	21,250	12,500	10,000	10,250	14,500

From the above table it is clear that the total cost is minimum at ₹ 10,000 when the lot size of securities is ₹ 2,00,000 and thus it is Economic Lot Size of selling securities.

Economic Lot Size (Baumol Model)

$$C = \sqrt{\frac{2 \times 10,00,000 \times 1,000}{0.05}} = ₹\ 2,00,000$$

2024 - Dec [6] (a) JBC Ltd. sells goods at a gross profit of 25%. Depreciation is considered as a part of cost of production. The following are the annual figures given to you:

Sales (2 months' credit)	₹18,00,000
Materials consumed (1 month credit)	₹ 4,50,000
Wages paid (1 month lag in payment)	₹ 3,60,000
Cash manufacturing expenses (1 month lag in payment)	₹ 4,80,000
Administrative expenses (1 month lag in payment)	₹1,20,000
Sales promotion expenses (paid quarterly in advance)	₹ 60,000

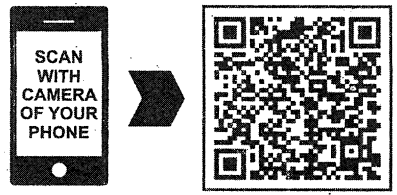
The company keeps one month's stock each of raw materials and finished goods. It also keeps ₹ 1,00,000 in cash.

You are required to estimate the working capital requirements of the company on cash cost basis, assuming 15% safety margin. **(7 marks)**

2024 - Dec [6] (b) Himalaya Refrigeration Company purchases 1,600 units of a component annually, from Bolts & Pins Associates. The annual cost of holding each unit of component is ₹ 8 and the cost of placing order each time is ₹ 100.

You are required to calculate:

(i) Economic Order Quantity;
(ii) Reorder Level; and
(iii) Maximum and Minimum Inventory Level, if the company operates 320 days in a year, material procurement time is 10 days, and safety stock is 20 units. Assume minimum consumption rate per day = average consumption rate per day. **(7 marks)**



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Paper 11 Financial Management and Business Data Analytics

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Motivational Thoughts

- Quote: "Managing working capital is like steering a ship—balance is key to staying afloat."
- Thought: Highlight how efficient working capital management ensures business stability and growth.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	FINANCING DECISIONS OF A FIRM
7A	**Capital Structure and Capital Stacking**

THIS CHAPTER INCLUDES

1. Capital Structure and Capital Stacking
   - Collateral
   - Covenant (Financial and Non-financial), Negative Covenants and Cross Default
   - Capital Stacking and Risk Analysis
   - Senior and Junior Debt Management
   - Capital Structure Theories

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2014 - June [9] (b) (i), 2017 - June [10] (a)	

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2014 - June [9] Answer the following:

(b) (i) Write a short note on the theory of net income approach relating to capital structure. **(4 marks)**

Answer:

Theory of Net Income Approach Relating to Capital Structure:

This approach was identified by David Durand. According to this approach, capital structure has relevance and a firm can increase the value of the firm and minimize the overall cost of capital by employing debt capital in its capital structure. According to this theory, greater the debt capital employed lower shall be the overall cost of capital and more shall be the value of the firm.

This theory is subject to the following assumptions:

- The cost of debt is less than cost of equity.
- The risk perception of investors is not affected by the use of debt. As a result, the equity capitalization rate (ke) and the debt - capitalization rate (kd) don't change with leverage.
- There are no corporate taxes.

According to the above assumptions, cost of debt is cheaper than cost of equity and they remain constant irrespective of the degree of leverage. If more debt capital is used because of its relative cheapness, the overall cost of capital declines and the value of the firm increases.

2017 - June [10] Write short notes on the following:

(a) Net Income Approach of Capital Structure **(4 marks)**

Answer:

Please refer 2014 - June [9] (b) (i) on page no. 242

DESCRIPTIVE QUESTIONS

2014 - Dec [3] Answer the question:

(b) (ii) What are the assumptions of the Modigliani-Miller theory on capital structure and the overall cost of capital? **(8 marks)**

Answer:

Assumptions of the MM theory on capital structure and overall cost of capital:

1. There is a perfect capital market. Capital markets are perfect when
   (a) Investors are free to buy and sell securities,

   (b) They can borrow funds without restriction at the same terms as the firms do,
   (c) They behave rationally,
   (d) They are well informed, and
   (e) There are no transaction costs.
2. Firms can be classified into homogeneous risk classes. All the firms in the same risk class will have the same degree of financial risk.
3. All investors have the same expectation of a firm's net operating income (EBIT).
4. The dividend payout ratio is 100%, which means there are no retained earnings.
5. There are no corporate taxes. This assumption has been removed later.

2015 - Dec [I] (g) The M-M hypothesis on capital structure assumes a perfect capital market. State 4 features of such a market assumed by the hypothesis. **(2 marks)**

Answer:

The features of the capital markets assumed by MM hypothesis are:

(i) Investors are free to buy and sell securities.
(ii) They can borrow funds without restriction at the same to me as the firms do.
(iii) Investors behave rationally.
(iv) They are well informed.
(v) These are no transaction costs.
(vi) There is no transaction cost
(vii) Dividend Policy has no effect on the firm's Cost of Equity.

PRACTICAL QUESTIONS

2014 - June [6] {C} Answer the following. (No credit will be given for answer without the reasoning)

(b) Cost of debt is 9% after tax. Cost of equity is 12% at zero leverage and it keeps increasing as leverage grows. Find the weighted average cost of capital at 60% debt proportion under the Net Operating Income Approach. **(2 marks)**

Answer:
According to Net Operating Income Approach, financial mix does not affect WACC. The cost of equity at zero leverage will be the WACC i.e. 12% always.

2014 - Dec [1] Answer the question:
(g) M. Ltd. does not use any debt in its capital structure. The company has earnings before interest and tax of ₹ 2,00,000 per annum and the capitalization rate is 12%. Assume corporate tax of 30%. Calculate the value of the firm according to MM Hypothesis. **(2 marks)**

Answer:
Given EBIT = ₹ 2,00,000 , K_e = 12% , corporate tax = 30%

As per MM hypothesis , value of unlevered firm $= \frac{EBIT}{K_0}(1 - t)$

$= \frac{2,00,000}{0.12} \times (1 - 0.30)$

= ₹ 11,66,667

2015 - Dec [III] (a) (2) A company has earnings of ₹ 5,00,000. The capital structure of the company has debt and equity in which debt of ₹ 8,00,000 is borrowed at 10%. The cost of equity capital is currently 12.5%. Calculate the value of the firm and overall cost of capital by the net income approach. Ignore taxes. Take market value of debt at par. **(4 marks)**

Answer:

EBIT	= 5,00,000
Interest	= 8,00,000 × 10%
	= ₹ 80,000
Equity Earnings	= 5,00,000 - 80,000
	= ₹ 4,20,000
Value of equity	$= \frac{4,20,000}{12.5\%}$ = ₹33,60,000
Value of debt	= ₹ 8,00,000
Value of firm	= 33,60,000 + 8,00,000 = ₹ 41,60,000
Overall Cost of Capital (K_o)	$= \left(\frac{12.5 \times 33,60,000}{41,60,000}\right) + \left(\frac{10 \times 8,00,000}{41,60,000}\right)$
K_o	= 12.02%

2016 - Dec [6] (a) Companies X, Y and Z Ltd. have the following information with a common expectation of 15% return on investment.

Details	X Ltd.	Y Ltd.	Z Ltd.
EBIT (₹)	20,00,000	20,00,000	20,00,000
No. of equity shares	3,00,000	2,50,000	2,50,000
12% Debentures	—	15,00,000	18,00,000

Find the value of each firm and the value per equity share for each firm under the Modigliani-Miller Approach for each of the following situations:
(i) Assuming there are no taxes.
(ii) Assuming 50% tax rate. **(10 marks)**

Answer:

(i) Assuming no taxes

Particulars	X	Y	Z
EBIT (₹)	20,00,000	20,00,000	20,00,000
Value of the Firm (EBIT/15%)	1,33,33,333	1,33,33,333	1,33,33,333
Less: Value of Debt	—	15,00,000	18,00,000
Value of Equity	1,33,33,333	1,18,33,333	1,15,33,333
No. of Equity Shares	3,00,000	2,50,000	2,50,000
Value per Equity Share	44.44	47.33	46.13

(ii) Assuming 50% tax rate

Particulars	X	Y	Z
EBIT (₹)	20,00,000	20,00,000	20,00,000
Less: Interest	—	1,80,000	2,16,000
EAT= PBT	20,00,000	18,20,000	17,84,000

Taxes (50%)	10,00,000	9,10,000	8,92,000
PAT	10,00,000	9,10,000	8,92,000
Equity Capitalisation @ rate 15% = Value of unlevered firm	66,66,667		
Value of the firm = Value of unlevered firm + Debt (Tax rate)		66,66,667 + 15,00,000 × .5 = 74,16,667	66,66,667 + 18,00,000 × .5 = 75,66,667
Value per equity share = (Value of the firm –value of Debt)/no. of shares	66,66,667/ 3,00,000 = 22.22	59,16,667/ 2,50,000 = 23.67	57,66,667/ 2,50,000 = 23.07

According to MM Hypothesis, this difference in share value will give rise to arbitrage and equilibrium will be reached where all the three firms will have the same market value proving their hypothesis that value of the firm is independent of leverage.

2022 - Dec [7] (a) TCP Ltd. needs to raise ₹ 10,00,000 for the construction of a new plant and provides you with the following information:

(i) Financing Plan: A - 40% Equity and Balance through 10% Debt
Financing Plan: B - 30% Equity, 60% through 10% Debt and Balance through 15% Preference Shares.

(ii) Equity Shares of the face value of ₹ 10 each will be issued at a premium of 110%. Flotation cost ₹ 1 per share. 15% Preference Shares of the face value of ₹100 each will be issued at a premium of 110%. Flotation costs ₹10 per share.

(iii) Expected Capital Turnover Ratio 1, Expected Sales to Variable Cost Ratio 156.25%, Fixed Costs ₹ 60,000. Tax Rate: 25%.

Required:

Calculate the Indifference Point between A and B plans and suggest which plan has more financial risk. **(6 marks)**

Answer:

The Indifference Point between A and B plans is the EBIT level of ₹ 1,00,000

Financial Break-Even Point for Financial Plan A = ₹ 60,000

Financial Break-Even Point for Financial Plan B = ₹ 70,000

As Financial Break Even point for Financial Plan B is higher therefore Financial Plan B has more financial risk.

2023 - Dec [7] (a) Company L and company U are in the same risk class and identical in all respects except that L uses debt while U does not. Levered company has ₹ 18,00,000 debentures, carrying 10% rate of interest. Both the companies earn 20% before interest and taxes on their total assets of ₹ 30,00,000. Assume perfect capital market, tax rate of 50% and capitalization rate of 15% for an all-equity company.

Compute the value of both the companies using NI approach and NOI approach and overall Cost of Capital of Company L using NI approach. **(7 marks)**

Answer:

(i) **Valuation of company under NI approach**

Particulars	**L Company**	**U Company**
EBIT	6,00,000	6,00,000
Less: Interest	1,80,000	-
Taxable income	4,20,000	6,00,000
Less: Taxes @ 50%	2,10,000	3,00,000
Earning for equity share holders	2,10,000	3,00,000
Equity capitalization rate K_e i.e. 15%	.15	.15
Market value of shares (5) $\frac{\text{Earning for Eq. shareholder}}{K_e}$	14,00,000	20,00,000
Market value of debt (B)	18,00,000	-
Total value of company	32,00,000	20,00,000

(ii) Valuation of company under NOI Approach

Value of company U = $\frac{EBIT\,(1 - T)}{K_e}$

$= \frac{6,00,000 \times (1 - .50)}{.15} =$ ₹20,00,000

Value of company L = Value of company U + Debt (tax)
= 20,00,000 + 18,00,000(.50)
= ₹ 29,00,000

(iii) Overall cost of capital of company L by NI approach

$$K_0 = \frac{\text{EBIT}}{\text{V i.e. total value of company}} \times 100$$

$$= \frac{6,00,000}{32,00,000} \times 100$$

= 18.75%

Motivational Thoughts
- Quote: "The foundation of a strong business lies in the balance of its capital structure."
- Thought: A well-planned capital structure is the key to stability, growth, and resilience in any organization.

Fun Flow
- Illustrate the flow: Capital Components (Equity, Debt) - Optimal Capital Mix - Cost of Capital - Value Maximization

Checklist for Understanding
- Definition of capital structure and capital stacking.
- **Components:**
  - Equity (Shareholders' Funds)
  - Debt (Loans, Bonds)
  - Hybrid Instruments (Convertible Debentures, Preference Shares)
- **Theories:**
  - Modigliani-Miller Approach
  - Trade-Off Theory
  - Pecking Order Theory
  - Factors influencing capital structure decisions.

Fun Facts
- The term "capital stacking" was popularized in modern finance to describe a layered approach to funding.
- Some of the world's largest companies, like Apple, have a near-perfect capital structure with zero net debt.

Last-Minute Analysis
- **Key Elements:**
  - Equity: Risk-free but costly.
  - Debt: Tax benefits but risky.
  - Hybrid: A mix of safety and cost-effectiveness.
- **Important Decisions:**
  - Debt-to-Equity Ratio.
  - Cost vs. Risk Trade-offs.

Smart Study Tips
- Focus on understanding the trade-offs between debt and equity.
- Practice numerical problems involving debt-to-equity ratios and weighted average cost of capital (WACC).

Quick Study Tips
- Memorize formulas for leverage ratios using acronyms like DEW (Debt, Equity, Weighted).
- Use real-world examples to relate concepts.

Practical Analysis
- Compare the capital structure of two companies (e.g., Infosys with low debt vs. Tata Motors with high debt).
- Study how capital stacking is used in startups to attract venture capital.

Real-World Experience
- Example: How Reliance Industries used a mix of debt and equity to finance its telecom ventures.
- Case: How Zomato used convertible notes as part of its capital stacking strategy.

Storytelling
- Case Study: How Tesla balanced debt and equity during its early years to fund innovation.
- The story of Airbnb and its unique approach to capital stacking to survive during the pandemic.

Fun Mnemonics
- **DECIDE for capital structure:**
- Debt
- Equity
- Cost of Capital
- Investor Returns
- Dividend Policy
- Efficiency

Diagrammatic Representations
- Layered diagram showing capital stacking.
- Bar chart comparing debt-to-equity ratios across industries.

Motivational Case Studies
- How Google maintained a balanced capital structure to fund its innovations.
- How Patagonia used equity-heavy funding to align with its sustainable goals.

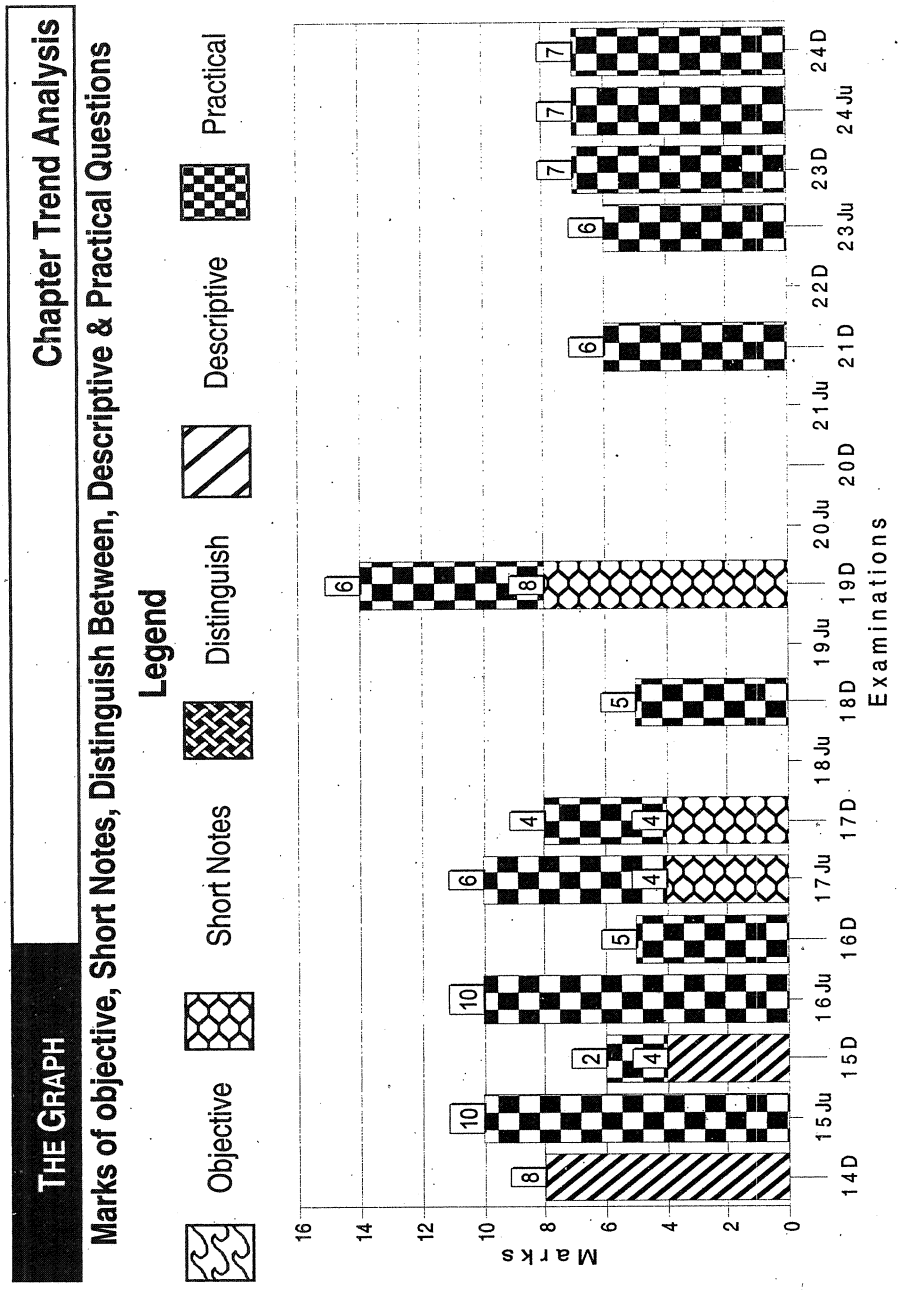
Key Takeaways
- A balanced capital structure minimizes risk and maximizes returns.
- Capital stacking allows flexibility in sourcing funds.

Jargon Busters
- Simplify terms like leverage, optimal capital structure, and hybrid instruments.

Thought-Provoking Questions
- Is high equity always better for a business?
- How does capital structure affect a company's valuation?

Real-Life Diaries
- Share insights from a CFO balancing debt and equity for a major project.

Application-Based Tasks
- Group activity: Propose an optimal capital structure for a startup in the e-commerce sector.



CHAPTER	FINANCING DECISIONS OF A FIRM
7B	**Leverage and EBIT-EPS Analysis**

THIS CHAPTER INCLUDES

1. Leverage	4. Combined Leverage
2. Operating Leverage	5. Indifference Point
3. Financing Leverage	6. EBIT-EPS Analysis

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2017 - June [10] Write short note on the following:
(c) Financial Leverage **(4 marks)**

Answer:

Financial Leverage:

The Financial Leverage may be defined as a % increase in EPS associated with a given percentage increase in the level of EBIT. Financial leverage emerges as a result of fixed financial charge against the operating profits of the firm. The fixed financial charge appears in case the funds requirement of the firm are partly financed by the debt financing. By using this relatively cheaper source of finance, in the debt financing, the firm is able to magnify the effect of change in EBIT on the level of EPS.

The significance of DFL may be interpreted as follows:

- Other things remaining constant, higher the DFL, higher will be the change in EPS for same change in EBIT. In other words, if firm K has higher DFL than firm L, EPS of firm K increases at faster rate than that

of firm L for same increase in EBIT. However, EPS of firm K falls at a faster rate than that of firm K for same fall in EBIT. This means, higher the DFL more is the risk.

