ATM

END GAME REVISION NOTES 150+ QUESTIONS

CAFM

CS EXECUTIVE NEW SYLLABUS

RATIO ANALYSIS

LIQUIDITY RATIOS (Liquidity refers to the ability of a firm to meet its obligations in the short run, usually one year.)

1. CURRENT RATIO

$$\textbf{Current Ratio}: \quad \frac{\text{Current Assets}}{\text{Current liabilities}}$$

Current assets include Cash and Cash Equivalents, Current Investments, Trade Receivables (Debtors), Inventories (stock), Short Term loans and advances, and prepaid expenses.

Current Liabilities include Trade Payables (Creditors), Outstanding Expenses, Bank Overdraft, Short Term Loans & Advances.

Normally, a high current ratio is considered to be a sign of financial strength. Bankers in India have used a norm of 1.33. Internationally, the norm is 2.0.

2. ACID TEST RATIO / LIQUID RATIO / QUICK RATIO

$$\frac{\text{Current Assets} - \text{Inventories} - \text{Prepaid Expenses}}{\text{Current liabilities}}$$

The ratio provides a measure of the capacity of the business to meet its short-term obligations without any flaw. Normally, it is advocated to be safe to have a ratio of 1:1 as unnecessarily low ratio will be very risky and a high ratio suggests unnecessarily deployment of resources in otherwise less profitable short-term investments.

Prepaid expenses if given then only we have to take otherwise ignore.

3. CASH RATIO

$$\frac{\text{Cash and bank balances} + \text{Current investments}}{\text{Current liabilities}}$$

This is a very stringent measure of liquidity. Indeed lack of immediate cash may not matter if the firm can stretch its payments or borrow money at short notice.

LEVERAGE / SOLVENCY RATIOS

1. DEBT EQUITY RATIO

$$\text{Debt-Equity Ratio} = \frac{Long\ Term\ Debts}{Shareholders'\ Funds}$$

where:
Shareholders' Funds (Equity) = Share capital + Reserves and Surplus + Money received against share warrants + Share application money pending allotment

Share Capital = Equity share capital + Preference share capital

or
Working Capital = Current Assets – Current Liabilities

Only Long term debts are to be taken, that does not include Current Liabilities.

2. DEBT TO CAPITAL EMPLOYED RATIO

$$\text{Debt to Capital Employed Ratio} = \frac{Long-term\ Debt}{Capital\ Employed\ (or\ Net\ Assets)}$$

Capital employed is equal to the long-term debt + shareholders' funds.

If capital employed is not given in the question, but Assets data is given then only we have to use Net Assets in the formula. If capital employed is given in the question, we have to ignore net assets.

3. INTEREST COVERAGE RATIO

$$\frac{\text{Profit before interest and taxes}}{\text{Interest on Long term debts}}$$

4. FIXED CHARGES COVERAGE RATIO

$$\frac{\text{Profit before interest and taxes} + \text{Depreciation}}{\text{Repayment of loan Interest} + (1 - \text{Tax rate})}$$

5. DEBT SERVICE COVERAGE RATIO

$$\frac{\text{Profit after tax} + \text{Depreciation} + \text{Other non} - \text{Interest on term loan} + \text{Lease rentals}}{\text{Interest} + \text{Lease rentals} + \text{Repayment of term loan}}$$

TURNOVER RATIOS

1. **INVENTORY TURNOVER RATIO** = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

COGS = Opening Stock + Net Purchases – Closing Stock

Average Inventory = (Opening Stock + Closing Stock) / 2

2. **DEBTOR TURNOVER RATIO** = $\frac{\text{Net credit sales}}{\text{Average sundry debtors}}$

Net Credit Sales = Total Sales – Cash Sales

Average Sundry Debtors = (Opening + Closing) /2

3. **FIXED ASSET TURNOVER RATIO** = $\frac{\text{Net sales}}{\text{Average net fixed assets}}$

4. **TOTAL ASSET TURNOVER RATIO** = $\frac{\text{Net sales}}{\text{Average total assets}}$

PROFITABILITY RATIOS (%) that's why ×100

1. **GROSS PROFIT RATIO** = $\frac{\text{Gross profit}}{\text{Net sales}} \times 100$

Gross Profit = Net Sales – COGS
Net Sales = Gross Sales – Sales return

2. **EBITDA MARGIN**

$$\frac{\text{Earnings before interest,taxes,depreciation,and amortisation}}{\text{Net sales}} \times 100$$

3. **NET PROFIT RATIO** = $\frac{\text{Net profit x 100}}{\text{Net sales}}$

4. **EARNING POWER**

$$\text{Earning power} = \frac{\text{Profit before interest and tax}}{\text{Average total assets}} \times 100$$

Earning power is a measure of business performance which is not affected by interest charges and tax burden.