- Higher the interest burden, higher is the DFL, which means more a firm borrows more is its risk.
- Since DFL depends on interest burden, it indicates risk inherent in a particular capital mix, and hence the name financial leverage.

2017 - Dec [10] Write short note on the following:
(d) Combined Leverage **(4 marks)**

Answer:

Combined Leverage:

A combination of the operating and financial leverages is the total or Combination Leverage. The Operating leverage causes a magnified effect of the change in sales level on the EBIT level and if the Financial leverage combined simultaneously, then the change in EBIT will, in turn, have a magnified effect on the EPS. A firm will have wide fluctuations in the EPS for even a small change in the sales level. Thus effect of change in sales level on the EPS is known as combined leverage. Thus Degree of Combined Leverage may be calculated as follows:

DCL = Contribution/Earning after Interest.

2019 - Dec [10] Write short notes on the following:
(a) Process of Debt Securitization
(c) Significance of Degree of Financial Leverage. **(4 marks each)**

Answer:

(a) Process of debt securitization is discussed below:

- The loans are segregated into relatively homogeneous pools.
- The basis of pool is the type of credit, maturity pattern, interest rate, risk etc.
- The assets pools are then transferred to a trustee.
- The trustee then issues securities which are purchased by investors.
- Such security(asset pool) are sold on the undertaking without recourse to seller.

In this way conversion of debts to securities is known as Debt securitization.

(c) Significance of Degree of Financial Leverage (DFL):

- Higher the DFL more is the risk.
- Higher the interest burden, higher is DFL, which means more a firm borrows more is its risk.
- Since DFL depends on interest burden, it indicates risk inherent in a particular mix and hence the name financial leverage.
- There is a unique DFL for each amount of EBIT

$$DFL = \frac{\text{Earning before Internet and tax}}{\text{Earning after internet}} = \frac{EBIT}{EBT}$$

DESCRIPTIVE QUESTIONS

2014 - Dec [3] Answer the question:
(c) (ii) Explain the concepts of operating and financial leverage and the EBIT-EPS indifference point. What financial plan would you opt for when EBIT is (i) above, (ii) at and (iii) below the indifference point? **(8 marks)**

Answer:

Operating leverage:

It is the responsiveness of firm's EBIT to the changes in sales value.

$$\text{Degree of Operating Leverage} = \frac{\text{Contribution}}{\%\text{Change in EBIT}}$$

Financial Leverage:

It arises when a firm deploys debt funds with fixed charge to increase EPS. Higher the DFL higher will be the change in EPS for the same change in EBIT. Higher the interest burden higher is the DFL.

$$\textbf{Financial Leverage} = \frac{\%\text{Change in EPS}}{\%\text{Change in EBIT}}$$

EBIT – EPS INDIFFERENCE POINT/LEVEL

The indifference level of EBIT is one at which the EPS remains same irrespective of the debt-equity mix. While designing a capital structure, a firm may evaluate the effect of different financial plans on the level of EPS, for a given level of EBIT. Out of several available financial plans, the firm may have two or more financial plans which result in the same level of EPS for a

given EBIT. Such a level of EBIT at which the firm has two or more financial plans resulting in same level of EPS, is known as indifference level of EBIT.

Interpretation of the Indifference Point:

Case I - EBIT below Indifference Point

Option - Option with lower debt (Interest Burden)

Reason: When rate of earnings and operating profits (EBIT) are low, more interest and debt burden is not advisable. A high DOL should be properly managed by low Financial Leverage.

Case II - EBIT equal to Indifference Point

Option - Any alternative can be chosen.

Reason: Same EPS due to Indifference Point.

Case III - EBIT above Indifference Point

Option - Option with higher debt (Interest Burden)

Reason: When EBIT is high, Financial Leverage works till the EPS is maximized. Low DOL should be coupled with high DFL, to maximize gain of Equity Shareholders.

2015 - Dec [III] (a) (3) Explain the concepts of operating leverage and financial leverage. **(4 marks)**

Answer:

Operating Leverage: Leverage associated with asset acquisition or investment activities is referred to as the operating leverage. It refers to the firm's ability to use fixed operating costs to magnify the effect of changes in sales on its operating profit (EBIT) and results in more than a proportionate change (±) in EBIT with change in the sales revenue. It is measured by calculating Degree of Operating Leverage (DOL). The DOL measures the sensitivity of operating income (EBIT) to the changes in revenues. The greater the DOL, the higher is the operating leverage.

DOL = (Percentage change in EBIT/Percentage change in Sales)>1

Alternatively, DOL = (ΔEBIT/EBIT)/(ΔQ/Q) where EBIT

= Q(S - V) - F

DOL = Q(S - V)/Q(S - V) - F

DOL = Contribution /EBIT

High operating leverage is good when revenues are rising and bad when they are falling. The DOL is a measure of the business/ operating risk of the firm. Operating risk is the of the firm not being able to cover its fixed

operating costs. DOL depends on fixed operating costs. High DOL shows high risk thus helping to measure business risk.

Financial Leverage: Financial leverage is related to the financing activities of a firm. It results from the presence of fixed financial charges (*such as interest on debt and dividend on preference shares*). Since such financial expenses do not vary with the operating profits, financial leverage is concerned with the effect of changes in EBIT on the earnings available to equity shareholders.

It is defined as the ability of a firm to use fixed financial charges to magnify the effect of changes in EBT on the Earnings Per Share (EPS). Financial leverage also refers to the mix of debt and equity in the capital structure of the company.

The measure of financial leverage is the Degree of Financial Leverage (DFL). The DFL reflects the responsiveness of EPS to changes in EBIT. It is defined as :

DFL = (Percentage change in EPS/Percentage change in EBIT)

DFL = Δ EPS ÷ EPS/ΔEBIT ÷ EBIT

DFL = EBIT/EBIT – I – $(D_p + D_t)/(1 - t)$ {where D_p = dividend paid

D_t = dividend tax

t = Tax rate

High fixed financial costs increases the financial leverage and thus financial risk. The EBIT - EPS analysis is widely used method of examining the effect of financial leverage/use of debt.

As the company becomes more financial leveraged, it becomes riskier, which leads to increased fluctuations in return on equity and increase in the interest rate on debts.

PRACTICAL QUESTIONS

2014 - June [7] (a) The following details relating to a company are given:

Sales per annum	1,00,000 units
Variable Cost	₹ 90 per unit
Fixed Cost including interest per annum	₹ 18,00,000

P/V Ratio	25%
10% Debentures	₹ 30,00,000
Equity Shares Capital (shares of ₹ 10 each)	₹ 40,00,000
Corporate Tax Rate	30%

Calculate:
(i) Operating Leverage
(ii) Financial Leverage
(iii) Combined Leverage
(iv) Earnings per share **(8 marks)**

Answer:

$$\text{PV Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$25\% = \frac{SP - 90}{SP}$$

$0.25SP = SP-90$

$0.25SP-SP = -90$

Or Selling Price = 90/.75 =120

Sales per Annum = 1,00,000 ×120 = 120 lakhs

Less:	Variable Cost	90 lakhs
	Contribution	30 lakhs
Less:	Fixed Cost	15 lakhs
	EBIT	15 lakhs
Less:	Interest	3 lakhs
	EBT	12 lakhs
Less:	Tax @ 30%	3.6 lakhs
	EAT	8.4 lakhs

(i) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{30}{15} = 2$

(ii) Financial Leverage $= \frac{\text{EBIT}}{\text{EBIT - Interest}} = \frac{15}{15-3} = 1.25$

(iii) Combined Leverage = Operating Leverage × Financial Leverage
= 2 × 1.25 = 2.5

(iv) Earnings Per Share $= \frac{\text{Earning after tax}}{\text{no. of shares}} = \frac{8,40,000}{4,00,000} =$ ₹ 2.1 / share

2015 - June [I] (e) Toli Ltd. earned a contribution of ₹ 50 per unit on 65,000 units sold. Company's debt is ₹ 30,00,000 at 12% rate of interest and Fixed Costs are ₹ 7,50,000. Calculate the Financial Leverage. **(2 marks)**

Answer:

Total contribution	= 65,000 × 50	= ₹ 32,50,000
Interest cost	= 30,00,000 × 12%	= ₹ 3,60,000
Fixed costs		= ₹ 7,50,000

Financial leverage = EBIT/EBT

	(₹)
Contribution	32,50,000
Less: Fixed costs	7,50,000
EBIT	25,00,000
Less: Interest	3,60,000
EBT	21,40,000

Financial leverage = EBIT/EBT
= 25,00,000/21,40,000
= 1.17

Hence, financial leverage of company is = 1.17

2015 - June [III] (c) (i) Calculate the operating leverage and financial leverage under situations A, B and C and financial plans I, II and III respectively from the following information relating to the operating and capital structure of ABC Co. Also find out the combination of leverages which give the highest value and the least value.

Installed capacity		1,200 units
Actual production and sales		800 units
Selling price per unit		₹ 15
Variable cost per unit		₹ 10
Fixed cost:	Situation A	₹ 1,000
	Situation B	₹ 2,000
	Situation C	₹ 3,000

Capital structure	Financial plan		
	I	II	III
Equity	₹ 5,000	₹ 7,500	₹ 2,500
Debt	₹ 5,000	₹ 2,500	₹ 7,500
Cost of debt	12%	12%	12%

(8 marks)

Answer:

Calculation of Operating Leverage:

	Situation A	Situation B	Situation C
Number of unit sold	800	800	800
Sales @ ₹ 15	12,000	12,000	12,000
Variable Cost @ ₹ 10	8,000	8,000	8,000
Contribution	4,000	4,000	4,000
Fixed Cost	1,000	2,000	3,000
EBIT	3,000	2,000	1,000
Opening Leverage Contribution/EBIT	1.33	2.00	4.00

Calculation of Financial Leverage:

	Plan I	Plan II	Plan III
Situation A			
EBIT	₹ 3,000	₹ 3,000	₹ 3,000
Less: Interest @ 12%	600	300	900
Profit before Tax	2,400	2,700	2,100
Financial Leverage (EBIT/Profit before tax)	1.25	1.11	1.43

Situation B			
EBIT	₹ 2,000	₹ 2,000	₹ 2,000
Less: Interest @ 12%	600	300	900
Profit before Tax	1,400	1,700	1,100
Financial Leverage (EBIT/Profit before tax)	1.43	1.18	1.82
Situation C			
EBIT	₹ 1,000	₹ 1,000	₹ 1,000
Less: Interest @ 12%	600	300	900
Profit before Tax	400	700	100
Financial Leverage (EBIT/Profit before tax)	2.50	1.43	10.0

The combined leverage may be calculated by multiplying the operating leverage and financial leverage for different combination of Situation A, B & C and the Financial Plans I, II & III as follows:

Situation A	Situation B		Situation C
Plan I	1.66	2.86	10
Plan II	1.47	2.36	5.72
Plan III	1.90	3.64	40

The calculation of combined leverage shows the extent of the total risk and is helpful to understand the variability of EPS as a consequence of change in sales levels. In this case, the highest combined leverages is there when financial plan III is implemented in situation C; and lowest value of combined leverage is attained when financial plan II is implemented in situation A.

2015 - Dec [I] (h) A firm earns a contribution of ₹ 4,80,000. Its operating leverage and financial leverage are respectively 4 and 5. Find the firm's PAT if the effective tax rate is 25%. **(2 marks)**

Answer:

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

$$4 = \frac{4,80,000}{\text{EBIT}}$$

$$\text{EBIT} = ₹\ 1,20,000$$

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

$5 = \frac{1,20,000}{EBT}$

EBT = ₹ 24,000

PAT = EBT - Tax

= 24,000 - 24,000 × 25%

Or PAT = ₹ 18,000

2016 - June [8] (a) Calculate the degree of Operating Leverage, degree of Financial Leverage and the degree of Combined Leverage for the following firms and also interpret the result obtained:

		Firm X	Firm Y	Firm Z
(i)	Output (Units)	80,000	22,500	1,50,000
(ii)	Variable Cost per unit (₹)	1.50	1.10	1.20
(iii)	Fixed Cost (₹)	10,000	20,000	8,000
(iv)	Interest on Loan Fund (₹)	6,000	10,000	—
(v)	Selling price per unit (₹)	2.50	5.00	1.50

(10 marks)

Answer:

Particulars	Firm X	Firm Y	Firm Z
Output (Units)	80,000	22,500	1,50,000
Selling Price per unit (₹)	2.50	5.00	1.50
Less: Variable Cost per unit (₹)	1.50	1.10	1.20
Contribution per unit (₹)	1.00	3.90	0.30
Total Contribution (₹)	80,000	87,750	45,000
Less: Fixed Cost (₹)	10,000	20,000	8,000
EBIT (₹)	70,000	67,750	37,000
Less: Interest (₹)	6,000	10,000	—
EBT (₹)	64,000	57,750	37,000
DOL	1.14	1.29	1.22
DFL	1.09	1.17	1.00
DCL	1.25	1.52	1.22

Firm Y is most risky as it has highest DOL, DFL and DCL.

2016 - Dec [8] (b) The following information is available from the records of A Ltd.:

Profit after Tax	₹ 7,91,000
10% Debentures at par	₹ 25,00,000
Operating Leverage	1.80 times
Variable cost ratio	60%
Corporate Tax rate	30%

(i) Prepare an Income Statement for A Ltd.

(ii) Calculate the combined leverage for A Ltd. **(5 marks)**

Answer:

Income Statement

Details	Amount (₹)	Working Note
Sales	62,10,000	Contribution/40%
Cost of Sale(Variable Cost)	37,26,000	60% of Sales
Contribution (40 %)	24,84,000	(Operating Leverage 1.8 × PBIT 13,80,000)
Less: Fixed Cost	11,04,000	Difference between PBIT and Contribution
Profit Before Interest and Taxes	13,80,000	(PAT/70%) + Interest
Less: Interest	2,50,000	10% of 25,00,000
PBT	11,30,000	(PAT + Taxes)
Less: Taxes 30%	3,39,000	(PAT/70 x 30%)

PAT	7,91,000	(given; starting point)
Combined Leverage	24,84,000/ 11,30,000 = 2.198 say 2.2	Combined Leverage = Contribution/PBT

2017 - June [8] (b) The following information are available in respect of ABC company:

Liabilities	Amount	Assets	Amount
	₹		₹
Equity share capital	1,20,000	Fixed Assets	3,00,000
Retained Earnings	40,000	Current Assets	1,00,000
10% Long Term Debt	1,60,000		
Current Liabilities	80,000		
	4,00,000		4,00,000

The company's total assets turnover ratio is 3, its fixed operating costs are ₹ 2,00,000 and its variable operating cost ratio is 40%. The income tax rate is 50%. Calculate the different types of leverages, given that the face value of share is ₹ 10. **(6 marks)**

Answer:

$\frac{\text{Sales}}{\text{Total Assets}} = 3 \Rightarrow$ Sales = 3 × 4,00,000 = 12,00,000

Contribution = S - VC = 12,00,000 - (12,00,000) × 40%

⇒ C = 7,20,000

EBIT = C - FC = 7,20,000 - 2,00,000 = 5,20,000

EBT = EBIT - Interest = 5,20,000 - (1,60,000 × 10%)

⇒ EBT = 5,04,000

Profit = EBT - Tax = 5,04,000 - (5,04,000 × 50%)

⇒ Profit = 2,52,000

Operating leverage = $\frac{C}{EBIT} = \frac{7,20,000}{5,20,000} = 1.385$

Financial Leverage = $\frac{EBIT}{EBT} = \frac{5,20,000}{5,04,000} = 1.032$

Combined Leverage = 1.385 × 1.032 = 1.429

2017 - Dec [8] (b) Company A reports the following information from its financial statements.

	₹
Sales	8,00,000
Less: Variable Cost	2,40,000
Contribution	5,60,000
Fixed Cost	4,00,000
EBIT	1,60,000
Less: Interest	20,000
Profit before Tax	1,40,000

Find out:

(i) Using concept of financial leverage, by what percentage will the taxable income increase, if EBIT increases by 10%? Verify the results in terms of Rupees.

(ii) Using the concept of operating leverage, by what percentage will EBIT increase if there is 10% increase in sales? Verify the results in terms of Rupees. **(2+2 = 4 marks)**

Answer:

i. Degree of Financial Leverage:

FL – EBIT/Profit before Tax = 1,60,000/1,40,000 = 1.1428

If EBIT increases by 10%, the taxable income will increase by 1.1428 × 10 = 11.428% and it may be verified as follows:

EBIT (after 10% increase)	₹ 1,76,000
Less: interest	20,000
Profit before Tax	1,56,000

Increase in taxable income is ₹ 16,000 i.e., 11.428% of ₹ 1,40,000

ii. Degree of Operating beverage:

OL = Contribution/EBIT = 5,60,000/1,60,000 = 3.50

If sale increases by 10%, the EBIT will increase by 3.50 × 10 = 35% and it may be verified as follow:

Sales (after 10% increase)	₹ 8,80,000
Less: variable expenses @ 30%	2,64,000

Contribution	6,16,000
Less: Fixed cost	4,00,000
EBIT	2,16,000

Increase in EBIT is ₹ 56,000 i.e. 35% of ₹ 1,60,000

2018 - Dec [8] (b) Jai & Karti Ltd. sells 10,00,000 bottles of Soda in a year. Each bottle produced has a variable cost of ₹ 5 and sells for ₹ 10. Fixed operating costs are ₹ 10,00,000. The company has debt of ₹ 12,00,000 at 10% rate of interest.

As a Cost and Management Accountant you are required to **calculate:**

(i) The Degree of Operating Leverage,
(ii) The Degree of Financial Leverage, and
(iii) The Degree of Total Leverage. **(5 marks)**

Answer:

Contribution = ₹ 5 ×10 lakh bottles = ₹ 50,00,000
EBIT = ₹ 40,00,000 (50,00,000 –10,00,000)
Interest = ₹ 1,20,000
EBT = (40,00,000 – 1,20,000) = ₹ 38,80,000

(i) Degree of Operating Leverage = $\frac{\text{Contribution}}{\text{EBIT}} = \frac{₹50,00,000}{₹40,00,000}$

= 1.25 times

(ii) Degree of Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{40,00,000}{38,80,000}$ =1.03 times

(iii) Degree of Total Leverage
= DOL × DFL
= 1.25 × 1.03 = 1.29
or, $\frac{\text{Contribution}}{\text{EBT}} = \frac{₹50,00,000}{₹38,80,000} = 1.29$

2019 - Dec [8] (b) NESTINO LTD. had the following Balance Sheet as on March 31,2019.

Liabilities and Equity	₹ (in crores)	Assets	₹ (in crores)
Equity Share Capital (one crore shares of ₹ 10 each)	10	Fixed Assets (Net)	25

Reserves and Surplus	2	Current Assets	15
15% Debentures	20		
Current Liabilities	8		
	40		40

The additional information given is as under:

Fixed Costs per annum (exclusive interest)	₹8 crores
Variable operating costs ratio	65%
Total Assets turnover ratio	2.5
Income-tax rate	40%

Required:

Calculate the following:

(i) Earnings per share
(ii) Operating Leverage
(iii) Financial Leverage
(iv) Combined Leverage **(6 marks)**

Answer:

Total Assets = ₹40 crores
Total Asset Turnover Ratio = 2.5
Hence, Total Sales = ₹40 × 2.5 = ₹100 crores

Computation of Profits after Tax (PAT)

Particulars	₹ (in crores)
Sales	100
Less: Variable operating cost @ 65%	65
Contribution	35
Less: Fixed cost (other than interest)	8
EBIT	27
Less: Interest on debentures (15% × 20)	3

PBT	24
Less: Tax @ 40%	9.6
Profit After Tax **(PAT)**	**14.4**

(i) Earnings per share
(EPS) = Profit after Tax (PAT)/ No. of Equity shares

$$\therefore \text{EPS} = \frac{₹14.4 \text{ Crores}}{1 \text{ Crore equity shares}} = ₹14.40$$

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{35}{27}$
$= 1.296$

(iii) Financial Leverage $= \frac{\text{EBIT}}{\text{PBT}} = \frac{27}{24}$
$= 1.125$

(iv) Combined Leverage $= \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}}$
$= 1.296 \times 1.125$
$= 1.458$

2021 - Dec [2] The Balance Sheet of RIUP Ltd as on March 31' 2021 is as follows:

Equity & Liabilities	Amount (₹)	Assets	Amount (₹)
Equity share Capital (₹ 10 each)	1,20,000	NET Fixed Assets	3,00,000
Other Equity	40,000	Current Assets	1,00,000
10% Long term Debt	1,60,000		
Current Liabilities	80,000		
	4,00,000		**4,00,000**

The Company's total assets turnover ratio is 3. Its fixed operating costs are ₹ 2,00,000 and the variable operating costs ratio 40 percent. The Corporate Tax rate is 35 percent.
Based on above information you are required to answer the following questions :

(i) What is the operating Leverage of Riup Ltd. ? **(2 marks)**
(ii) Financial Leverage is _____ **(1 mark)**
(iii) What is the Combined Leverage of Riup Ltd. ? **(1 mark)**
(iv) What is the likely level of EBIT if EPS is ₹ 3 ? **(2 marks)**
[Sec. C Two LAQ]

Answer:

$\frac{\text{Sales}}{\text{Total Assets}} = 3 \Rightarrow \text{Sales} = 3 \times 4,00,000 = 12,00,000$
VC = 12,00,000 × 40% = 4,80,000
C = 12,00,000 – 4,80,000 = 7,20,000
FC = 2,00,000
∴ EBIT = 7,20,000 – 2,00,000 = 5,20,000
EBT = EBIT – Interest
= 5,20,000 – (1,60,000 × 10%)
= 5,04,000

(i) Operating Leverage (OL) $= \frac{7,20,000}{5,20,000} = 1.385$

(ii) Financial Leverage (FL) $= \frac{5,20,000}{5,04,000} = 1.032$

(iii) Combined Leverage (CL) $= \frac{7,20,000}{5,04,000} = 1.43$

(iv) EBIT = ₹ 71,385

2023 - June [5] (a) (i) Olio Ltd. needs to raise ₹ 10,00,000 for the construction of a new plant and provides you the following information:

Financing Plan A	40% Equity and Balance in 10% Debt
Financing Plan B	30% Equity, 60% in 10% Debt and Balance in 15% Pref. Shares.

(A) Equity Shares of the face value of ₹ 10 each will be issued at a premium of 110%. Flotation cost ₹ 1 per share, 15% Pref. Shares of a face value of ₹ 100 each will be issued at a premium of 110%. Flotation cost ₹ 10 per share.

(B) Expected Capital Turnover Ratio 1. Expected Sales to Variable Cost Ratio 156.25%, Fixed Cost ₹ 60,000. Tax Rate: 25%.

Required: Calculate the Indifference point and Financial Break Even Point. **(3 + 3 = 6 marks)**

Answer:

Point of indifference:

$$\frac{(EBIT-60,000)(1-.25)}{20,000} = \frac{(EBIT-60,000)(1-.25)-7,500}{15,000}$$

4,00,000 ÷ 20* = 20,000 3,00,000 ÷ 20 = 15,000

*(10+110%-1) = 20

Note: Preference Share = 1,00,000 ÷ 200 = 500 × 100 = 50,000 × 15%

$$\frac{(EBIT-60)(.75)}{20} = \frac{(EBIT-60000)(.75)-7.5}{15}$$

$$\frac{.75EBIT-45}{20} = \frac{(0.75EBIT-45-7.5)}{15}$$

11.25 EBIT - 675 = 15 EBIT - 900 - 150

11.25 EBIT - 15 EBIT= - 900 - 150 + 675

$$\frac{EBIT}{} = \frac{-375}{-3.75} = 100 \text{ or } 1,00,000$$

	Financial Plan A(₹)	Financial Plan B(₹)
EBIT	1,00,000	1,00,000
(-) Interest	60,000	60,000
EBT	40,000	40,000
(-)Tax 25%	10,000	10,000
Profit	30,000	30,000
(-) Pref. share dividend	-	7,500
Profit for Equity Share holder	30,000	30,000
No. of Equity share	20,000	15,000
EPS (POI)	1.5	1.5

Financial Break Even Point

$$\text{Plan A} = \text{Interest} + \frac{\text{Pref.Share division}}{1-\text{Tax}}$$

$$60,000 + \frac{\text{NIL.}}{1-\text{Tax.}75} = 60,000$$

$$\text{Plan B} = 60,000 + \frac{7,500}{1-\text{Tax.}75} = 70,000$$

2023 - Dec [7] (b) The balance sheet of a company for the year 2022-23 is given below (in ₹ Crore):

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity share capital (₹10)	1,20,000	Fixed Assets	3,00,000
Retained Earnings	40,000	Current Assets	1,00,000
10% Long term debt	1,60,000		
Current Liabilities	80,000		
	4,00,000		4,00,000

The company's total assets turnover ratio is 3, its fixed operating costs are ₹ 2,00,000 and its variable operating cost ratio is 40%. The income tax rate is 30%.

Calculate Degree of Operating leverage, Degree of Financial leverage and Degree of Combined leverage of the company. **(7 marks)**

Answer:

Income statement

Sales (3 × 4,00,000)	12,00,000
Less: Variable cost 40%	4,80,000
Less: Fixed costs	2,00,000
EBIT	5,20,000
Less: Interest @ (10% on ₹ 1,60,000)	16,000

EBT	5,04,000
Less: Taxes @ 30%	1,51,200
EAT	3,52,800

1. $DOL = \frac{\text{Sales - Variable Cost}}{\text{EBIT}}$

$= \frac{12,00,000 - 4,80,000}{5,20,000}$

$= 1.38$

2. $DFL = \frac{\text{EBIT}}{\text{EBIT - Interest}}$

$= \frac{5,20,000}{5,20,000 - 16,000}$

$= 1.03$

3. $DCL = 1.38 \times 1.03 = 1.42$

2024 - June [7] (b) J Ltd. Currently has an equity share capital of ₹ 40 Lakh consisting of 40,000 equity shares of ₹ 100 each. The management is planning to raise another ₹ 30 Lakh to finance a major programme of expansion through one of the four possible financing plans. The options are:

A. Entirely through equity shares.
B. ₹ 15 lakh in equity shares of ₹ 100 each and the balance through 8% Debentures.
C. ₹ 10 lakh in equity shares of ₹ 100 each and the balance through long-term borrowing at 9% interest p.a.
D. ₹ 15 lakh in equity shares of ₹ 100 each and the balance through preference shares with 5% dividend.

The company's expected earnings before interest and taxes (EBIT) will be ₹ 15 lakh. Assuming corporate tax rate of 50%, as a Cost and Management Accountant you are required to analyze the EPS and financial leverage that will be authorized under each of the above schemes of financing and comment on the best plan to be selected. **(7 marks)**

Answer:

Jai Ltd.
EPS and Financial Leverage

	Financial Plan - A	Financial Plan - B	Financial Plan - C	Financial Plan - D
Earnings per shares (EPS)	₹ 10.71	₹ 12.55	₹ 13.20	₹ 12.27
Degree of Financial Leverage	1.00	1.087	1.136	1.11

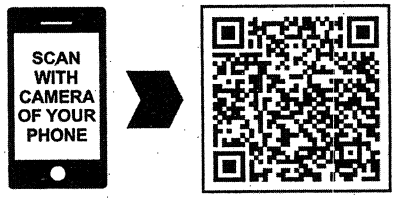
Comment:
From the above analysis we find that EPS as well as degree of financial leverage (DFL) is highest in Financial Plan C. So, Plan C should be accepted. The company should raise ₹ 10 lakhs in equity shares and the balance of ₹ 20 lakhs through long-term borrowing at 9% interest p.a.

2024 - Dec [7] (b) Alpha Pharma Ltd., which has been engaged in business for the last five years, furnishes the following information for its only product Metmorphin Hydrochloride which is being sold at ₹ 23 per unit:

Total Sales:	₹ 1,45,000 units
Fixed Cost:	₹ 2,80,000
Variable Cost:	₹ 17 per unit
Debt Capital:	₹ 10,00,000 @ 11% interest rate
Equity Capital:	₹ 20,00,000

Face Value of each share of the company is ₹ 10.
Tax rate applicable is 30%.

(i) What is the number of units that should be sold so that the Earnings before Taxes (EBT) is equal to zero?
(ii) If Earnings before Interest & Taxes (EBIT) increase to three times the current EBIT, then what is the Earnings after Taxes (EAT)?
(iii) What will be the degree of operating, financial and combined leverage? **(7 marks)**



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Paper 11 Financial Management and Business Data Analytics

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Motivational Thoughts

- Quote: "Leverage magnifies results—whether it's a great idea or a poor decision."
- Thought: Highlight how understanding leverage can help businesses strike the right balance between risk and reward.

Fun Facts

- The word "leverage" originates from the Latin word lever, meaning "to raise." In finance, it symbolizes amplifying returns.
- Some of the largest companies, like Amazon, avoided high financial leverage in their early years to reduce risk.

Checklist for Understanding

- **Leverage:**
  - Types: Operating, Financial, and Combined.
  - Measurement and implications.
- **EBIT-EPS Analysis:**
  - Concepts: EBIT, EPS, Indifference Point.
  - Decision-making based on leverage and financing options.
  - Applications in real-world decision-making.

Fun Flow

- Illustrate leverage types: Sales Revenue - Operating Leverage (Fixed Costs) - EBIT - Financial Leverage (Interest Costs) - Net Profit

Last-Minute Analysis

- Operating Leverage: Impact of fixed costs on EBIT.
- Financial Leverage: Impact of interest on EPS.
- EBIT-EPS Analysis:
- Identify financing options (equity vs. debt).
- Find the indifference point where EPS is the same under both options.

Smart Study Tips

- Focus on understanding the formulas for different leverage types.
- Solve step-by-step problems on EBIT-EPS indifference analysis.

Quick Study Tips

- Memorize formulas using mnemonics like DOF (Degree of Operating, Financial, Combined Leverage).
- Practice with simple scenarios before moving to complex ones.

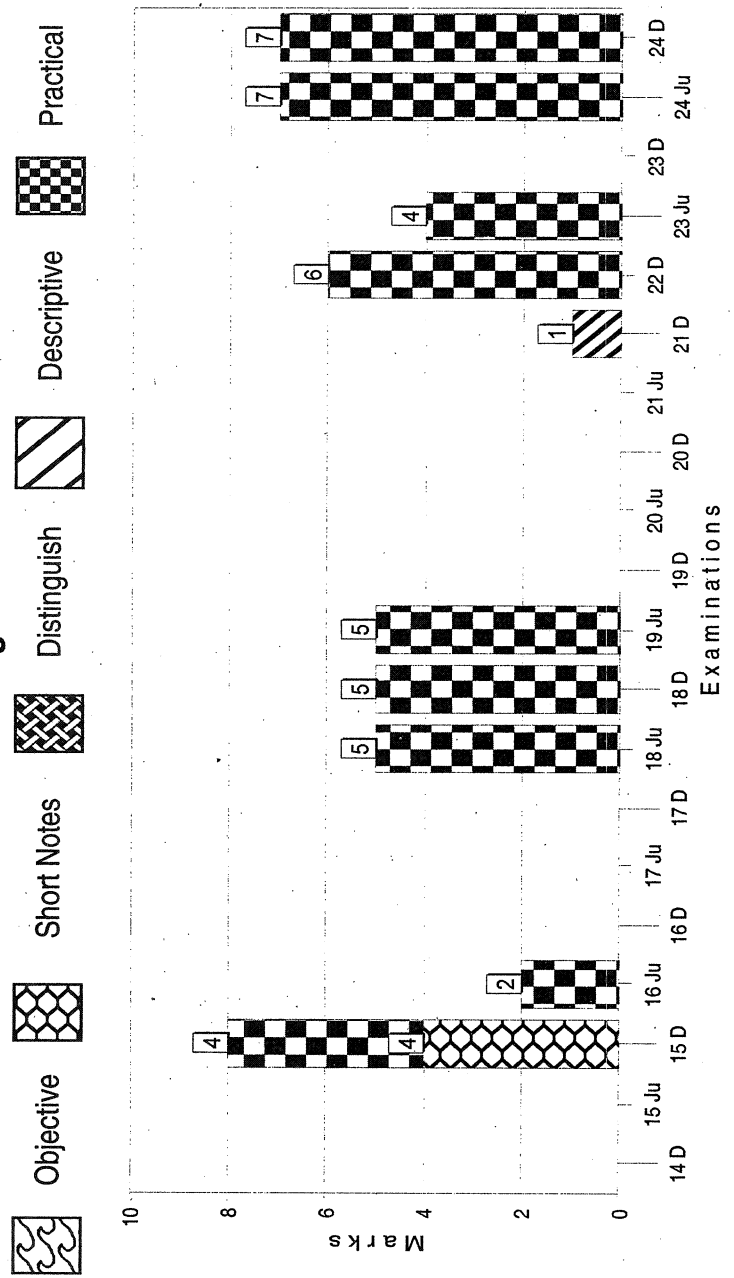
Diagrammatic Representations

- Graph showing the relationship between EBIT and EPS for different financing options.
- Flowchart illustrating the impact of leverage on financial performance.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions



CHAPTER	FINANCING DECISION OF A FIRM
7C	**Dividend Decisions and Dividend Theories**

THIS CHAPTER INCLUDES

1. Definition of Dividend
2. Types of Dividends
3. Dividend Policy
4. Dividend Decision Models
5. Bonus Shares or Stock Dividend
6. Dividend Decision and Tax Considerations

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2015 - Dec [III] (b) (3) Write a short note on the Dividend Irrelevance Theory of Modigliani and Miller. **(4 marks)**

Answer:

Dividend Irrelevance Theory of Modigliani and Miller: This model explains the irrelevance of the dividend policy. When profits are used to declare dividends, the market price increases. At the same time there is a fall in the reserves for reinvestment. Hence for expansion, the company raises additional capital by issuing new shares; increase in the overall number of shares will lead to a fall in the market price per share. Hence the shareholders will be indifferent towards the dividend policy.

Modigliani and Miller stated the reason: The value of the firm is determined by its basic earnings power and its risk class, and therefore, the firm's value depend on its asset investment policy rather than on how earnings are split between dividends and retained earnings.

DESCRIPTIVE QUESTIONS

2021 - Dec [11] Who said - "Investors prefer the early resolution of uncertainty and are willing to pay a higher price of the shares that offer the greater current Dividends" ? **(1 mark) [Sec. B – SAQ]**

Answer :

Myron J Gordon (1962)

PRACTICAL QUESTIONS

2014 - June [6] {C} Answer the following. (No credit will be given for answer without the reasoning)

(c) The earnings of a company = ₹ 5,00,000. Dividend pay out ratio is 60%. The number of shares outstanding = 1,50,000. Equity capitalization rate = 11% and rate of return on investment = 16%. Calculate the market value of the share as per Walter's model. **(2 marks)**

Answer:

Market Value of Shares as per Walter's Model

$$P = \frac{D}{K^e} + \frac{\left(\frac{r}{K_e}\right) \times (E-D)}{K_e}$$

$$= \frac{2}{0.11} + \frac{\left(\frac{0.16}{0.11}\right) \times (\frac{50}{15}-2)}{0.11}$$

$$= 18.18 + \frac{1.45 \times 1.33}{0.11}$$

$$= 18.18 + 17.63$$

$$= ₹\ 35.81$$

2015 - Dec [III] (b) (2) Following are the details regarding two companies A Ltd. and B Ltd.:

Details	A Ltd.	B Ltd.
Internal Rate of Return	15%	5%
Cost of equity capital	10%	10%
Earnings per share	₹ 8	₹ 8

Calculate the value of an equity share of each of these companies according to Walter's model when dividend payout ratio is 75%.

What should be each company's strategy to maximize the market value of its share? **(4 marks)**

Answer:

When DP ratio is 75%, Dividend per share is 75% of ₹ 8 = ₹ 6 per share

Value of an equity share $= \frac{D + (r/k) \times (E - D)}{K}$

Computation of value per share:

Particulars	A Ltd.	B Ltd.
When D/P ratio 75% =	[6 + 0.15/0.10 × 2]/0.10 = ₹ 90	[6 + 0.05/ 0.10 × 2]/0.10 = ₹ 70

Inference:

A Ltd: A Ltd. is treated as Growth firm. IRR exceeds cost of capital. When (r) retained earnings exceeds capitalisation rate (k) the market value per share increases and D/P ratio decreases. The market value per share will be maximum when it retains all its earnings without distributing any dividend. The optimum payment ratio is 0.

B Ltd: B Ltd. is treated as a decline firm. IRR is less than cost of capital. In case of declining firms, where r is less than k, the market value per share increases as D/P ratio increases. It is beneficial to the company if it distributes the earnings to its shareholders.

The market value per share will be maximum when it declares 100% dividend without retaining its earnings optimum D/P ratio is 100% .

2016 - June [1] (I) Answer the following question.

(v) The current market price and expected year-end dividend of an equity share are ₹ 90 and ₹ 4.50 respectively. The dividend growth rate is expected at 7% annually. Compute the cost of capital under the dividend growth model. **(2 marks)**

Answer:

$$K_e = \frac{D_1}{P_0} + g$$

$$= \frac{4.5}{90} + 0.07$$

$$= 0.12 \text{ or } 12\%$$

2018 - June [8] (b)The following information is available for AVANTI CORPORATION:

Earning per Share	₹ 6
Rate of Return on Investment	20%
Rate of Return by Share holders	16 %

Required:

What should be the approximate dividend pay-out ratio so as to keep the share price at ₹ 44 by using Walter Model? **(5 marks)**

Answer:

Let, the dividend pay-out ratio be x and so the share price will be:

$$P = \frac{D}{K_e} + \frac{\frac{r(E-D)}{K_e}}{K_e}$$

Here D = 6x; E = ₹ 6; r = 0..20 and K_e = 0.16 and P = ₹ 44

Hence ₹ 44 = $\frac{6x}{0.16} + \frac{0.2(6-6x)}{0.16 \times 0.16}$

Or ₹ 44 = 37.50x + 46.875 (1 – x)

Or, 9.375x = 2.875

X = 0.3066 i.e. 0.31

So, the required dividend payout ratio will be = 31%.

2018 - Dec [9] (a) You have been provided the following particulars pertaining to the three companies A LTD., B LTD. and D LTD. operating identical business:

Company	A LTD	B LTD	D LTD
EBIT (₹)	15,00,000	15,00,000	15,00,000
No. of Shares	3,00,000	2,50,000	2,00,000
12% debentures (₹)		9,00,000	10,00,000

Every company expects 12% Return on investment (ROI).

Required:

Find out the value of the Companies A LTD., B LTD. and D LTD. and value of their equity shares as per the Modigliani-Miller (MM) approach. **(5 marks)**

Answer:

Calculation of value of each company under Modigliani Miller approach:

Value of Company = $\frac{EBIT}{K_0}$

Company	A LTD.	B LTD.	D LTD.
1. EBIT (₹)	15,00,000	15,00,000	15,00,000
2. ROI = K_0	12%	12%	12%
3. Value of Company $\left[\frac{1}{2}\right]$ (₹)	1,25,00,000	1,25,00,000	1,25,00,000

Calculation of value of equity share for the Companies A Ltd., B Ltd., and D Ltd.