5. **RETURN ON CAPITAL EMPLOYED**

$$\text{ROCE} = \frac{\text{Profit before interest and tax}(1 - \text{tax})}{\text{Average total assets}} \times 100$$

The numerator of this ratio viz., profit before interest and tax (1 - Tax rate) is also called net operating profit after tax (NOPAT).

6. **RETURN ON EQUITY/ RETURN ON NET WORTH**

$$\frac{\text{Equity earnings}}{\text{Average equity}} \times 100$$

The numerator of this ratio is equal to profit after tax less preference dividends.

DU POINT ANALYSIS:

Return on Equity = Net Profit Margin x Asset Turnover Ratio x Financial Leverage

- Net Profit Margin = (Net Income / Sales) - The Net Profit Margin signifies the Profit that is extracted per rupee of Sales. Everything else remaining same, a company which has a higher Net Profit Margin has a higher ROE.

- Asset Turnover Ratio = (Sales / Total Assets) - This ratio is an efficiency measurement used to determine how effectively a company uses its assets to generate revenue. Higher the Asset Turnover Ratio, higher the ROE, everything else remaining the same.

- Financial Leverage = (Total Assets / Total Equity) - Financial Leverage measure whether a company finances the purchase of assets primarily through debt or equity. The higher the Financial Leverage the higher the ROE. Financial Leverage when it becomes excessive can increase the risk of bankruptcy.

TIME VALUE OF MONEY

1. PRESENT VALUE OF SINGLE CASH FLOW

$$PV = \frac{FV}{(1+i)n}$$

Where,
PV = Present Value
FV = Future Value
I = decimalized interest rate
N =Number of periods

2. FUTURE VALUE OF SINGLE CASH FLOW

$$FV^t = PV * (1+i)^t$$

3. FUTURE VALUE OF ANNUITY

$$FVA = A \frac{(1+ i)^t - 1}{i}$$

4. PRESENT VALUE OF ANNUITY

$$PVA = A \frac{(1 + i)^t - 1}{i (1+i)^t}$$

5. PRESENT VALUE OF PREPETUITY

$$\frac{R}{i}$$

WITH GROWTH:

$$\frac{R}{i - g}$$

CAPITAL BUDGETING

1. PAYBACK PERIOD

UNIFORM CASH FLOWS

$$Pay\ Back\ Period = \frac{Initial\ Investment}{Annual\ cash\ flows}$$

2. AVERAGE RATE OF RETURN/ ACCOUNTING RATE OF RETURN

$$ARR = \frac{Average\ net\ income\ after\ taxes}{Average\ investment} \times 100$$

3. NET PRESENT VALUE

NPV = Sum of Discounted Cash Inflows – Discounted Cash Outflows

4. PROFITABILITY INDEX

$$Profitability\ index = \frac{PV\ of\ Future\ cash\ flows}{Initial\ cash\ investment}$$

5. INTERNAL RATE OF RETURN: Trial & Error Method

Assume a Discount Rate and Calculate NPV.

If NPV is positive, then use higher discount rate and Calculate NPV. Repeat the procedure until we get Negative NPV.

By this process, we need a Discount Rate at which NPV is positive (nearest to 0) and a Discount rate at which NPV is negative (nearest to 0).

Using interpolation method, we have to calculate the IRR.