Company	A LTD.	B LTD.	D LTD.
1. Value of Company (₹)	1,25,00,000	1,25,00,000	1,25,00,000
2. Debt (₹)	—	9,00,000	10,00,000
3. Value of equity (1- 2) (₹)	1,25,00,000	1,16,00,000	1,15,00,000

4. No. of equity shares	3,00,000	2,50,000	2,00,000
5. Market price $\left[\frac{3}{4}\right]$(₹)	41.67	46.4	57.5

2019 - June [8] (b) HILSON LTD. was started a year back with equity capital of ₹ 40 lakhs. The other details are as under:

Earnings of the company	₹ 4,00,000
Price Earning ratio	12.5
Dividend paid	₹ 3,20,000
Number of Shares	40,000

Required :

(i) Find the Current Market price of the share, and

(ii) Find whether the Company's D/P ratio is optimal —using Walter's model. **(5 marks)**

Answer:

(i) Walter's model is given by

$$P = \frac{D + (E - D)(r/k_e)}{k_e}$$

Where,

P = Market price per share.

E = Earnings per share = ₹ 10

D = Dividend per share = ₹ 8

r = Return earned on investment = 10%

K_e = Cost of equity capital – 1/12.5 = 8%

$$P = \frac{8 + (10 - 8) \times \frac{0.10}{0.08}}{0.08} = \frac{8 + 2 \times \frac{0.10}{0.08}}{0.08}$$

= ₹ 131.25

(ii) According to Walter's model when the return on investment is more than the cost of equity capital, the price per share increases as the dividend pay-out ratio decreases. Hence, the optimum dividend pay-out ratio in this case is nil.

So, at a pay-out ratio of zero, the market value of the company's share will be:

$$\frac{0 + (10 - 0) \times \frac{0.10}{0.08}}{0.08} = ₹ 156.25$$

2022 - Dec [9] (b) BHT provides you with the following information:

Equity Share Capital (₹ 50 each)	₹ 100 lakhs
12% Preference Share Capital	₹ 50 lakhs
10% Debentures	₹ 50 lakhs
Return on Capital Employed	18.75%
Dividend paid	₹ 12 lakhs
Theoretical Market Price of an equity share under Gordon's Model	₹ 300
Tax Rate	20%

Required:

Determine the theoretical market price of an equity share under Walter's Model. Are you satisfied with the current dividend policy of the company? If not, what should be the optimum payout ratio? **(6 marks)**

Answer:

Market Price of Share as per Walter Formula = 80.892

Recommendation: Current Dividend Policy of the Company is not satisfactory because the company is a growing company (since $r > K_e$) and it is not in favour of the company to pay its profit to the shareholders by way of dividends. Thus the optimum payout ratio for the company should be 0%.

2023 - June [5] (a) (ii) SL Ltd. provides you with the following information:

Equity Share Capital (₹ 50 each)	₹ 100 lakhs
12% Preference Share Capital	₹ 50 lakhs

10% Debentures	₹ 50 lakhs
Return on Capital Employed	18.75%
Total Dividend (including dividend on Preference Shares) paid	₹ 18 lakhs
Theoretical Market Price of an equity share under Gordon's Model	₹ 300
Tax Rate 20%, Market Price of an equity share in the beginning of the year was ₹ 100	

Required: Determine the theoretical market price of an equity share under Walter's Model and M. M. Model. Are you satisfied with the current dividend policy of the company? If not, what should be the optimum payout ratio? **(4 marks)**

Answer:

Market Price of Share as per Walter Model = ₹ 140

Market Price under MM Model: = ₹ 104

The current dividend policy of the company is not satisfactory, due to the fact that the company is a growing company (since r> K_e) and it is not in its favour to pay its profit to the shareholders by way of dividends. Hence, the optimum payout ratio for the company should be 0%.

2024 - June [7] (a) Excel Ltd. has 1,00,000 outstanding shares of ₹ 10 each. The company earns a rate of 24% on its investments and retains 50% of earnings as a policy. If Cost of Capital is 18%, calculate price of the share according of Gordon's Model. The company has total investment of around ₹ 10,00,000 in assets. If payout ratio changes to 10%, 90%, analyze how will the share price change? Infer the optimal dividend policy for Excel Ltd. as per Gordon's Model. **(7 marks)**

Answer:

As per Gordon's Model, value per share = ₹ 20.00

If pay-out ratio = 10% i.e. 0.10, then, retention ratio = 90% = 0.90

Value per share = (-) ₹ 6.67

Now, if pay-out ratio = 90% i.e. 0.90, then, retention ratio = 10% = 0.10

Value per share = ₹ 13.85

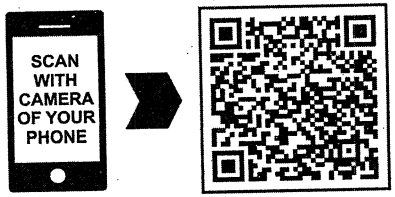
In this case r > k, so the firm is a growth firm. Hence, according to Gordon Model as the retention ratio increases the value per share also increases. Hence, the optimal policy for the firm is to retain as much as possible. Although, according to Gordon, maximum retention ratio should be lower than 0.75.

2024 - Dec [7] (a) Jai & Karti Ltd. has a capital of ₹ 10 lakhs in equity shares of ₹100 each. The shares are currently quoted at par. The company proposes declaration of a dividend of ₹ 10 per share at the end of the current financial year. The capitalization rate for the risk class to which the company belongs is 12%. What will be the market price of the share at the end of the year, if

(i) a dividend is not declared?

(ii) a dividend is declared?

Assuming that the company pays the dividend and has net profits of ₹ 5,00,000 and makes new investments of ₹ 10 lakhs during the period, how many new shares must be issued? **(7 marks)**



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Motivational Thoughts
- Quote: "Dividends are a company's way of saying 'Thank you' to its investors."
- Thought: Highlight how dividend decisions reflect a company's financial health and its future outlook.

Checklist for Understanding
- Definition of dividends and types (cash, stock, bonus shares).
- **Key dividend decisions:**
  - How much to distribute?
  - When to distribute?
- **Dividend theories:**
  - Walter's Model
  - Gordon's Model
  - Modigliani-Miller (MM) Hypothesis.
  - Factors influencing dividend policies.

Fun Facts
- The world's first dividend was paid by the Dutch East India Company in 1602.
- Companies like Apple and Microsoft resumed paying dividends after years of reinvesting all profits.

Fun Flow
- Visualize the dividend decision-making process: Earnings ? Retain (Reinvestment) or Distribute (Dividends) ? Shareholder Returns

Last-Minute Analysis
- **Dividend Policy Types:**
  Regular Dividend Policy.
  Stable Dividend Policy.
  Residual Dividend Policy.
- **Dividend Theories:**
  Walter and Gordon: Dividends affect valuation.
  MM Hypothesis: Dividends are irrelevant in a perfect market.

Smart Study Tips
- Focus on understanding the assumptions behind each dividend theory.
- Practice examples of how dividends impact share prices and firm valuation.

Quick Study Tips
- Memorize key formulas with acronyms like DPS (Dividend Per Share).
- Create a table comparing dividend theories with key points.

Practical Analysis
- Analyze the dividend policies of companies like Infosys (regular dividends) and Amazon (no dividends, reinvestment strategy).
- Evaluate the impact of dividend announcements on stock prices.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER

8

Introduction to Data Science for Business Decision - Making

THIS CHAPTER INCLUDES

1. Meaning, Nature, Properties, Scope of Data
2. Types of Data in Finance and Costing
3. Digitization of Data and Information
4. Transformation of Data to Decision Relevant Information
5. Communication of Information for Quality Decision-making
6. Professional Skepticism regarding Data
7. Ethical Use of Data and Information

PAST YEAR QUESTIONS AND ANSWERS

DISTINGUISH BETWEEN

2014 - June [2A] (Or) Differentiate the following:
(iii) 'Data', 'information' and 'knowledge'. **(4 marks)** ***[CS Prof. M-II]***

Answer:

- **Data:** It is a raw representation of information. It includes facts and figures collected together for reference or analysis. It can be numbers, words, measurements, observations or even just descriptions of things. Data alone are insufficient unless they are processed.
- **Information:** Information can be defined as facts provided or learned about something or someone. It can be defined as data that has been verified to be accurate and timely. It is specific, organized and presented for a purpose. Information can be extracted only after processing the data.

- **Knowledge:** By knowledge we mean human understanding of a subject matter that has been acquired through proper study and experience. It is usually based on learning, thinking, and proper understanding of the problem area. It is derived from information in the same way information is derived from data. It can be considered as the integration of human perceptive processes that helps them to draw meaningful conclusions.

DESCRIPTIVE QUESTIONS

2023 - June [4] (b) Explain briefly the five basic principles of data ethics that a business organization should follow. **(7 marks)**

Answer:

The five basic principles of data ethics that a business organization should follow are:

(i) **Regarding ownership:** The first principle is that ownership of any personal information belongs to the person. It is unlawful and unethical to collect someone's personal data without their consent. The consent may be obtained through digital privacy policies or signed agreements or by asking the users to agree with terms and conditions. It is always advisable to ask for permission beforehand to avoid future legal and ethical complications. In case of financial data, some data may be sensitive in nature. Prior permission must be obtained before using the financial data for further analysis.

(ii) **Regarding transparency:** Maintaining transparency is important while gathering data. The objective with which the company is collecting user's data should be known to the user. For example is the company is using cookies to track the online behaviour of the user, it should be mentioned to the user through a written policy that cookies would be used for tracking user's online behaviour and the collected data will be stored in a secure database to train an algorithm to enhance user experience. After reading the policy, the user may decide to accept or not to accept the policy. Similarly, while collecting the financial data from clients, it should be clearly mentioned that for which purpose the data should be used.

(iii) **Regarding privacy:** As the user may allow collecting, store and analyze the personally identifiable information (PII), that does not imply

it should be made publicly available. For companies, it is mandatory to publish some financial information to public e.g. through annual reports. However, there may be many confidential information, which if falls on a wrong hand may create problems and financial loss. To protect privacy of data, a data security process should be in place. This may include file encryption and dual authentication password etc. The possibility of breach of data privacy may also be done through de-identifying a dataset.

(iv) **Regarding intention:** The intension of data analysis should never be making profits out of others weaknesses or for hurting others. Collecting data which is unnecessary for analysis should be avoided and it's unethical.

(v) **Regarding outcomes:** In some cases, even if the intentions are good, the result of data analysis may inadvertently hurt the clients and data providers. This is called disparate impact, which is unethical

2023 - Dec [8] (a) 'Transformation of Data to Decision Relevant Information requires to go through certain core steps.' – In the light of the given statement, explain the steps to transform data into information. **(7 marks)**

Answer:

To make the data turn into user friendly information, it should go through six core steps:

1. **Collection of data:** The collection of data may be done with standardized systems in place. Appropriate software and hardware may be used for this purpose. Appointment of trained staff also plays an important role in collecting accurate and relevant data.
2. **Organising the data:** The raw data needs to be organized in an appropriate manner to generate relevant information. The data may be grouped, arranged in a manner that create useful information for the target user groups.
3. **Data processing:** At this step, data needs to be cleaned to remove the unnecessary elements. If any data point is missing or not available, that also need to be addressed. The options available for presentation format for the data also need to be decided.
4. **Integration of data:** Data integration is the process of combining data from various sources into a single, unified form. This step include creation of data network sources, a master server and users accessing

the data from master server. Data integration eventually enables the analytics tools to produce effective, actionable business intelligence.

5. **Data reporting:** Data reporting stage involves translating the data into a consumable format to make it accessible by the users. **For example,** for a business firm, they should be able to provide summarized financial information e.g. revenue, net profit etc. The objective is, a user, who wants to understand the financial position of the company should get the relevant and accurate information.
6. **Data utilization:** At this ultimate step, data is being utilized to back corporate activities and enhance operational efficiencies and productivity for the growth of business. This makes the corporate decision making really 'data driven'.

2024 - June [8] (a) Data plays a very important role in the study of finance and cost accounting. Explain the various ways of classifying the types of data. **(7 marks)**

Answer:

There are different ways data can be classified. These are:

1. **Quantitative financial data:** By the term 'quantitative data', we mean the data stated in numbers. The stock price data, financial statements etc. are instance of quantitative data.
2. **Qualitative financial data:** Although, some data in financial studies may appear in a qualitative format e.g. text, videos, audio etc. These types of data may be very useful for financial analysis.

There is other way of classifying the types of data. The data may be classified also as:

1. **Nominal Scale:** Nominal scale is being used for categorizing data. The category labels may contain numbers but have no numerical value. For instance, classifying equities into small-cap, mid-cap, and large-cap categories or classifying funds as equity funds, debt funds, and balanced funds etc.
2. **Ordinal Scale:** Ordinal scale is being used for classifying and put it in order. The numbers just indicate an order. They do not specify how much better or worse a stock is at a specific price compared to one with a lower price. For instance, the top 10 stocks by P/E ratio.

3. **Interval scale:** Interval scale is used for categorizing and ranking using an equal interval scale. Equal intervals separate neighbouring scale values.

   The temperature of 40 degrees is 5 degrees higher than that of 35 degrees. The issue is that a temperature of 0 degrees Celsius does not indicate the absence of temperature.
4. **Ratio scale:** The ratio scale possesses all characteristics of the nominal, ordinal, and interval scales.

   The acquired data can not only be classified and rated on a ratio scale, but also have equal intervals. A ratio scale has a true zero.

   For instance, length, time, mass, money, age, etc. are typical examples of ratio scales.

2024 - Dec [8] (a) What do you mean by Data Ethics? Discuss the five basic principles of Data Ethics that a business organisation should follow. **(7 marks)**

Motivational Thoughts
- Quote: "Dividends are a company's way of saying 'Thank you' to its investors."
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Practical Analysis
- Analyze the dividend policies of companies like Infosys (regular dividends) and Amazon (no dividends, reinvestment strategy).
- Evaluate the impact of dividend announcements on stock prices.

Real-World Experience
- Example: How Coca-Cola maintains a high dividend payout ratio to attract investors.
- Case: Why Tesla chooses to reinvest profits over paying dividends.

Storytelling
- Case Study: How Apple introduced dividends after years of being a growth-focused company.
- The story of a shareholder analyzing dividend income vs. capital gains.

Diagrammatic Representations
- Flowchart of dividend decision-making process.
- Graph showing share price movements post-dividend announcement.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER	
9	**Data Processing, Organisation, Cleaning and Validation**

THIS CHAPTER INCLUDES

1. Development of Data Processing
2. Functions of Data Processing
3. Data Organization and Distribution
4. Data Cleaning and Validation

PAST YEAR QUESTIONS AND ANSWERS

DESCRIPTIVE QUESTIONS

2023 - June [5] (b) What is Data Cleaning? What are the Steps for data cleaning? What are the benefits of data cleaning? **(1 + 2 + 2 = 5 marks)**

Answer:

Data cleaning is the process of correcting or deleting inaccurate, corrupted, improperly formatted, duplicate, or insufficient data from a dataset.

- **Steps for data cleaning:**
  - (i) Step 1: Removal of duplicate and irrelevant information:
  - (ii) Step 2: Fix structural errors:
  - (iii) Step 3: Filter unwanted outliers:
  - (iv) Step 4: Handle missing data:
  - (v) Step 5: Validation and QA:
- **Benefits of data cleaning:**
  - (i) Error correction when numerous data sources are involved.
  - (ii) Fewer mistakes result in happier customers and less irritated workers.

(iii) Capability to map the many functions and planned uses of your data.
(iv) Monitoring mistakes and improving reporting to determine where errors are originating can make it easier to repair inaccurate or damaged data in future applications.
(v) Using data cleaning technologies will result in more effective corporate procedures and speedier decision-making.

TOPIC NOT YET ASKED BUT EQUALLY IMPORTANT FOR THE EXAMINATION

SHORT NOTES

Q. 1. Write a short note on binomial distribution.
Answer:
Binomial distributions: The binomial distribution quantifies the chance of obtaining a specific number of successes or failures each experiment.
Binomial distribution applies to attributes that are categorised into two mutually exclusive and exhaustive classes, such as number of successes/failures and number of acceptances/rejections.
Example: When tossing a coin: The likelihood of a coin falling on its head is one-half and the probability of a coin landing on its tail is one-half.

Q. 2. Write a short note on 'predictive analytics'.
Answer:
Predictive Analytics: Predictive analytics enables organisations in the financial sector to extrapolate from existing data and anticipate what may occur in the future, including how patterns may evolve. When prediction is necessary, machine learning is utilised. Using machine learning techniques, pre-processed data may be input into the system in order for it to learn how to anticipate future occurrences accurately.
More information improves the prediction model. Typically, for an algorithm to function in shallow learning, the data must be cleansed and altered. Deep learning, on the other hand, changes the data without the need for human

preparation to establish the initial rules, and so achieves superior performance.
In the case of stock market pricing, machine learning algorithms learn trends from past data in a certain interval (may be a week, month, or quarter) and then forecast future stock market trends based on this historical information. This allows data scientists to depict expected patterns for end-users in order to assist them in making investment decisions and developing trading strategies.

DESCRIPTIVE QUESTIONS

Q. 1. Elaborately discuss the various steps involved in data cleaning.
Answer:
Steps for data cleaning:
(i) **Step 1: Removal of duplicate and irrelevant information**
Eliminate unnecessary observations from your dataset, such as duplicate or irrelevant observations. Most duplicate observations will occur during data collecting. When you merge data sets from numerous sites, scrape data, or get data from customers or several departments, there are potential to produce duplicate data. De-duplication is one of the most important considerations for this procedure.
Observations are deemed irrelevant when they do not pertain to the specific topic you are attempting to study.
(ii) **Step 2: Fix structural errors:**
When measuring or transferring data, you may detect unusual naming standards, typos, or wrong capitalization. These contradictions may lead to mislabeled classes or groups. For instance, "N/A" and "Not Applicable" may both be present, but they should be examined as a single category.
(iii) **Step 3: Filter unwanted outliers:**
Occasionally, you will encounter observations that, at first look, do not appear to ft inside the data you are evaluating. If you have a valid

cause to eliminate an outlier, such as erroneous data input, doing so will improve the performance of the data you are analysing. Occasionally, though, the arrival of an outlier will prove a notion you're working on. Remember that the existence of an outlier does not imply that it is erroneous.

(iv) **Step 4: Handle missing data**

Many algorithms do not accept missing values, hence missing data cannot be ignored. There are several approaches to handle missing data. Although neither is desirable, both should be explored.

As a first alternative, the observations with missing values may be dropped, but doing so may result in the loss of information. This should be kept in mind before doing so.

As a second alternative, the missing numbers may be entered based on other observations. Again, there is a chance that the data's integrity may be compromised, as action may be based on assumptions rather than real observations.

(v) **Step 5: Validation and QA**

As part of basic validation, one should be able to answer the following questions at the conclusion of the data cleansing process:

(a) Does the data make sense?
(b) Does the data adhere to the regulations applicable to its field?
(c) Does it verify or contradict your working hypothesis, or does it shed any light on it?
(d) Can data patterns assist you in formulating your next theory?
(e) If not, is this due to an issue with data quality?

Q. 2. Discuss the benefits of 'data cleaning'.

Answer:

Benefits of data cleaning

Ultimately, having clean data would boost overall productivity and provide with the greatest quality information for decision-making. Benefits include:

(i) Error correction when numerous data sources are involved.
(ii) Fewer mistakes result in happier customers and less irritated workers.
(iii) Capability to map the many functions and planned uses of your data.

(iv) Monitoring mistakes and improving reporting to determine where errors are originating can make it easier to repair inaccurate or damaged data in future applications.
(v) Using data cleansing technologies will result in more effective corporate procedures and speedier decision-making.

Q. 3. Discuss the steps for effective data classification.

Answer:

Steps for effective data classification

- **Understanding the current setup:** Taking a comprehensive look at the location of the organization's current data and any applicable legislation is likely the best beginning point for successfully classifying data. Before one classifies data, one must know what data he is having.
- **Creation of a data classification policy:** Without adequate policy, maintaining compliance with data protection standards in an organisation is practically difficult. Priority number one should be the creation of a policy.
- **Prioritize and organize data:** Now that a data classification policy is in place, it is time to categorise the data. Based on the sensitivity and privacy of the data, the optimal method to be chosen for tagging it.

Motivational Thoughts

- Quote: "Clean data is like clean water: essential for everything it touches."
- Thought: Emphasize how effective data processing and validation are the foundation of accurate decision-making.

Checklist for Understanding

- Definition and importance of data processing.
- **Steps in data processing:**
  - Data Collection
  - Organisation
  - Cleaning
  - Validation
  - Techniques for data cleaning and validation.
  - Tools used for organizing and cleaning data.

Fun Facts

- About 80% of a data scientist's time is spent cleaning and organizing data before analysis.
- The term "garbage in, garbage out" (GIGO) originated in early computing to stress the importance of data quality.

Fun Flow

- Visualize the process: Raw Data - Organisation - Cleaning - Validation - Usable Data

Smart Study Tips

- Focus on common data cleaning techniques like deduplication, dealing with missing values, and standardization.
- Learn tools like Excel and Python libraries (e.g., Pandas) for organizing and cleaning data.

Last-Minute Analysis

- **Key Concepts:**
  Cleaning: Removing duplicates, filling missing values, correcting errors.
  Validation: Ensuring data accuracy, consistency, and completeness.
- **Checklist:**
  Is data free from errors?
  Are formats standardized?
  Are inconsistencies resolved?

Quick Study Tips

- Memorize steps with acronyms like OCV (Organise, Clean, Validate).
- Practice with small datasets to master cleaning techniques.

Practical Analysis

- Clean and validate a messy dataset (e.g., customer records with missing phone numbers or duplicate entries).
- Study how errors in data processing led to flawed results in real-world scenarios.

Real-World Experience

- Example: How Netflix organizes and cleans data for accurate user recommendations.
- Case: How Uber ensures data accuracy for efficient ride matching.

Storytelling

- Case Study: A small business fixing customer records to improve marketing campaigns.
- The story of a data analyst uncovering critical insights after cleaning and validating messy data.

THE GRAPH

Chapter Trend Analysis

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER 10	Data Presentation: Visualisation and Graphical Presentation

THIS CHAPTER INCLUDES

1. Data Visualisation of Financial and Non-financial Data
2. Objective and Function of Data Presentation
3. Data Presentation Architecture
4. Dashboard, Graphs, Diagrams, Tables, Report Design
5. Tools and Techniques of Visualisation and Graphical Presentation

QUICK LOOK	*Weightage Analysis*
Repeatedly Asked Questions	
2023 - June [8] (a) (i), 2024 - June [8] (b)	

PAST YEAR QUESTIONS AND ANSWERS

DESCRIPTIVE QUESTIONS

2023 - June [8] (a) List the following:

(i) Steps involved in using Data Visualisation in report design

(ii) Objectives of Data Visualisation

(iii) Important four issues which the presenter should keep in mind for effective Data Visualisation

(iv) List any four Tools for visualising and presenting the data.

(2.5 + 1.5 + 2 + 2 = 8 marks)

Answer:

(i) **Steps involved in using Data Visualisation in report design:**
1. Find a story in the Data
2. Create a narrative
3. Choose the most suitable Data Visualisation
4. Follow the visual language
5. Publicize the report

(ii) **Objectives of Data Visualisation:**
1. Making a better data analysis
2. Faster decision making
3. Analysing complicated data

(iii) **Important issues which the presenter should keep in mind for effective data Visualisation.**
1. Know the objective
2. Always keep the audience in mind
3. Invest in the best technology
4. Improve the team's ability to visualise data
5. Tools for visualising and presenting the data

(iv) **Any four Tools for visualising and presenting the data.**
Data visualisation is the visual depiction of data and information. Through the use of visual elements like dashboards, charts, graphs, and maps etc, data visualisation tools facilitate the identification and comprehension of trends, outliers, and patterns in data.
1. Dashboards
2. Bar charts
3. Histogram
4. Pie chart
5. Line chart
6. Maps
7. Gantt chart
8. Bubble Chart etc.

2023 - June [8] (b) State the meaning, objectives and scope of Data Presentation Architecture (DPA). **(1 + 2 + 4 = 7 marks)**

Answer:

Data Presentation Architecture (DPA) is a rarely applied skill set critical for the success and value of Business Intelligence. Data presentation

architecture weds the science of numbers, data and statistics in discovering valuable information from data and making it usable, relevant and actionable with the arts of data visualization, communications, organizational psychology and change management in order to provide business intelligence solutions with the data scope, delivery timing, format and visualizations that will most effectively support and drive operational, tactical and strategic behaviour toward understood business (or organizational) goals.

There are following objectives of DPA:

(i) Utilize data to impart information in the most efficient method feasible (provide pertinent, timely and comprehensive data to each audience participant in a clear and reasonable manner that conveys important meaning, is actionable and can affect understanding, behaviour and decisions).

(ii) To utilise data to deliver information as effectively as feasible (minimise noise, complexity, and unneeded data or detail based on the demands and tasks of each audience).

Scope of DPA

In the light of abovementioned objectives, the scope of DPA may be defined as:

(i) Defining significant meaning (relevant information) required by each audience member in every scenario.

(ii) Obtaining the proper data (focus area, historic reach, extensiveness, level of detail, etc.)

(iii) Determining the needed frequency of data refreshes (the currency of the data)

(iv) Determining the optimal presentation moment (the frequency of the user needs to view the data)

(v) Using suitable analysis, categorization, visualisation, and other display styles

(vi) Developing appropriate delivery techniques for each audience member based on their job, duties, locations, and technological access

2024 - June [8] (b) Describe the steps to include data visualization in report design. **(7 marks)**

Answer:

There are few strategic steps to include Data Visualisation in report design, as notes below:

1. **Find a story in the data:** Data-driven storytelling is a powerful tool. Finding a story that connects with the reader can help to create an effective report.

   It's also not that hard as it looks. In order to locate the story, one must arrange the data, identify any missing numbers, and then check for outliers.

2. **Create a narrative:** When some individuals hear the term "data storytelling," they believe that it consists of a few statistics and that the task is complete. This is a frequent misconception that is false.

   Strong data storytelling comprises an engaging narrative that takes the audience through the facts and aids in their comprehension.

   Also, an explanation of the significance of these ideas is essential. To compose an excellent story, one must:

   (i) Engage the viewer with a catchy title and subheadings.
   (ii) Incorporate context into the data.
   (iii) Create a consistent and logical flow.
   (iv) Highlight significant discoveries and insights from the data.

3. **Choose the most suitable data Visualisation:** Data Visualisation is not limited to the creation of charts and graphs. It involves presenting the facts in the most comprehensible chart possible.

   Applying basic design principles and utilising features like as form, size, colour, and labelling may have a significant impact on how people comprehend the data.

   For example, deciding the optimal number of slices for a pie chart or the space between bars in a bar graph. Knowing these tips may greatly improve the data visualisations.

4. **Follow the visual language:** The report design may be for internal or external consumption. Despite this, one should develop material consistent with the company's style guide.

   It is essential to adhere to data visualisation principles in order to achieve both uniformity and comprehension.

5. **Publicize the report:** Some reports are not intended for public consumption. Although, since they include so much essential information, they may contain knowledge that is of interest to individuals or media outside of the business.

TOPIC NOT YET ASKED BUT EQUALLY IMPORTANT FOR THE EXAMINATION

SHORT NOTES

Q. 1. Write a short note on bar chart

Answer:

Bar Chart: Bar graphs are one of the most used types of data visualisation. It may be used to easily compare data across categories, highlight discrepancies, demonstrate trends and outliers, and illustrate historical highs and lows. Bar graphs are very useful when the data can be divided into distinct categories. For instance, the revenue earned in different years, the number of car model produced in a year by an automobile company, change in economic value added over the years etc.

To add a zing, the bars can be made colourful. Using stacked and side-by-side bar charts, one may further dissect the data for a more in-depth examination.

Q. 2. Write a short note on density map.

Answer:

Density map: Density maps indicate patterns or relative concentrations that might otherwise be obscured by overlapping marks on a map, allowing to identify areas with a larger or lesser number of data points. Density maps are particularly useful when dealing with large data sets including several data points in a limited geographic region.

DESCRIPTIVE QUESTIONS

Q. 1. State the objectives of Data presentation architecture (DPA).
Answer:
There are following objectives of DPA:

(i) Utilize data to impart information in the most efficient method feasible (provide pertinent, timely and comprehensive data to each audience participant in a clear and reasonable manner that conveys important meaning, is actionable and can affect understanding, behaviour and decisions).
(ii) To utilise data to deliver information as effectively as feasible (minimise noise, complexity, and unneeded data or detail based on the demands and tasks of each audience).

Q. 2. What are the scopes of Data presentation architecture (DPA).
Answer:
The scope of DPA may be defined as:

(i) Defining significant meaning (relevant information) required by each audience member in every scenario.
(ii) Obtaining the proper data (focus area, historic reach, extensiveness, level of detail, etc.)
(iii) Determining the needed frequency of data refreshes (the currency of the data)
(iv) determining the optimal presentation moment (the frequency of the user needs to view the data)
(v) Using suitable analysis, categorization, visualisation, and other display styles
(vi) Developing appropriate delivery techniques for each audience member based on their job, duties, locations, and technological access

Q. 3. Define the concept of data visualization dashboard.
Answer:
A data visualisation dashboard is an interactive dashboard that enables to manage important metrics across numerous financial channels, visualise the data points, and generate reports for customers that summarise the results. Creating reports for your audience is one of the most effective means of establishing a strong working relationship with them. Using an interactive data dashboard, the audience would be able to view the performance of their company at a glance.
On addition to having all the data in a single dashboard, a data visualisation dashboard helps to explain what the company is doing and why, also fosters client relationships, and gives a data set to guide decision-making.
There are numerous levels of dashboards, ranging from those that represent metrics vital to the firm as a whole to those that measure values vital to teams inside an organisation. For a dashboard to be helpful, it must be automatically or routinely updated to reflect the present condition of affairs.

Q. 4. Discuss the objectives of data visualization.
Answer:
Objectives of data visualisation:

- **Making a better data analysis:** Analysing reports assists company stakeholders' in focusing their attention on the areas that require it. The visual mediums aid analysts in comprehending the essential business issues. Whether it is a sales report or a marketing plan, a visual representation of data assists businesses in increasing their profits through improved analysis and business choices.
- **Faster decision making:** Visuals are easier for humans to process than tiresome tabular forms or reports. If the data is effectively communicated, decision-makers may move swiftly on the basis of fresh data insights, increasing both decision-making and corporate growth.
- **Analysing complicated data:** Data visualisation enables business users to obtain comprehension of their large quantities of data. It is advantageous for them to identify new data trends and faults. Understanding these patterns enables users to focus on regions that suggest red flags or progress. In turn, this process propels the firm forward.

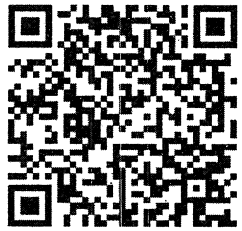
Q. 5. How to use data visualization in report design?
Answer:
There are few strategic steps to include data visualization in report design, as mentioned below:

- **Find a story in the data:** Data-driven storytelling is a powerful tool. Finding a story that connects with the reader can help to create an

effective report. It's also not that hard as it looks. In order to locate the story, one must arrange the data, identify any missing numbers, and then check for outliers. One may then view the data and examine the link between factors.

- **Create a narrative:** When some individuals hear the term "data storytelling," they believe that it consists of a few statistics and that the task is complete. This is a frequent misconception that is false. Strong data storytelling comprises an engaging narrative that takes the audience through the facts and aids in their comprehension. Moreover, an explanation of the significance of these ideas is essential. To compose an excellent story, one must:
  (i) Engage the viewer with a catchy title and subheadings.
  (ii) Incorporate context into the data.
  (iii) Create a consistent and logical flow.
  (iv) Highlight significant discoveries and insights from the data.
- **Choose the most suitable data visualization:** Data Visualization is not limited to the creation of charts and graphs. It involves presenting the facts in the most comprehensible chart possible. Applying basic design principles and utilising features like as form, size, colour, and labelling may have a significant impact on how people comprehend the data. For instance, deciding the optimal number of slices for a pie chart or the space between bars in a bar graph. Knowing these tips may greatly improve the data visualisations.
- **Follow the visual language**
  The report design may be for internal or external consumption. Despite this, one should develop material consistent with the company's style guide. It is essential to adhere to data visualisation principles in order to achieve both uniformity and comprehension. A strategic methodology assists in implementation.
- **Publicize the report:** Some reports are not intended for public consumption. However, since they include so much essential information, they may contain knowledge that is of interest to individuals or media outside of the business.

Paper 11 Financial Management and Business Data Analytics

Feedback	I Need More	Scanner Preparation Key
		
Scan to Share your Experience	Scan for Quick Assistance	Scan & go to "My Books"

Motivational Thoughts

- Quote: "Data is a story waiting to be told, and visuals are the language that brings it to life."
- Thought: Effective data visualization turns numbers into actionable insights and compelling narratives.

Checklist for Understanding

- Basics of data presentation and visualization.
- **Types of visualizations:**
  - Bar Charts, Pie Charts, Line Graphs.
  - Scatter Plots, Heat Maps, Dashboards.
  - Tools for visualization: Excel, Tableau, Power BI.
- **Principles of effective visual presentation:**
  - Simplicity
  - Clarity
  - Relevance

Fun Facts
- Florence Nightingale, the pioneer of nursing, was also a data visualization innovator, using pie charts to highlight healthcare issues.
- The world's first infographic dates back to the 1600s: a diagram of planetary movements by Christoph Scheiner.

Fun Flow
- Visualize the process: Raw Data - Analysis - Selection of Visualization Type - Creation of Chart/Graph ? Insights

Last-Minute Analysis
- **Key Considerations:**
  - Choose the right type of graph for your data.
  - Ensure data accuracy and clear labeling.
  - Avoid clutter for better readability.
- **Common Graph Types:**
  - Comparison: Bar Chart, Line Graph.
  - Proportion: Pie Chart.
  - Trends: Line Graph.
  - Relationships: Scatter Plot.

Smart Study Tips
- Focus on one visualization type at a time; understand its purpose and use.
- Practice creating simple graphs using tools like Excel or Google Sheets.

Quick Study Tips
- Memorize graph purposes using acronyms like CPT-R (Comparison, Proportion, Trends, Relationships).
- Keep graphs simple and always label axes and legends.

Practical Analysis
- Compare sales trends using line graphs.
- Use scatter plots to identify correlations between variables (e.g., marketing spend vs. sales).

Real-World Experience
- Example: How Google Analytics visualizes website traffic data using dashboards.
- Case: How Tesla uses heat maps for factory floor efficiency.

Storytelling
- Case Study: How Spotify visualizes user listening habits to personalize recommendations.
- Story of a marketing manager using dashboards to monitor campaign performance.

Fun Mnemonics
- **CLEAR for effective visualization:**
  - Communicate
  - Label Properly
  - Eliminate Clutter
  - Accuracy
  - Relevance

Diagrammatic Representations
- Comparative table of graph types and their purposes.
- Flowchart of the data visualization creation process.

Motivational Case Studies
- How Netflix uses visual dashboards to monitor content performance.
- How Procter & Gamble leverages visual analytics for supply chain optimization.

Chapter Trend Analysis

THE GRAPH

Marks of objective, Short Notes, Distinguish Between, Descriptive & Practical Questions

CHAPTER 11 Data Analysis and Modelling

THIS CHAPTER INCLUDES

1. Process, Development and Types of Data Analysis
2. Data Mining and Implementation of Data Analysis
3. Analytics and Model Building (Descriptive, Diagnostic, Predictive, Prescriptive)
4. Standards for Data Tagging and Reporting (XML, XBRL)
5. Cloud Computing, Business Intelligence, Artificial Intelligence, Robotic Process Automation and Machine Learning
6. Model vs. Data-driven Decision-making

PAST YEAR QUESTIONS AND ANSWERS

SHORT NOTES

2014 - June [3A] (Or) Write a note on the following:
(i) Cloud computing **(4 marks)** ***[CS Prof. M-II]***

Answer:

Cloud computing is defined as utilization of computing services, i.e. software as well as hardware as a service over a network. Typically, this network is the internet.

Some of the benefits of cloud computing are as follows:

1. Cloud computing reduces IT infrastructure cost of the company.
2. Cloud computing promotes the concept of virtualization, which enables server and storage device to be utilized across organization.
3. Cloud computing makes maintenance of software and hardware easier as installation is not required on each end user's computer.

Some issues concerning cloud computing are privacy, compliance, security, legal, abuse, IT governance, etc.

DESCRIPTIVE QUESTIONS

2014 - June [3] Answer the following:
(c) What is 'data mining'? State two of its uses for a business organisation. **(4 marks)** ***[CS Prof. M-II]***

Answer:
Data mining is a process of extracting hidden predictive information from large databases. It involves the use of various data analysis tools to discover new facts, valid patterns and relationships in large data sets.

It is a powerful new technology to help companies focus on the most important information in their data warehouses.

Providing long term business projections: Data mining techniques have enabled organizations to collect, analyze and access data in new ways. As companies have started collecting and saving basic data in computers, they are now able to answer detailed questions quicker and with more ease.

Help in predicting unknown or future values: Data mining tools predict future trends and behaviors, by reading through databases for hidden patterns, they allow organizations to make proactive, knowledge-driven decisions and answer questions that were previously too time-consuming to resolve.

2023 - Dec [2] (b) Define Prescriptive Analytics and explain how it works. **(7 marks)**

Answer:
Definition of Prescriptive Analytics:
Descriptive analytics describes what has occurred, diagnostic analytics explore why it occurred, predictive analytics describes what could occur, and prescriptive analytics describes what should be done. This approach is the fourth, final, and most sophisticated step of the business analysis process, and it is the one that urges firms to action by assisting executives, managers, and operational personnel in making the most informed decisions possible based on the available data.

How does the prescriptive analytics work?
Prescriptive analytics goes one step farther than descriptive and predictive analysis by advising the best potential business actions. This is the most sophisticated step of the business analytics process, needing significantly more specialised analytics expertise to execute; as a result, it is rarely utilised in daily company operations.

A multitude of approaches and tools - such as rules, statistics, and machine learning algorithms - may be used to accessible data, including internal data (from within the business) and external data, in order to produce predictions and recommendations (such as data derived from social media). The capabilities of machine learning dwarf those of a human attempting to attain the same outcomes.

The widespread misconception is that predictive analytics and machine learning are same. While predictive analytics uses historical data and statistical techniques to make predictions about the future, machine learning, a subset of artificial intelligence, refers to a computer system's ability to understand large and often enormous amounts of data without explicit instructions, and to adapt and become increasingly intelligent as a result.

Predictive analytics predicts what, when, and, most importantly, why something may occur. After analysing the potential repercussions of each choice alternative, suggestions may be made regarding which options would best capitalise on future opportunities or reduce future hazards.

Effectively conducted prescriptive analytics may have a significant impact on corporate strategy and decision making to enhance production, customer experience, and business success.

2023 - Dec [8] (b) 'Data Analytics is the science of evaluating unprocessed data sets to get some conclusions.' In the context of the given statement, briefly explain the steps of Data Analytics. **(7 marks)**

Answer:
Process of data analytics
Following are the steps for data analytics:

(a) **Step 1: Criteria for grouping data:**
Data may be segmented by a variety of parameters, including age, population, income, and sex. The data values might be either numeric or category.

(b) **Step 2: Collecting the data:**
Data may be gathered from several sources, including internet sources, computers, personnel, and community sources.

(c) **Step 3: Organizing the data:**
After collecting the data, it must be arranged so that it can be analysed. Statistical data can be organised on a spreadsheet or other programme capable of handling statistical data.