CAPITAL STRUCTURE

CAPITAL STRUCUTRE THEORIES

NET INCOME APPROACH

Value of Firm = $\frac{\text{EBIT}}{\text{Ko}}$

Total Value of Firm = Value of Debt + Market Value of Equity

Value of Equity = $\frac{\text{EBIT}-\text{Interest}}{\text{Ke}}$

NET OPERATING INCOME APPROACH

Value of Firm = $\frac{\text{EBIT}}{\text{Ko}}$

Total Value of Firm = Value of Debt + Market Value of Equity

Value of Equity = $\frac{\text{EBIT}-\text{Interest}}{\text{Ke}}$

MM APPROACH

$$V_l = V_u = \frac{\text{EBIT}}{K_{ol}} = \frac{\text{EBIT}}{K_{ou}}$$

LEVERAGE

Format of Profit & Loss

Sales	
(-) Variable Cost	
Contribution	
(-) Fixed Cost	
EBIT	
(-) Interest	
EBT	
(-) Tax	
EAT	
(-) Preference Dividend	
Earnings available for Equity	

OPERATING LEVERAGE

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profit (EBIT)}}$$

$$\text{Degree of OL} = \frac{\%\text{ change in EBIT}}{\%\text{ Change in Sales}}$$

FINANCIAL LEVERAGE

$$\text{Financial Leverage} = \frac{\text{Operating Profit (EBIT)}}{\text{Profit Before Tax}}$$

$$\text{Degree of FL} = \frac{\%\text{ change in EPS}}{\%\text{ Change in EBIT}}$$

COMBINED LEVERAGE

$$\text{DCL} = \text{DOL} \times \text{DFL} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}} = \frac{\text{Contribution}}{\text{PBT}}$$

$$\text{Degree of CL} = \frac{\%\text{ change in EPS}}{\%\text{ Change in Sales}}$$

WORKING CAPITAL LEVERAGE

$$\text{Working Capital Leverage} = \frac{\text{CA}}{\text{TA} + \Delta\text{ CA}}$$

Δ CA = change in Current Assets

FINANCIAL BREAK EVEN POINT

$$FBP = Interest + \frac{Preference\ Dividend}{1-t}$$

INDIFFERENCE POINT

$$\frac{(EBIT-Interest)(1-t)-PD(1+t)}{No.of\ equity\ shares\ in\ Plan\ A} = \frac{(EBIT-Interest)(1-t)-PD(1+t)}{No.of\ equity\ shares\ in\ Plan\ B}$$

Formula is just same as EPS formula. You just have to calculate as per the capital structure given in the question. If debt is there u have to take Interest otherwise not, if there is preference share then you have to take preference dividend otherwise not, if preference dividend tax is given then only you have to take (1+t) otherwise not. Normally, EBIT is given when we calculate EPS, only difference in this is EBIT is not given we have to find it out by solving this equation.

COST OF IRREDEMABLE DEBT

Kd after taxes = Kd (1 – tax rate)

COST OF REDEEMABLE DEBT

$$Kd = \frac{I\,(1-t) + (RV - NP)/n}{\left(\frac{RV + NP}{2}\right)} \times 100$$

COST OF IRREDEMABLE PREFERENCE SHARES

$$\text{Kp (cost of pref. share)} = \frac{\text{Annual dividend of preference shares}}{\text{Market price of the preference stock}}$$

COST OF REDEEMABLE PREFERENCE SHARES

$$K_p = \frac{PD + \left(\frac{RV - NP}{n}\right)}{\left(\frac{RV + NP}{2}\right)} \times 100$$

COST OF EQUITY

CAPM:

$$\text{Ke} = \text{R}_\text{f} + \beta\,(\text{R}_\text{m} - \text{R}_\text{f})$$

DIVIDEND YIELD:

$$\boldsymbol{C_e(after\ tax) = \frac{DPS}{MP} \times 100}$$

EARNINGS YIELD:

$$\boldsymbol{C_e(after\ tax) = \frac{DPS}{MP} \times 100}$$

DIVIDEND GROWTH:

$$\boldsymbol{C_e(After\ tax) = \left(\frac{DPS}{MP(or\ NP)} \times 100\right) + G}$$

COST OF NEWLY ISSUED EQUITY SHARES

$$\boldsymbol{C_e(After - tax) = \frac{EPS}{NP} \times 100\ or \left(\frac{DPS}{MP} \times 100\right) or \left(\frac{DPS}{NP} \times 100\right) + G}$$

COST OF RETAINED EARNINGS

$$\boldsymbol{C_r = \left(\frac{DPS(1 - Ti)(1 - B)}{MP(1 - Te)} \times 100\right)}$$