(d) **Step 4: Cleaning the data:**
The data is initially cleansed to verify that there are no duplicates or errors. The document is then examined to ensure that it is comprehensive. Before data is sent to a data analyst for analysis, it is beneficial to rectify or eliminate any errors by cleaning the data.

(e) **Step 5: Adopt the right type of data analytics process:**
There are four types of data analytics process:
(i) Descriptive analytics
(ii) Diagnostics analytics
(iii) Predictive analytics
(iv) Prescriptive analytics

2024 - June [2] (b) 'The implementation of data mining in Finance and Management is one of the important segment of Business Data Analytics'. In this context, briefly illustrate the data mining applications. **(7 marks)**

Answer:

Utilizing data mining techniques, hidden patterns and future trends and behaviours in financial markets may be predicted. Typically, sophisticated statistical, mathematical, and artificial intelligence approaches are necessary for data mining, particularly for high-frequency financial data.

Among the data mining applications are:

1. **Detecting money laundering and other financial crimes:** Money laundering is the illegal conversion of black money to white money. In today's society, data mining techniques have advanced to the point where they are deemed suitable for detecting money laundering.
2. **Prediction of loan repayment and customer credit policy analysis:** Loan Distribution is the core business function of every bank. The loan Prediction system automatically computes the size of the characteristics it employs and examines data pertaining to its size.

3. **Target marketing:** Together, data mining and marketing work to target a certain market, and they also assist and determine market decisions. With data mining, it is possible to keep earnings, margins, etc. and determine which product is optimal for various types of customers.
4. **Design and construction of data warehouses:** The business is able to retrieve or move the data into several huge data warehouses, allowing a vast volume of data to be correctly and reliably evaluated with the aid of various data mining methodologies and techniques. It also examines a vast number of transactions.

2024 - Dec [2] (b) What do you mean by Descriptive Analytics? Explain the information revealed by Descriptive Analytics. **(7 marks)**

2024 - Dec [8] (b) What is Business Intelligence (BI)? List the procedures to which the use of BI has expanded. **(7 marks)**

Fun Flow

- Visualize the process: Raw Data - Analysis - Model Building - Insights - Strategic Decisions

Motivational Thoughts
- Quote: "Data analysis turns information into knowledge, and knowledge into action."
- Thought: Highlight how mastering data analysis and modeling can transform raw data into actionable business strategies.

Checklist for Understanding
- What is data analysis and its importance in decision-making?
- **Types of analysis:**
  - Descriptive, Predictive, and Prescriptive.
- **Introduction to data modeling:**
  - Linear, Regression, Time-Series, Machine Learning.
  - Tools for analysis and modeling: Excel, Python, R, Tableau.

Fun Facts
- Amazon uses predictive modeling to forecast inventory needs, saving millions annually.
- The concept of regression analysis dates back to the 19th century, introduced by Sir Francis Galton.

Last-Minute Analysis
- **Key Concepts:**
  - Data preprocessing: Cleaning, transforming data.
  - Types of models: Linear regression, clustering, and decision trees.
- **Questions to Ask:**
  - Is the data clean and reliable?
  - What insights are we trying to derive?

Smart Study Tips
- Understand the basics of statistical methods like mean, median, and standard deviation.
- Focus on one modeling technique at a time to grasp its logic and application.

Quick Study Tips
- Memorize modeling types with acronyms like DRP (Descriptive, Regression, Predictive).
- Use real-life datasets to practice basic analysis and modeling techniques.

Practical Analysis
- Analyze customer purchase behavior using clustering models.
- Use regression analysis to predict sales based on marketing spend.

Real-World Experience
- Example: How Netflix uses clustering to recommend personalized content.
- Case: How Uber applies predictive models to estimate ride demand.

Storytelling
- Case Study: A retail store using regression analysis to predict holiday sales.
- Story of a marketing team using time-series models for campaign planning.

Fun Mnemonics
- **SMART for data modeling:**
  - Simplify Data
  - Model Relationships
  - Analyze Trends
  - Review Outputs
  - Take Action

Diagrammatic Representations
- Flowchart of the data analysis and modeling process.
- Graph comparing different types of modeling techniques.

CHAPTER

12 Objective Questions

PAST YEAR QUESTIONS AND ANSWERS

2013 - Dec [6] {C} Answer the following, showing the workings for each:

(i) ₹ 25,000 is being invested at the beginning of every year. We are now at the end of year II. Considering a 10% interest rate, what is today's value of the annual investments from year I till and including that of year V?
(Take 10% discount factors as:
10.909,0.826,0.751,0.683,0.621,0.564 for year-end 0,1,2,3,4,5,6)
(2 marks)

(ii) Perpetual 15% debentures of ₹ 1,000 are sold at a premium of 10% with no floatation costs. Taking corporate tax rate at 35%, the after-tax cost of capital will be
(A) 6.88%
(B) 7.88%
(C) 8.86%
(D) 10.73% **(2 marks)**

(iii) In 2011-12, XYZ Pharma Ltd. had a profit margin of 20% and asset turnover of 3 times. At the end of year 2012-13, the profit margin decreases by 5% and asset turnover increased to 4 times. The return on investment for 2012-13 will be
(A) 80%
(B) 60%
(C) 50%
(D) 70% **(2 marks)**

(iv) Given that Sales = ₹ 50,000, Variable Cost = 60%, Fixed Cost = ₹ 12,000, the operating leverage will be

(A) 2.2
(B) 2.0
(C) 5.2
(D) 2.5 **(2 marks)**

Answer:

(i) **Calculation of Present value of annual investment**

End of year	0	1	2	3	4	5
Now at end of year 2	$(1.1)^2$	$(1.1)^1$	1	$\frac{1}{(1.1)}$	$\frac{1}{(1.1^2)}$	-
	1.21	1.1	1	0.909	0.826	
= 25,000× 5 = 1,25,000						

(ii) **(C) = 8.86%**
After tax,

$$\text{Cost of capital (Kd)} = \frac{\text{Interest payment } (1-t)}{\text{Sale price of debenture}} \times 100$$

$$= \frac{150 \times (1 - 0.35)}{(1{,}000 + 100)} \times 100 = 8.86\%.$$

(iii) **(B) = 60%**
Revised Net Profit Ratio = 20-5 = 15%.; and
Revised assets turnover Ratio = 4 times.
Hence, ROI = 15% × 4 = 60%.

(iv) **(D) = 2.50**
Contribution = Sales - Variable cost = 50,000 - 30,000 = 20,000;
So, operating profit = ₹ 8,000.

$$\text{Hence, Operating leverage} = \frac{\text{Contribution}}{\text{Operating Profit}} = \frac{20{,}000}{8{,}000} = 2.50.$$

2016 - June [1] (II) State whether the following are true or false:

(viii) Companies P and Q are competitors for product PQ. P has a higher degree of operating leverage than Q. If demand for PQ decreases, profits of Q will decrease at a slower rate than P. **(1 mark)**

(ix) The Internal Rate of Return (IRR) assumes that cash flows are reinvested at the firm's cost of capital. **(1 mark)**

Answer:

(viii) **True.** (A higher leverage means faster increase in both profits and losses. Hence P's losses will increase faster, or profits will decrease faster.)

(ix) **False.** (The IRR assumes that Cash Flows are reinvested at the IRR)

2016 - June [1] (III) Fill in the blanks:

(xiv) In India, commercial papers can be issued in multiples of ₹ _____ **(1 mark)**

Answer:

(xiv) 5 lakhs

2016 - Dec [1] (II) State whether the following are True or False (Write only the question Roman Numeral and whether True or False):

(ix) If dividends grow at 'g'% p.a. and cost of equity is k_e, the current market price of a share is determined by a geometric progression with common ratio $(1+g)/(1 + k_e)$.

(x) The MM Hypothesis assumes that the overall cost of capital is independent of the capital structure. **(1 × 2 = 2 marks)**

Answer:

(ix) True

(x) True

2016 - Dec [1] (III) Fill in the blanks (Write only the Roman Numeral and the content filling the blank):

(xiv) The ratio of % change in one variable to the % change in some other variable is defined as _____ in the context of capital structure and finance.

(xv) *E* is an exporter who relinquishes his right to a receivable due at a future date in exchange for immediate cash payment at an agreed discount, passing on all the risks and responsibilities for collecting the debt to *B*. This arrangement is called _____. **(1 × 2 = 2 marks)**

Answer:

(xiv) Leverage

(xv) Forfeiting

2017 - June [6] Answer the following questions:

(a) Choose the correct answer from the given four alternatives:

(i) Which of the following is the main objective of financial management?
- (a) Revenue Maximisation
- (b) Profit Maximisation
- (c) Wealth Maximisation
- (d) Cost Minimisation

(ii) Which one of the following activities is outside the purview of financing decision in financial management?
- (a) Identification of the source of funds
- (b) Measurement of the cost of funds
- (c) Deciding on the time of raising the funds
- (d) Deciding on the utilization of the funds

(iii) A firm has a capital of ₹ 10 lakhs, sales of ₹ 5 lakhs, gross profit of ₹ 2 lakhs and expenses of ₹ 1 lakh. The Net Profit Ratio is:
- (a) 50%
- (b) 40%
- (c) 20%
- (d) 10%

(iv) Which of the following forms of equity financing is especially designed for funding High Risk & High Reward projects?
- (a) ADR
- (b) GDR
- (c) FCCB
- (d) Venture Capital

(v) A process through which loans and other receivables are underwritten and sold in a form of asset is known as:
- (a) Factoring
- (b) Forfeiting
- (c) Securitisation
- (d) Bill Discounting

(vi) In Net Profit Ratio, the denominator is:
- (a) Credit Sales
- (b) Net Sales
- (c) Cost of Sales
- (d) Cost of Goods Sold

(1 × 6 = 6 marks)

(b) Match Column 'A' with Column 'B'.

Column 'A'		Column 'B'	
1	Leverage	(A)	Control Limits
2	Stochastic Model	(B)	Influence of one force over another
3	Commercial Paper	(C)	Sold at Discount
4	Factoring	(D)	Raise Short Term Finance through Receivables

(1 × 4 = 4 marks)

(c) State whether the following statements are True or False:

(i) In case of mutually exclusive capital budgeting decision, all the feasible proposals may be accepted.

(ii) As per the Gordan Model, $K_e = D_1/P_0 + g$, where K_e = Cost of Equity, D_1 = Dividend, P_0 = Current market price of share and g = growth rate.

(iii) Gross Working Capital is the difference between total current assets and total current liabilities.

(iv) Working Capital Turnover Ratio may be classified under Activity Ratio. **(1 × 4 = 4 marks)**

Answer:

(a) (i) (c) Wealth Maximisation
(ii) (d) Deciding on the utilization of the funds
(iii) (c) 20%
(iv) (d) Venture Capital
(v) (c) Securitisation
(vi) (b) Net Sales

(b)

Column 'A'		Column 'B'	
1	Leverage	(B)	Influence of one force over another
2	Stochastic Model	(A)	Control Limits

3	Commercial Paper	(C)	Sold at Discount
4	Factoring	(D)	Raise Short Term Finance through Receivables

(c) (i) False
(ii) True
(iii) False
(iv) True

2017 - Dec [6] Answer the following questions:

(a) Choose the correct answer from the given four alternatives.

(i) ROI (Return on Investment) can be decomposed into the following ratios:
(a) Overall Turnover Ratio and Current Ratio
(b) Net Profit Ratio and Fixed Assets Turnover
(c) Working Capital Turnover Ratio and Net Profit Ratio
(d) Net Profit Ratio and Overall Turnover Ratio

(ii) Which one of the following activities is outside the purview of dividend decision in financial management?
(a) Identification of the profit after taxes
(b) Measurement of the cost of funds
(c) Deciding on the pay-out ratio
(d) Considering issue of bonus shares to equity shareholders

(iii) Which of the following does not help to increase Current Ratio?
(a) Issue of Debentures to buy Stock
(b) Issue of Debentures to pay Creditors
(c) Sale of Investment to pay Creditors
(d) Avail Bank Overdraft to buy Machine

(iv) Which of the following statements is correct?
(a) A higher Receivable Turnover is not desirable.
(b) Interest Coverage Ratio depends upon Tax Rate.
(c) Increase in Net Profit Ratio means increase in Sales.
(d) Lower Debt-Equity Ratio means lower Financial Risk.

(v) "Shareholders' wealth" in a firm is reflected by:
(a) the number of people employed in the firm.

(b) the book value of the firm's assets less the book value of its liabilities.
(c) the amount of salary paid to its employees.
(d) the market price per share of the firm.

(vi) The excess of Current Assets over Current Liabilities is called:
(a) Net Current Assets
(b) Net Working Capital
(c) Working Capital
(d) All of the above

(1 × 6 = 6 marks)

(b) Match the statement in Column I with the most appropriate statement in Column II.

	Column I		Column II
1.	Dividend policy has no effect on its value of assets	(A)	Myron Gordon
2.	Value of share is worth the present value of its future dividend rather than its earnings	(B)	Graham & Dodd
3.	Dividend policy has an impact on share valuations	(C)	John Burr Williams
4.	Market Price of share will increase when company declares dividend rather than when it does not	(D)	Modigliani & Miller

(1 × 4 = 4 marks)

(c) State whether the following statements are ***True*** or ***False*:**

(i) Treasury Bills are short term instruments issued by the Reserve Bank of India to address short term liquidity shortfalls.
(ii) While calculating cost of redeemable debt, it is necessary to consider the repayment of the principal, but the interest can be ignored.
(iii) A Depository Receipt in the US market is called American Depository Receipt (ADR).
(iv) Net Present Value method cannot serve as the best decision criteria for selection of projects when they are mutually exclusive.

(1 × 4 = 4 marks)

Answer:

(a) (i) (d) Net Profit Ratio and Overall Turnover Ratio
(ii) (b) Graham & Dodd
(iii) (d) Modigliani & Miller
(iv) (d) Lower Debt-Equity Ratio means Lower Financial Risk.
(v) (d) The Market Price per Share of the firm.
(vi) (d) Modigliani & Miller

(b) 1. (D) Modigliani & Miller
2. (C) John Burr Williams
3. (A) Myron Gordon
4. (B) Graham & Dodd.

(c) (i) True
(ii) False.
(iii) True
(iv) False.

2018 - June [6] (a) Choose the correct answer from the given four alternatives (You may write only the Roman numeral and alphabet chosen for your answer):

(i) Which of the following is a Profitability Ratio?
(a) Proprietary Ratio
(b) Debt-Equity Ratio
(c) Price-Earning Ratio
(d) Fixed Assets Ratio

(ii) Which of the following is not a source of fund?
(a) Issue of Capital
(b) Issue of Debenture
(c) Decrease in Working Capital
(d) Increase in Working Capital

(iii) β (Beta) of a security measures its
(a) Divisible Risk
(b) Financial Risk
(c) Market Risk
(d) None of the above

(iv) The following is not a Discounted Cash Flow Technique:

(a) NPV
(b) PI
(c) Accounting of Average Rate of Return
(d) IRR

(v) The 'Dividends-Payout Ratio' is equal to
(a) The Dividends yield plus the Capital gains yield
(b) Dividends per Share divided by Earning per Equity Share
(c) Dividends per Share divided by Par Value per Share
(d) Dividends per Share divided by Current Price per Share

(vi) If EBIT = ₹ 1,00,000, Fixed Assets = ₹ 2,00,000, Sales =₹10,00,000 and Variable Cost = ₹ 7,00,000, Then, the Operating Leverage will be
(a) 2
(b) 3
(c) 6
(d) 4

(1×6 = 6 marks)

(b) Match the Statement under Column I with the most appropriate Statement under Column II:

Column I		Column II	
1	DividendModels	(a)	Modigliani and Miller Hypothesis
2	Theory of Capital Structure	(b)	Fund Based Financial Service
3	Factoring	(c)	Indicator of Short-tern solvency of a company
4	Liquid Ratio	(d)	Gorden Model

(1×4 = 4 marks)

(c) State whether the following statement are **True or False:** (You may write only the Roman numeral and whether True or False without copying the statements into answer the books.)
(i) Debt Service Coverage Ratio indicates the liquidity of a firm in relation to its ability to meet projected daily expenditure from operations.
(ii) Bill Discounting is defined as the relationship between the seller of goods and financial firms, called the Factor.
(iii) Finance is called the "Chemistry of money"

(iv) Capital Budgetary Forecasts Returns on proposed long-term investments and compares profitability of different Investments and their cost of capital.

(1×4 = 4 marks)

Answer:

(a) (i) (c)
(ii) (d)
(iii) (c)
(iv) (c)
(v) (b)
(vi) (b)

(b) 1. (d)
2. (a)
3. (b)
4. (c)

(c) (i) False
(ii) False
(iii) False
(iv) True

2018 - Dec [6] (a) Choose the correct answer from the given four alternatives (You may write only the Roman numeral and the alphabet chosen for your answer):

(i) Which of the following does not help to increase Current Ratio?
(a) Issue of Debentures to buy Stock
(b) Issue of Debentures to pay Creditors
(c) Sale of Investment to pay Creditors
(d) Avail Bank Overdraft to buy Machine

(ii) Which of the following is not considered while preparing cash budget?
(a) Accrual Principal.
(b) Difference in Capital and Revenue items.
(c) Conservation Principle.
(d) All of the above.

(iii) Cost of capital may be defined as:
(a) Weighted Average cost of all debts.
(b) Rate of Return expected by Equity Shareholders.

(c) Average IRR of the Projects of the firm.
(d) Minimum Rate of Return that the firm should earn.

(iv) At Indifference level of EBIT, different capitals have:
(a) same EBIT.
(b) same EPS.
(c) same PAT.
(d) same PBT.

(v) ABC Analysis is used in
(a) Inventory Management.
(b) Receivables Management.
(c) Accounting Policies.
(d) Corporate Governance.

(vi) Which of the following is not incorporated in Capital Budgeting?
(a) Tax-Effect.
(b) Time Value of Money.
(c) Required Rate of Return.
(d) Rate of Cash Discount. **(1×6=6 marks)**

Answer:
(i) (d)
(ii) (d)
(iii) (d)
(iv) (b)
(v) (a)
(vi) (d)

2018 - Dec [6] (b) Match the statement under Column I with the most appropriate statement in Column II off to (You may opt to write only the numeral and matched alphabet instead of copying contents into the answer book):

Column I		Column II	
(1)	Gordon's Model	(A)	Activity Ratio
(2)	Discounted Cash Flow	(B)	Inventory Management

(3)	Carrying Cost	(C)	Internal Rate of Return
(4)	Working Capital Turnover Ratio	(D)	Relevance of Dividends on share value

(1×4=4 marks)

Answer:

Column I		Column II	
(1)	Gordon's Model	(D)	Relevance of Dividends on share value
(2)	Discounted Cash Flow	(C)	Internal Rate of Return
(3)	Carrying Cost	(B)	Inventory Management
(4)	Working Capital Turnover Ratio	(A)	Activity Ratio

2018 - Dec [6] (c) State whether the following statements are True or False (You may write only the Roman numeral and whether True or False without copying the statements into the answer book.)

(i) In mutually exclusive capital budgeting decisions, the firm can accept all feasible proposals.
(ii) Weighted Average Cost of Capital in always calculated with reference to book value of different sources of funds.
(iii) Debt-Equity Ratio is a measure of long-term solvency of a firm.
(iv) Capital Rationing as a situation when the Government has imposed a ceiling on investment by a firm. **(1×4=4 marks)**

Answer:
(i) False
(ii) False
(iii) True
(iv) False

2019 - June [6] (a) Choose the correct answer from the given four alternatives (You may write only the Roman numeral and Alphabet chosen for your answer):

(i) Objective of Financial Management is
(a) Management of Liquidity

(b) Maximization of Profit
(c) Maximization of Shareholders' Wealth
(d) Management of Fixed Assets

(ii) Which of the following variables is not known in Internal Rate of Return?
(a) Initial Cash Flows
(b) Discount Rate
(c) Terminal Inflows
(d) Life of the Project

(iii) Cost of Capital refers to
(a) Floatation Cost
(b) Dividend
(c) Required Rate of Return
(d) None of the above

(iv) Working Capital Management involves financing and management of
(a) All Assets
(b) All Current Assets
(c) Cash and Bank Balance
(d) Receivables and Payables

(v) All listed companies are required to prepare
(a) Funds Flow Statement
(b) Cash Flow Statement
(c) Statement of Affairs
(d) All of the above

(vi) Ratio Analysis can be used to study liquidity, turnover, profitability etc., of a firm. What does Debt-Equity Ratio help to study?
(a) Solvency
(b) Liquidity
(c) Profitability
(d) Turnover **(1 x 6 = 6 marks)**

Answer:
(i) (c)
(ii) (b)
(iii) (c)
(iv) (b)
(v) (b)
(vi) (a)

2019 - June [6] (b) Match the statement under Column I with the most appropriate statement under Column II : (You may opt to write only the numeral and the matched alphabet instead of copying the contents into the answer book):

Column I		Column II	
1	Important element of Capital Budgeting is	(A)	represents a risky situation
2	High Operating and Financial Leverage	(B)	may affect the size of working capital
3	A consistent dividend policy	(C)	a tool for analysis of financial statements
4	Fund Flow Statement is	(D)	the analysis of risk and uncertainty

(1 x 4 = 4 marks)

Answer:
1. (d)
2. (a)
3. (b)
4. (c)

2019 - June [6] (c) State whether the following statements are **True or False:** (You may write only the Roman numeral and whether True or False without copying the statement into the answer book.)

(i) In Financial Management, the objective of Financial Manager is profit maximization.
(ii) Investment Decisions and Capital Budgeting are one and the same.
(iii) Operating Leverage analyses the relationship between Sales Level and Earning Per Share (EPS).
(iv) The Cost of Capital is the required rate of return to maintain the value of the firm. **(1 x 4 = 4 marks)**

Answer:
(i) False
(ii) False

(iii) False
(iv) True

2019 - Dec [6] (a) Choose the correct answer from the given four alternatives (you may write only the Roman numeral and alphabet chosen for your answer):

(i) Of the product of which two ratios is the ROI composed?
  (a) Overall Turnover Ratio and Current Ratio
  (b) Net Profit Ratio and Fixed Assets Turnover
  (c) Working Capital Turnover Ratio and Net Profit Ratio
  (d) Net Profit Ratio and Overall Turnover Ratio

(ii) A firm determines the shareholders' wealth by taking
  (a) the number of people employed in the firm.
  (b) the book value of the firm's assets less the book value of its liabilities.
  (c) the amount of salary paid to its employees.
  (d) the market price per share of the firm.

(iii) Capital Budgeting techniques which considers the time value of money is based on
  (a) Cash Flows of the organisation
  (b) Accounting Profit of the organisation
  (c) Interest Rate on Borrowings
  (d) Last Dividend Paid

(iv) Debt Financing is a cheaper source of finance because of
  (a) Time Value of Money.
  (b) Rate of Interest.
  (c) Tax-deductibility of Interest.
  (d) Dividends not Payable to lenders.

(v) What should be the optimum Dividend payout ratio, when r = 12% and Ke = 10%?
  (a) Zero
  (b) 50%
  (c) 12%
  (d) 100%

(vi) The term Float is used in
  (a) Receivable Management
  (b) Cash Management

  (c) Marketable Management
  (d) Inventory Management

(1 × 6 = 6 marks)

Answer:

(a) (i) (d)
(ii) (b)
(iii) (a)
(iv) (c)
(v) (a)
(vi) (b)

2019 - Dec [6] (b) Match the statement under Column I with the most appropriate statement under column II (You may Opt to write only the numeral and the matched alphabet instead of coping the contents into the answer book):

	Column-I		Column-II
(i)	Defensive interval Ratio	(A)	Exporter relinquishes the right to a receivable due in future for immediate cash payment
(ii)	Capital Asset pricing model	(B)	Two control limits are used for managing balances
(iii)	Forfeiting	(C)	Risk-return trade off securities
(iv)	Miller and Orr model of Cash Management	(D)	Liquidity of a firm in relation to its ability to meet daily operating expenditure

(1 × 4 = 4 marks)

Answer:

(b)

	Column-I		Column-II
(i)	Defensive interval Ratio	(D)	Liquidity of a firm in relation to its ability to meet daily operating expenditure
(ii)	Capital Asset pricing model	(C)	Risk-return trade off securities

(iii)	Forfeiting	(A)	Exporter relinquishes the right to a receivable due in future for immediate cash payment
(iv)	Miller and Orr model of Cash Management	(B)	Two control limits are used for managing Balances

2019 - Dec [6] (c) State whether the following statements are True or False (You may write only the Roman numeral and Whether True or False without coping the statement into the answer book):

(i) Wealth maximization goal is only an extension of profit maximization goal of the organization.
(ii) Cost of capital is not the minimum required rate of earning or the cut off rate of capital Expenditure.
(iii) Low degree of operating leverage and high degree of financial leverage is not an ideal situation.
(iv) IRR indicated that the discounting rate at which net present value is Zero. **(1 × 4 = 4 marks)**

Answer:

(c) (i) True
(ii) False
(iii) False
(iv) True

2021 - Dec [1] ROI (Return on Investment) can be decomposed into the following ratios :

(1) Overall Turnover Ratio and Current Ratio
(2) Working Capital Turnover Ratio and Net Profit Ratio
(3) Net Profit Ratio and Fixed Assets Turnover
(4) Net Profit Ratio and Overall Turnover Ratio **(1 mark) [Sec. A - MCQ]**

Answer:

(4) Net Profit Ratio and Overall Turnover Ratio

2021 - Dec [3] Which of the following would be consistent with a more aggressive approach to financing working capital ?

(1) Financing permanent inventory build up with long – term debt.
(2) Financing short – term needs with short – term funds

(3) Financing some long –term needs with short-term funds
(4) Financing seasonal needs with short – term funds **(1 mark) [Sec. A - MCQ]**

Answer:

(3) Financing some long –term needs with short-term funds

2021 - Dec [7] Profitability and Liquidity ratios are used for :

(1) Normative purposes only
(2) Predictive purposes only
(3) Both Normative and Predictive purposes
(4) None of these **(1 mark) [Sec. A - MCQ]**

Answer:

(3) Both Normative and Predictive purposes

2021 - Dec [8] Internal Rate of return is the discounting factor which :

(1) Ensures that the present value of Net Cash Inflow is > the Net Cash Outflow
(2) Ensures that the present value of Net Cash Inflow is < the Net Cash Outflow
(3) None of these
(4) Equates the present value of Net Cash Inflow to the Net Cash Outflow **(1 mark) [Sec. A - MCQ]**

Answer:

(4) Equates the present value of Net Cash Inflow to the Net Cash Outflow

2021 - Dec [11] The degree of operating Leverage and degree of financial Leverage of VIM Ltd. are 2 and 1.5 respectively. If the Sale increases by 10% what will be the percentage change in EPS ?

(1) 15% increase (2) None of these
(3) 10% increase (4) 30% increase **(1 mark) [Sec. A - MCQ]**

Answer:

(4) 30% increase

2021 - Dec [12] EBIT-EPS chart is used for which of the following purpose?

(1) Determining the Price-Earning ratio
(2) Showing changes of EPS overtime
(3) Getting EPS levels for varying levels of EBIT
(4) Impact of sales on EBIT **(1 mark) [Sec. A - MCQ]**

Answer:
(3) Getting EPS levels for varying levels of EBIT

2021 - Dec [14] Corporate financing instruments which have an unlimited life, voting right and right to receive dividends are known as
(1) Non-Redeemable Preference Shares
(2) Redeemable Preference Shares
(3) Equity Shares
(4) Debentures **(1 mark) [Sec. A - MCQ]**

Answer:
(3) Equity Shares

2021 - Dec [16] UBI Ltd. has EBIT of ₹ 1,00,000. The Company makes use of Debt and Equity Capital. The Company has 10% debentures of ₹4,00,000. If the Company's equity capitalization rate is 15%. What will be value of UBI Ltd. ?
(1) ₹ 4,00,000
(2) ₹ 7,00,000
(3) ₹ 8,00,000
(4) ₹ 6,00,000
(1 mark) [Sec. A - MCQ]

Answer:
(3) ₹ 8,00,000

2021 - Dec [17] ABY Ltd. has paid dividend of ₹ 3 per share of ₹ 10 each last year and it is expected to grow @ 10% next year. If the market price of share is ₹ 60 what will be the Cost of equity ?
(1) 12.00%
(2) 12.50%
(3) 16.50%
(4) 15.50% **(1 mark) [Sec. A - MCQ]**

Answer:
(4) 15.50%

2021 - Dec [20] Which of the Statements about factoring is true ?

(1) The client is able to get 100% of total invoice as credit facility
(2) Factoring is the purchase of the invoice of the client
(3) Factoring is employed to finance domestic business only
(4) Factoring is used for medium term financing at a fixed rate of interest
(1 mark) [Sec. A - MCQ]

Answer:
(2) Factoring is the purchase of the invoice of the client

2021 - Dec [2] The total Asset - turnover ratio and total Asset to net-worth of GIN Ltd are 1.80 and 2.50 respectively. If the net – profit margin of the company is 8%. What will be its Return on Equity (ROE) ?
(1 mark) [Sec. B - MCQ]

Answer:
36%

2021 - Dec [5] In cash Flow analysis the term cash includes cash on hand and_____Using the appropriate word(s) fill in the blank.
(1 mark) [Sec. B - SAQ]

Answer:
Demand deposits with banks.

2021 - Dec [6] The current market price of an equity share of a company is ₹ 80. The current dividend per share is ₹ 4. In case the dividend are expected grow at the rate of 7%, the cost of equity capital will be :_____ .
(1 mark) [Sec. B - MCQ]

Answer:
12.35%

2021 - Dec [15] _____ ratio expresses the relationship between what is actually paid in the form of dividends out of available earnings and what is available as earnings per share. Using the appropriate word(s) fill in the blank. **(1 mark) [Sec. B - SAQ]**

Answer:
Pay-out

2021 - Dec [16] Which item in Column (B) is an appropriate match for the item in Column (A).

Column (A)		Column (B)
Upper Control and Lower Control Limit for Cash balances determined by :	-1	Miller-orr model
--	-2	Baumol Model

(1 mark) [Sec. B - SAQ]

Answer:
Miller-Orr Model

2022 - Dec [6] (a) Choose the correct answer from the given four alternatives (You may write, only the Roman numeral and Alphabet chosen for your answer.):

(i) If the Fixed Cost is 50% of EBIT, then Operating Leverage would be:
(a) 2.
(b) 2.5
(c) 3
(d) 3.5

(ii) If Annual Growth Rate is 50% of the Cost of Equity and the Dividend Yield is $9\frac{1}{11}\%$, then the Cost of Equity would be:
(a) 18%
(b) 20%
(c) 22%
(d) 25%

(iii) Which among the following is not an assumption of the Net Operating Income Approach?
(a) Value of the Firm remains the same.
(b) Cost of Debt remains the same.
(c) Cost of Capital remains the same.
(d) Cost of Equity remains the same.

(iv) Calculate the Risk-Free rate of return if the value of beta (β) is 1.5, Market return = 13% and Cost of Equity = 16%.
(a) 5.5%
(b) 6.25%
(c) 6.75%
(d) 7%

(v) In Cash Budget, Interest on Fixed Deposits made in a Bank with a maturity period of 3 years is:
(a) Cash Flows from Operating Activity
(b) Cash Flows from Financing Activity
(c) Cash Flows from Investing Activity
(d) None of the above

(vi) If A = Annual Consumption of Input (in Units), O = Ordering Cost per order and C = Carrying Cost per unit per annum, calculate the Ordering Cost per Annum at the Order Size of $\sqrt{\frac{2AO}{C}}$,
(a) $\sqrt{AOC}$
(b) $2\sqrt{AOC}$
(c) $\sqrt{\frac{AOC}{2}}$
(d) $\sqrt{2AOC}$

(1 × 6 = 6 marks)

(b) Match the Statement under **Column I** with the most appropriate Statement under **Column II** (You may Opt to write only the numeral and the matched alphabet instead of copying the contents into the answer book):

	Column I		Column II
(i)	Constant Growth Model	(A)	Modigliani and Miller
(ii)	Net Income Approach	(B)	Ezra Solomon
(iii)	Dividend Irrelevancy Model	(C)	Myron J Gordon
(iv)	Traditional view of Capital Structure	(D)	David Durand

(1 × 4 = 4 marks)

(c) State whether the following Statements are **True** or **False** (You may write only the Roman numeral and whether True or False without copying the statement into the answer book.):
(i) Agency Costs do not include indirect costs.
(ii) Equity Ratio does not help in assessing the solvency of the company.

(iii) GDRs do not have voting rights.
(iv) When $\beta = 0$ then security under consideration is not risky.

(1 × 4 = 4 marks)

Answer:

(a) (i) (a)/(b)/(c)/(d)
(ii) (b)
(iii) (d)
(iv) (d)
(v) (a)
(vi) (c)

(b) (i) (c)
(ii) (d)
(iii) (a)
(iv) (b)

(c) (i) False
(ii) False
(iii) True
(iv) True

2023 - June [1] (a) **Choose the correct alternatives:**

(i) The capital structure of X Ltd. consists of 40% Equity Share Capital, 40% Preference Capital and 20% Debt. The after-tax cost of the Preference Capital and Debt are 18% and 9% respectively. The weighted average cost is 19%. X Ltd. paid currently a dividend of ₹ 13 per share. The current market price of its equity share is ₹ 112. Find the growth rate?
(a) 9%
(b) 10%
(c) 11%
(d) 12%

(ii) What will be the present value of a perpetuity of ₹ 10,000 payable at the beginning of each period and growing @ 5% p.a. and the interest rate is 10% p.a.?
(a) ₹ 2,00,000
(b) ₹ 2,10,000
(c) ₹ 2,20,000
(d) ₹ 2,30,000

(iii) Compute the beta of Security X from the following information:

σ_x = Standard Deviation of Security X	15%
σ_m = Standard Deviation of Market Portfolio	12%
r_{xm} = Regression Coefficient between returns of Security X and Market Portfolio	0.80

(a) 1.00
(b) 1.25
(c) 0.80
(d) 1.50

(iv) During the Book Building process, if the floor of the Price Band is ₹150 then the cap of the Price Band can at maximum be:
(a) ₹ 175
(b) ₹ 180
(c) ₹ 200
(d) ₹ 225

(v) Quarterly demand of Product ZED-16250 units, 2.5 units of Product ZED are obtained from one unit of raw material. Opening Stock of material is 14,000 units and Closing Stock will be 20% more than opening stock. The company incurs a handling cost of ₹ 10 plus freight of ₹ 65 per order. Storage Cost ₹ 0.50 per unit per month, Interest Cost 10% p.a., Obsolescence Cost 2% p.a., Purchase Price of Input Unit ₹ 50 per unit. How frequently should orders be placed assuming 360 days in a year?
(a) 3 days
(b) 6 days
(c) 7.5 days
(d) 15 days

(vi) Funds required ₹ 10,00,000 to be arranged by the issue of 30% Equity Shares of ₹ 10 each to be issued at ₹ 20, 60% in 10% Debt and Balance by 15% Preference Shares, Tax Rate: 25%. Return on Investment (ROI) is 30%. Return on Equity Shareholders Funds (ROE) will be:
(a) 46.875%
(b) 47.50%

(c) 55%
(d) 60%

(vii) PJ Ltd. purchased a Machine on 01.10.2021 for ₹ 20,80,000 payable as to 25% by a cheque and 50% of the balance by an issue of 14% Preference Shares of ₹ 500 each at a premium of ₹ 20 per share and the remaining by an issue of 12% Debentures of ₹ 500 each at a premium of 4%. Unpaid interest on these debentures and Unpaid Preference Dividend on 31st March, 2022 amounted to ₹ 5,000 and ₹ 2,500 respectively. Calculate Cash flow from Financing Activities for Cash Flow Statement as per AS-3.
(a) (₹ 1,87,800)
(b) (₹ 1,80,000)
(c) (₹ 93,900)
(d) (₹ 90,000)

(viii) The RBI offers 91 Days Treasury Bills. X makes a bid at ₹ 98.93. Calculate the Yield to Price at the bid made by X.
(a) 4.3382%
(b) 4.2918%
(c) 1.0700%
(d) 1.0816%

(ix) From the given information, calculate Altman's Z score.

Current Assets	₹ 10,00,000
Current Liabilities	₹ 2,00,000
EBIT	₹ 1,00,000
Sales	₹ 4,00,000
Retained Earnings	₹ 2,00,000
Total Assets	₹ 20,00,000
Total Debts	₹ 5,00,000
Market Value of Equity	₹ 25,00,000

(a) 4.125

(b) 3.985
(c) 3.725
(d) 3.125

(x) Interest from Fixed Deposits in Banks is shown as:
(a) Cash Flows from Operating Activities
(b) Cash Flows from Investing Activities
(c) Cash Flows from Financing Activities
(d) None of the above

(xi) The Probability Density function describes:
(a) the characteristics of a Random Constant.
(b) the characteristics of a Non-Random Constant.
(c) the characteristics of a Non-Random Variable.
(d) the characteristics of a Random Variable.

(xii) A scatter plot displays several unique data points:
(a) on four different graphs
(b) on three different graphs
(c) on a single graph
(d) on two different graphs **(1 × 12 = 12 marks)**

(b) State True or False:

(i) Accrual Principle is not followed in capital budgeting.
(ii) Both IRR and NPV can be zero but both IRR and NPV can not be negative.
(iii) Miller-Orr Model considers Transaction Cost, Holding Cost and Total annual requirement of cash when the demand for cash is uncertain.
(iv) EPS is zero at Indifference Point and Financial Break Even Point.
(v) Internal growth rate is the maximum rate at which the firm can grow without external financing of any kind.
(vi) Any data expressed as a number is numerical data.
(vii) Structured Data consists of tabular information that may be readily imported into a database and then utilised by analytics software or other applications. **(1 × 7 = 7 marks)**

(c) Fill in the blanks:

(i) Assume that the company's existing Acid-Test Ratio is 2:1. On Purchase of treasury bills of ₹ 1,00,000, Acid-Test Ratio will be _____.

(ii) _____ schedule classifies the receivables according to their age (the period for which they have been outstanding).
(iii) All permanent current assets are financed out of long-term sources of finance under _____ Approach of Working Capital Management.
(iv) Cash Flow Statement (based on Ind AS-7) for listed companies should be presented as per the _____ Method.
(v) _____ is a collaborative funding model that collects small contributions from many individuals.
(vi) Data _____ techniques are utilised to develop descriptions and hypotheses on a specific data set. **(1 × 6 = 6 marks)**

Answer:

(a) (i) (d) 12%
(ii) (c) ₹ 2,20,000
(iii) (a) 1
(iv) (b) 180
(v) (c) 7.5 days
(vi) (c) 55%
(vii) (d) (₹ 90,000)
(viii) (a) 4.3382%
(ix) (b) 3.985
(x) (b) Cash flow from investing activities.
(xi) (d) the characteristics of a Random Variable
(xii) (c) on a single graph

(b) (i) True
(ii) False
(iii) False
(iv) False
(v) True
(vi) True
(vii) True

(c) (i) 2:1
(ii) Aging
(iii) Conservative and Matching
(iv) Indirect Method
(v) Crowd Funding
(vi) Mining

2023 - Dec [1] {C} Choose the correct option.

(i) Which one of the following statements is correct concerning the weighted average cost of capital (WACC) of any firm?
(a) The WACC may decrease as a firm's debt-equity ratio increases.
(b) In the computation of WACC, weight assigned to the preferred stock is based on the coupon rate multiplied by the par value of the stock.
(c) A firm's WACC will increase as the corporate tax rate increases.
(d) The WACC does not consider redeemable preference shares of the firm.