If Dividend Growth Rate is given,

$$\boldsymbol{C_r = \left(\frac{(DPS + G)(1 - Ti)(1 - B)}{MP(1 - Te)} \times 100\right)}$$

Where, Cr = Cost of Retained Earnings
DPS = Dividend Per Share
Ti = Marginal tax rate applicable to individual shareholder
B = Brokerage Cost
MP = Present Market Price per share
Te = Capital Gains Tax
G = Growth rate of dividends

DIVIDEND POLICY

WALTER FORMULA

$$P = \frac{D + \frac{r}{k}(E - D)}{k}$$

GORDON FORMULA

$$P = \frac{E(1 - b)}{k_e - br}$$

MM MODEL

Po = $\frac{1}{1+r}$ $(D1 + P1)$

DIVIDEND PAYOUT RATIO

$$Dividend\ Payout\ Ratio = \left(\frac{Total\ Dividends}{Net\ Income}\right) \times 100$$

Dividend Payout Ratio = 1 – Retention Ratio

RETENTION RATIO

$$Retention\ Ratio = \frac{Net\ Income - Dividends}{Net\ Income} \times 100$$

Retention Ratio = 1 – Dividend Payout Ratio

WORKING CAPITAL MANAGEMENT

OPERATING CYCLE
R + W + F + D − C

RAW MATERIAL HOLDING PERIOD

$$r = \frac{Average\ inventory\ of\ raw\ materials\ and\ stores}{Average\ per\ day\ consumption\ of\ raw\ materials\ and\ stores}$$

WIP PERIOD

$$w = \frac{Average\ work - in - progress}{Average\ cost\ of\ production\ per\ day}$$

FINISHED GOODS HOLDING PERIOD

$$f = \frac{Average\ inventory\ of\ Finished\ goods}{Average\ cost\ of\ sales\ per\ day}$$

DEBTOR COLLECTION PERIOD

$$D = \frac{Average\ book\ debts}{Average\ credit\ sales\ per\ day}$$

CREDITOR PAYMENT PERIOD

$$c = \frac{Average\ trade\ creditors}{Average\ cost\ of\ production\ per\ day}$$

CASH MANAGEMENT

BAUMOL'S CASH MANAGEMENT MODEL

$$\boldsymbol{C = \sqrt{\frac{2A \times F}{O}}}$$

where, C = Optimum cash balance
A = Annual (or monthly) cash disbursements
F = Fixed cost per transaction
O = Opportunity cost of holding cash

MILLER ORR MODEL CASH MANAGEMENT

$$\boldsymbol{z = \sqrt[3]{\frac{3b\sigma^2}{4i}}}$$

Where, b = fixed cost associated with a security transaction
σ^2 = variance of daily net cash flows
i = interest rate per day on marketable securities.

The optimal value of h is simply 3z.
Upper Limit = Lower Limit + 3z
Return Point = Lower Limit + z
or = Upper Limit – 2z
Average Cash Balance = Lower Limit + z

INVENTORY MANAGEMENT

VARIOUS LEVELS

Minimum Stock Level = Re-order Level - (Normal Consumption x Normal re-order Period)

Re-ordering Level = Maximum Consumption x Maximum Re-order period

Maximum stock level = Re-ordering Level + Re-ordering Quantity-(Minimum Consumption x Minimum Re-ordering period)

Average Stock Level = Minimum Stock Level + 1/2 of re-ordering quantity

OR

Average Stock Level = Minimum Stock Level + Maximum Stock Level

Danger Level = Average Consumption x Maximum re-ordering period for emergency purchases

ECONOMIC ORDER QUANTITY (EOQ)

$$EOQ = \sqrt{\frac{2 \times R \times C_P}{C_H}}$$

Where
R = Annual quantity used (in units)
CP = Cost of placing an order / ordering cost per order
CH = Cost of holding one unit/Inventory carrying cost of one unit / carrying cost of one unit per year

SECURITY ANALYSIS

PRICE EARNINGS RATIO

P/E = Stock Price Per Share / Earnings Per Share (or)

P/E = Market Capitalization / Total Net Earnings (or)