(ii) X Ltd. is considering an investment proposal involving an initial cash outlay of ₹ 20,00,000. The proposal has an expected life of 7 years and zero salvage value. At a required rate of return of 12%, the proposal has a profitability index of 1.182. Calculate the present value of cash inflows. The present value of an annuity of ₹ 1 for 7 years at 12% discount is 4.5638.
(a) ₹ 22,64,000
(b) ₹ 23,70,000
(c) ₹ 23,64,000
(d) ₹ 22,70,000

(iii) The signs of large inventory build-up in anticipation of price increase in future can be best diagnosed from _____.
(a) Asset turnover ratio
(b) Working Capital turnover ratio
(c) Inventory turnover ratio
(d) Current ratio

(iv) MJ Ltd. has issued 5,000, 10% Debentures of ₹ 100 each. The rate of inflation is 6%. Calculate the real cost of debt.
(a) 3.77%
(b) 3.90%
(c) 4.10%
(d) 4.57%

(v) A commercial paper of the face value of ₹ 10,00,000 is issued at ₹ 9,60,000 for a maturity period of 120 days. The annual financing cost of the commercial paper is _____.
(a) 25%

(b) 14.5%
(c) 12.7%
(d) 4%

(vi) If the cost of the project is ₹ 22,84,000, the useful life is 5 years and the annuity is ₹ 8,00,000, then the Pay-Back Period is:
(a) 3 years
(b) 2 years 11 months
(c) 2 years 9 months
(d) 2 years 8 months

(vii) If the Annual demand of raw materials is 20,000 units, the price per unit is ₹ 2, the ordering cost per order is ₹ 2,000 and the carrying cost percentage of average inventory is 10%, then the number of orders based on EOQ will be:
(a) 3 orders
(b) 2 orders
(c) 1 order
(d) 4 orders

(viii) If the average receivables are ₹ 3,25,000, the cash sales are ₹ 2,50,000 and the average collection period is 2 months, then the amount of sales is:
(a) ₹ 20,00,000
(b) ₹ 22,00,000
(c) ₹ 19,50,000
(d) ₹ 21,50,000

(ix) The Piotroski F Score which measures a stock's financial condition is based on:
(a) Binary scoring system based on nine parameters.
(b) A scaled scoring system based on nine parameters.
(c) Binary scoring system based on ten parameters.
(d) A scaled scoring system based on ten parameters.

(x) The constant dividend growth model is useful for ____.
(a) Seasonal Industry
(b) Mature Industry
(c) Capital Oriented Industry
(d) Growth Oriented Industry

(xi) OASIS committee has given recommendations in the area of ____.
(a) Pension Policy

(b) Hedge Funds
(c) Private Equity Funds
(d) Venture Capital

(xii) ____ is annual growth of Investment over a specific period of time.
(a) Perpetuity
(b) CAGR
(c) Annuity
(d) None of the above

(xiii) In which scale used for quantifying qualitative data is an arbitrary zero point used?
(A) Nominal Scale
(B) Ratio Scale
(C) Ordinal Scale
(D) Interval Scale

(xiv) ____ represents a project timeline or activity changes across time.
(a) Bubble Chart
(b) Gantt Chart
(c) Density Map
(d) Scatter Plots

(xv) ____ architecture enables business to store sensitive data on premises and access it though app hosted in the public cloud.
(a) Private Cloud
(b) Public Cloud
(c) Hybrid Cloud
(d) All of the above

(2 × 15 = 30 marks)

Answer:
(i) (a)
(ii) (c)
(iii) (c)
(iv) (a)
(v) (c)
(vi) (b)
(vii) (c)
(viii) (b)
(ix) (a)
(x) (b)
(xi) (a)

(xii) (b)
(xiii) (d)
(xiv) (b)
(xv) (c)

2024 - June [1] {C} Choose the correct option from the four alternatives given:

(i) Selling shares without owing them, to buy them back at a future date at a lower price in expectation that price will drop is known as _____.
(a) Call option
(b) Put option
(c) Long position
(d) Selling short

(ii) A 91-day Treasury Bill with face value of ₹ 100 is issued at ₹ 98. The annualized yield on the same would be _____. (Assume 365 days a year)
(a) 3.09%
(b) 8.18%
(c) 14.09%
(d) 13.09%

(iii) _____ shows that the current dividend depends partly on current earnings and partly on previous year's dividend.
(a) Gordon's Model
(b) M.M. Model
(c) Dividend Discount Model
(d) Lintner Model

(iv) Rajesh Polymers Ltd. issued ₹ 4,00,000, 9% perpetual debentures at a premium of 10%. The costs of floatation are 2%. The tax rate is 50%. What is the after-tax cost of debt?
(a) 4.15%
(b) 4.17%
(c) 14.17%
(d) 4.20%

(v) The pecking order theory has emerged as an alternative theory to ___.
(a) Trade off theory
(b) The traditional approach
(c) Net income approach

(d) Net operating income approach

(vi) How long it will take for ₹ 1,00,000 to double at a compound rate of interest of 12% per annum approximately?
(a) Five years
(b) Six years
(c) Seven years
(d) Eight years

(vii) Which of the following is not an objective of Digitalization?
(a) Wide spread access of data
(b) Preservation of data
(c) Large Group of users
(d) Large physical storage space

(viii) Following information has been taken from the Balance Sheet of MJK Ltd. 8% debentures payable ₹ 15 Lakh, 12% preference shares ₹ 15 Lakh and ordinary shareholder's equity is ₹ 40 Lakh. You have to calculate the capital gearing ratio of the company.
(a) 4:2
(b) 4:3
(c) 4:7
(d) 4:9

(ix) Cluster analysis is the process of assigning a set of data to subset so that observations can be made. Cluster analysis is part of _____.
(a) Supervised Learning
(b) Unsupervised Learning
(c) Semi Supervised Learning
(d) Reinforcement Learning

(x) Systematic risk of the firm is 1.5, 182 days treasury bills currently yield 9%, expected yield on the market portfolio of assets is 14%. Determine the cost of equity capital based on the given data.
(a) 15%
(b) 15.5%
(c) 16%
(d) 16.5%

(xi) Which of the following is not a technique of data mining?

(a) KNN algorithm
(b) Neural network
(c) Decision tree
(d) Predictive analytics

(xii) The cash outlay for a project is ₹ 2 lakh. The cash inflows that are expected to be generated are ₹ 1,20,000 at the end of the first year and ₹ 1,60,000 at the end of the second year. If the discounting rate is 10%, then the profitability index is _____.
(a) 1.44
(b) 1.25
(c) 1.21
(d) 1.42

(xiii) Average collection period is 3 months, cash sales and average receivables are ₹ 3,00,000 and ₹ 4,00,000 respectively. The total amount of sales will be _____.
(a) ₹ 18,00,000
(b) ₹ 19,00,000
(c) ₹ 22,00,000
(d) ₹ 25,00,000

(xiv) Under ABC Analysis method of stock control. 'A' category items are_____.
(a) smaller in quantity but larger in value
(b) larger in quantity but smaller in value
(c) smaller in quantity and smaller in value
(d) larger in quantity and larger in value

(xv) If the profit after taxes of a company is ₹ 5,40,000, the preference dividend is ₹ 60,000 and the dividend payable to 1,60,000 equity shares is @ ₹ 2 per share, then the equity dividend coverage ratio is _____.
(a) 1.50 times
(b) 1.62 times
(c) 1.55 times
(d) 1.80 times

(2×15 = 30 marks)

Answer:

(i) (d)
(ii) (b)
(iii) (d)
(iv) (b)
(v) (a)
(vi) (b)
(vii) (d)
(viii) (b)
(ix) (b)
(x) (d)
(xi) (d)
(xii) (c)
(xiii) (b)
(xiv) (a)
(xv) (a)

2024 - Dec [1] {C} Choose the correct option from the four alternatives given:

(i) Which of the following is a widely used graph for Data Visualisation?
(A) Bar chart
(b) Pie chart
(c) Histogram
(d) All of the above

(ii) If the operating leverage is 1.22, the sales for the year is ₹ 75 lakhs, the variable cost is ₹ 42 lakhs, then the EBIT is equal to _____.
(a) ₹ 32 lakhs
(b) ₹ 27 lakhs
(c) ₹ 31 lakhs
(d) ₹ 31.5 lakhs

(iii) Operating leverage arises because of _____.
(a) Fixed Cost of Production
(b) Fixed Interest Cost
(c) Variable Cost
(d) Step Cost

(iv) Suppliers and Creditors of a firm are primarily interested in _____.

(a) Profitability Position
(b) Liquidity Position
(c) Market Share Position
(d) Debt Position

(v) Which of the following does not help to increase Current Ratio?
(a) Issue of Debentures to buy Stock
(b) Issue of Debentures to pay Creditors
(c) Sale of Investment to pay Creditors
(d) Avail Bank Overdraft to buy Machine

(vi) Which of the following statements is correct?
(a) A higher Receivable Turnover is not desirable.
(b) Interest Coverage Ratio depends upon Tax Rate.
(c) Increase in Net Profit Ratio means increase in Sales.
(d) Lower Debt-Equity Ratio means lower Financial Risk.

(vii) A firm has EBIT of ₹ 50,000. Market value of debt is ₹ 80,000 and overall capitalization rate is 20%. Market value of firm under NOI Approach is _____.
(a) ₹ 2,50,000
(b) ₹ 1,70,000
(c) ₹ 30,000
(d) ₹ 1,30,000

(viii) Which one of the following is not a feature of Certificate of Deposits?
(a) The minimum lock-in period for CDs is 30 days.
(b) The minimum issue size of CDs are ₹ 1,00,000.
(c) CDs are transferable by endorsement and delivery.
(d) CDs attract stamp duty as applicable to negotiable instruments.

(ix) Which one of the following is not applied in determining the credit policy of a firm?
(a) Credit period or duration of credit
(b) Level of credit sales to optimize profits
(c) Collection policy
(d) Cost of goods sold

(x) A company is considering two capital structures. Plan A consists of 100% equity with 10,000 shares outstanding at ₹ 100 each. Plan B consists of 50% debt and 50% equity, where the debt is ₹ 5,00,000 at 10% interest, and there are 5,000 shares outstanding at ₹ 100 each. If the EBIT is ₹ 1,50,000 and tax rate is 30%, what is the EPS under Plan B?

(a) ₹ 14
(b) ₹ 17
(c) ₹ 20
(d) ₹ 18

(xi) Given, risk-free rate of return = 6%; market return = 11%; cost of equity = 15%; value of beta (β) is _____.
(a) 1.9
(b) 1.8
(c) 2.0
(d) 2.2

(xii) The procedure that organises data into a meaningful order to make it simpler to comprehend, analyse and visualise, is called _____.
(a) Data validation
(b) Data sorting
(c) Data aggregation
(d) Data analysis

(xiii) Which of the following is/are the type(s) of cloud computing?
(a) Private cloud
(b) Public cloud
(c) Hybrid cloud
(d) All of the above

(xiv) If the company's D/P ratio is 60% and ROI is 15%, what should be the growth rate under Gordon model?
(a) 5.5%
(b) 7.2%
(c) 6.0%
(d) 9.6%

(xv) Which financial metric is crucial for understanding a firm's Cash Management efficiency?
(a) Gross Profit Margin
(b) Cash Conversion Cycle
(c) Operating Profit
(d) Return on Capital Employed

(2 × 15 = 30 marks)

December - 2024
CMA Inter Group - II Paper - 11
Financial Management and Business Data Analytics

Section - A
(Compulsory)

1. **Choose the correct option from the four alternatives given:**
   (i) Which of the following is a widely used graph for Data Visualisation?
   (a) Bar chart
   (b) Pie chart
   (c) Histogram
   (d) All of the above
   (ii) If the operating leverage is 1.22, the sales for the year is ₹ 75 lakhs, the variable cost is ₹ 42 lakhs, then the EBIT is equal to _____.
   (a) ₹ 32 lakhs
   (b) ₹ 27 lakhs
   (c) ₹ 31 lakhs
   (d) ₹ 31.5 lakhs
   (iii) Operating leverage arises because of _____.
   (a) Fixed Cost of Production
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   (a) ₹ 14
   (b) ₹ 17
   (c) ₹ 20
   (d) ₹ 18
   (xi) Given, risk-free rate of return = 6%; market return = 11%; cost of equity = 15%; value of beta (β) is _____.
   (a) 1.9
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(d) Return on Capital Employed

(2 × 15 = 30 marks)

SECTION - B

Answer any five questions from the following. Each question carries 14 marks. (14 × 5 = 70 marks)

2. (a) What are the principal features of a commercial paper? Discuss the advantages offered by commercial paper to its issuers. (7 marks)

(b) What do you mean by Descriptive Analytics? Explain the information revealed by Descriptive Analytics. (7 marks)

3. (a) The following information is available about Boxa Company:

Accounts payable	₹ 100 lakhs
Accounts receivable	₹ 50.48 lakhs
Average inventory	₹ 300 lakhs

Buildings and land	?
Cash	₹ 50 lakhs
Cost of goods sold	₹ 800 lakhs
EBIT	₹ 180 lakhs
Long-term bonds	₹ 250 lakhs with 10% interest rate
Price per share	₹ 72
Price/Earnings ratio	18
Shareholders' equity	?
Total assets	₹ 1,000 lakhs
Total sales	₹ 1,250 lakhs
Cash sales	₹ 100 lakhs

You are required to calculate the following:
(i) Days sales outstanding
(ii) Interest coverage ratio
(iii) Debt ratio
(iv) Inventory turnover ratio
(v) Earnings per share (7 marks)

(b) A firm wants to know whether it belongs to the non-bankrupt class of firms. Certain figures are extracted from the financial statements of the firm. You are required to use Altman's Z score model and place the firm in the appropriate class.

- Sales: ₹ 20,00,000
- EBIT: ₹ 10,00,000
- Total Assets: ₹ 40,00,000
- Book Value of Total Liabilities: ₹ 16,00,000
- Retained Earnings: ₹ 24,00,000
- Market Value of Equity: ₹ 80,00,000
- Working Capital: ₹ 8,00,000 (7 marks)

4. (a) Prepare a Common-size Income Statement from the following income statements and interpret the same.

Income Statement

Particulars	31st March 2023 ₹	31st March 2024 ₹
Gross Sales	10,30,000	12,42,000

Less: Sales Returns	30,000	42,000
Net Sales	10,00,000	12,00,000
Less: Cost of Goods Sold	6,00,000	6,60,000
Gross Profit	4,00,000	5,40,000
Less: Operating Expenses:		
Administrative Expenses	85,000	1,14,000
Selling Expenses	2,00,000	1,93,200
Total Operating Expenses	2,85,000	3,07,200
Income from Operations	1,15,000	2,32,800
Add: Non-operating Income	24,000	34,200
Total Income	1,39,000	2,67,000
Less: Non-operating Expenses	36,000	53,280
Net Profit	1,03,000	2,13,720

(7 marks)

(b) Prakash Packers Ltd. has the following capital structure:

Particulars	**₹ (in lakhs)**
Equity Share Capital (₹10 each)	200
14% Preference Share Capital (₹100 each)	100
Retained Earnings	100
12% Debentures (₹100 each)	300
11% Term Loan from Bank	50
Total	750

Additional Information:

(i) The market price per equity share is ₹ 32. The company is expected to declare a dividend per share of ₹ 2 per share and there will be a growth of 10% in dividends for the next 5 years.

(ii) The preference shares are redeemable at a premium of ₹ 5 per share after 8 years and are currently traded at ₹ 84 in the market.

(iii) Debenture redemption will take place after 7 years at a premium of ₹ 5 per debenture and the current market price is ₹ 90 per debenture.

(iv) The corporate tax rate is 40%.

You are required to calculate the weighted average cost of capital using book value weights. (7 marks)

5. (a) From the following information, calculate Net Present Value of the following business proposal and suggest whether the proposal should be accepted or rejected:

Initial Investment in Fixed Assets	₹ 5,00,000
Initial Investment in Working Capital	₹ 1,00,000
Salvage Value of Fixed Assets after 3 years	₹ 2,00,000
Annual Cash inflows before tax	₹ 3,00,000
Income tax rate (on profit as well as capital gain)	30%
Cost of capital	18%

Depreciation is to be charged under WDV method @40%.

Present Values of Re. 1.00 at 18% are as follows:

Year	1	2	3
PVIF	0.8475	0.7182	0.6086

(7 marks)

(b) A project, requiring initial investment of ₹ 5,00,000 in creating a fixed facility, ensures net incremental inflow of ₹ 1,50,000 per annum before deduction of depreciation and tax. The fixed facility is likely to have an economic life of five years with scrap value of ₹ 1,00,000 at the end. Depreciation is allowed on straight-line basis and marginal tax rate is 40%. The cost of capital is 10% p.a.

You are required to estimate the IRR of the project and advise the management on its acceptability.

Consider the following Present Value table:

Year	1	2	3	4	5
PVIF @ 10%	0.909	0.826	0.751	0.683	0.621

PVIF @ 11%	0.901	0.812	0.731	0.659	0.593
PVIF @ 12%	0.893	0.797	0.712	0.636	0.567

(7 marks)

6. (a) JBC Ltd. sells goods at a gross profit of 25%. Depreciation is considered as a part of cost of production. The following are the annual figures given to you:

Sales (2 months' credit)	₹18,00,000
Materials consumed (1 month credit)	₹ 4,50,000
Wages paid (1 month lag in payment)	₹ 3,60,000
Cash manufacturing expenses (1 month lag in payment)	₹ 4,80,000
Administrative expenses (1 month lag in payment)	₹1,20,000
Sales promotion expenses (paid quarterly in advance)	₹ 60,000

The company keeps one month's stock each of raw materials and finished goods. It also keeps ₹ 1,00,000 in cash.
You are required to estimate the working capital requirements of the company on cash cost basis, assuming 15% safety margin.
(7 marks)

6. (b) Himalaya Refrigeration Company purchases 1,600 units of a component annually, from Bolts & Pins Associates. The annual cost of holding each unit of component is ₹ 8 and the cost of placing order each time is ₹ 100.

You are required to calculate:

(i) Economic Order Quantity;
(ii) Reorder Level; and
(iii) Maximum and Minimum Inventory Level, if the company operates 320 days in a year, material procurement time is 10 days, and safety stock is 20 units. Assume minimum consumption rate per day = average consumption rate per day.
(7 marks)

7. (a) Jai & Karti Ltd. has a capital of ₹ 10 lakhs in equity shares of ₹100 each. The shares are currently quoted at par. The company proposes declaration of a dividend of ₹ 10 per share at the end of

the current financial year. The capitalization rate for the risk class to which the company belongs is 12%. What will be the market price of the share at the end of the year, if

(i) a dividend is not declared?
(ii) a dividend is declared?

Assuming that the company pays the dividend and has net profits of ₹ 5,00,000 and makes new investments of ₹ 10 lakhs during the period, how many new shares must be issued? (7 marks)

(b) Alpha Pharma Ltd., which has been engaged in business for the last five years, furnishes the following information for its only product Metmorphin Hydrochloride which is being sold at ₹ 23 per unit:

Total Sales:	₹ 1,45,000 units
Fixed Cost:	₹ 2,80,000
Variable Cost:	₹ 17 per unit
Debt Capital:	₹ 10,00,000 @ 11% interest rate
Equity Capital:	₹ 20,00,000

Face Value of each share of the company is ₹ 10.
Tax rate applicable is 30%.

(i) What is the number of units that should be sold so that the Earnings before Taxes (EBT) is equal to zero?
(ii) If Earnings before Interest & Taxes (EBIT) increase to three times the current EBIT, then what is the Earnings after Taxes (EAT)?
(iii) What will be the degree of operating, financial and combined leverage? (7 marks)

8. (a) What do you mean by Data Ethics? Discuss the five basic principles of Data Ethics that a business organisation should follow. (7 marks)

(b) What is Business Intelligence (BI)? List the procedures to which the use of BI has expanded. (7 marks)

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