Justified P/E = Dividend Payout Ratio / R – G

PRICE TO BOOK VALUE RATIO

$$P/B\ Ratio = \frac{Market\ Price\ per\ Share}{Book\ Value\ per\ Share}$$

PRICE TO SALES RATIO

$$P/S\ Ratio = \frac{MVS}{SPS}$$

Where:
MVS = Market Value per Share
SPS = Sales per Share

PRICE TO EARNINGS GROWTH RATIO

$$PEG\ Ratio = \frac{Price/EPS}{EPS\ Growth}$$

HOLDING PERIOD RETURN

Holding Period Return = Income + (End of Period Value – Initial Value) / Initial Value

Annualized HPR = $(HPR + 1)^{1/n} - 1$

OPERATIONAL APPROACH

CONTRIBUTION

Contribution = Sales – Variable Cost
Contribution = Fixed Cost + Profit
Fixed Cost = Contribution – Profit

P/V RATIO

$$P/V\ ratio = \frac{Contribution}{Sales} \times 100$$

PV Ratio = Change in Profit / Change in sales * 100
VC Ratio = Change in Total Cost / Change in Sales *100

BASIC FORMULA

Selling Price * Selling Quantity = Sales Value
Selling Price = Sales Value / Sales Quantity
Sales Quantity = Sales Value/ Selling price

DESIRED SALES

$$Desired\ sales\ (Rs.) = \frac{Fixed\ cost + Desired\ profit}{p/v\ ratio}$$

$$Desired\ sales\ (Units) = \frac{Fixed\ cost + Desired\ profit}{Contribution\ per\ unit}$$

BREAK EVEN POINT

$$Break - Even\ point(unit) = \frac{Fixed\ cost}{Contribution\ per\ unit}$$

$$\text{Break-Even point}(₹) = \frac{\text{Fixed cost}}{\text{P/V ratio}}$$

or = Break – even units × Selling price p.u.

MARGIN OF SAFETY

Margin of Safety = Actual Sales – Break- Even Sales

Or = Proft/ PV ratio

Or = Profit * Selling price p.u / Contribution p.u

Margin of Safety as % of Total Sales = Margin of Safety / Total Sales *100

OTHERS

Break Even Sales(%) + Margin of Safety (%) = 100%
BES(%) = 100% - MOS(%)
MOS(%) = 100% - BES (%)

VC% + PV% = 100%
VC% = 100% - PV%
PV% = 100% - VC%

JOURNAL ENTRIES

SHARE CAPITAL

ISSUE OF SHARES FOR CASH

On receipt of Application money
Bank A/c ……..Dr
To Share Application Money A/c
(Being Amount received as Share Application Money)

On allotment of shares
At Par:
Share application money A/c ..,…Dr
To Share Capital Account A/c
(Being Application money on allotted shares now transferred to Share Capital Account)

On Share Allotment Money Due
At Par:
Share Allotment Money A/c ..,…Dr
To Share Capital Account A/c
(Being Allotment Money Due)

At Premium:
Share Allotment money A/c ..,…Dr
To Share Capital Account A/c
To Securities Premium A/c
(Being Allotment money due)

On Receipt of allotment money
Bank A/c ……..Dr
To Share Allotment A/c
(Being Share Allotment Money received)

On a call being Due
Share Call Account A/c…..Dr
To Share Capital A/c
(Being Share Call Money Due)

On Receipt of call money
Bank A/c ….Dr
To Share Call a/c
(Being Share Call Money Received)

OVERSUBSCRIPTION

If Excess Application money is refunded:
Share Application Money A/c…..Dr
To Bank A/c
(Being Application money refunded to unsuccessful applicants)

If Excess Application money is retained & adjusted towards Share Allotment Money:
Share Application Money A/c ….Dr
To Share Allotment Money
(Being Share Call Money Received)

CALLS IN ARREARS & CALLS IN ADVANCE

Calls in Arrears:

Calls in Arrears A/c
  To Relevant Call A/c

Bank A/c
  To Calls in Arrears A/c

Shareholder A/c
  To Interest on Calls in Arrears

Bank A/c
  To Shareholder

Interest on Calls in Arrears A/c
  To Profit & Loss Account

Calls in Advance:

Bank A/c
  To Calls in Advance

Calls in Advance A/c
  To Relevant Call A/c

Interest on Calls in Advance A/c
  To Shareholder

Shareholder A/c
  To Bank A/c

Profit & Loss A/c
  To Interest on Calls in Advance

ISSUE FOR SHARES FOR CONSIDERATION OTHER THAN CASH

Purchase of Assets:

Assets A/c (name of asset acquired)
  To Vendor

Vendor A/c
  To Share capital
  To Securities Premium (if issued at premium)

Issue of shares to Promoters for Pre-Incorporation Activities:

Goodwill A/c
  To Share Capital

FORFEITURE OF SHARES

IF DUE AMOUNT NOT TRANSFERRED TO CALLS IN ARREARS:

Share Capital A/c
  To Share Allotment
  To Share First Call
  To Share Final Call

IF DUE AMOUNT IS TRANSFERRED TO CALLS IN ARREARS:

Share Capital A/c
To Calls in Arrears

IF SHARES WERE ISSUED AT A PREMIUM:

Rule:

If the premium is already received by the company, it cannot be cancelled by the company if the shares are forfeited by the company in future.

If Premium Received:

Share Capital A/c
To Forfeited Shares A/c
To Calls in Arrears A/c

If Premium not Received:

Share Capital A/c
Securities Premium A/c
To Forfeited Shares A/c
To Calls in Arrears A/c

PREFERENCE SHARE CAPITAL

Issue of new shares at par

Bank A/c Dr
To Share Capital A/c

Issue of new shares at Premium

Bank A/c Dr
To Share Capital A/c
To Securities Premium A/c

Preference shares are redeemed at par

Redeemable preference share capital A/c Dr
To Preference Shareholders A/c

Preference shares are redeemed at Premium

Redeemable preference share capital A/c Dr
Premium on redemption of P S C A/c Dr
To Preference shareholders A/c

Payment is made to preference shareholders

Preference Shareholders A/c
To Bank A/c

Adjustment of premium paid

Securities Premium Account Dr
To Premium on redemption of PSC A/c

BUY BACK OF SECURITIES

In case investments are sold for buying back own shares:

Bank A/c
To Investment A/c

(the difference between the book value and the sale value will be either profit or loss which will debited or credited to Profit and Loss Account)

In case the proceeds of fresh issue are used for buy back purpose, then on fresh issue: Bank A/c To Debentures/other investment To securities premium
For buying back of shares: Equity shareholders A/c To bank A/c
For cancellation of shares bought back: Equity share capital A/c (Nominal Value) Securities premium/Free Reserves (Excess of amount paid over nominal value) To Equity Shareholders A/c (Total Amount Paid)
For transfer of nominal value of shares purchased out of free reserves to CRR A/c Free Reserves A/c Securities Premium A/c To CRR A/c (Nominal Value of Shares bought back)
For expenses incurred on buy back: Payment of Buy Back Expenses: Buy back expense A/c To Bank A/c Transfer of Expenses to P & L: Profit and Loss A/c To Buy Back Expense A/c

UNDERWRITING OF SECURITIES

When the shares or debentures are allotted to the underwriters in respect of their liability: Underwriters A/c To share capital To Debentures
When commission becomes payable to the underwriters: Underwriter's commission A/c To Underwriter's A/c
When the net amount due from the underwriters on the shares taken up by them is received: Bank A/c To underwriter's A/c

BONUS SHARES

(A) ISSUE OF FULLY PAID UP BONUS SHARES:

Issue of Bonus Shares:
Bonus to Shareholders A/c.....Dr
To Equity Share Capital A/c

Capitalization of reserves:
CRR A/c.....Dr
Securities Premium.....Dr
Capital Reserves.....Dr (if realized in cash)

General Reserve……Dr
Profit and Loss ……Dr
To Bonus to Shareholders A/c

(B) CONVERSION OF PARTLY PAID UP SHARES INTO FULLY PAID UP

Making Final Call:
Share Final Call A/c……Dr
To Equity Share Capital

Adjustment of Final Call:
Bonus to Shareholders A/c……Dr
To Share Final Call

Capitalization of Reserves:
Capital Reserve……Dr (if realized in cash)
General Reserves……Dr
Profit & Loss A/c……Dr
To Bonus to Shareholders

(Students should note that CRR & Securities Premium can be used only for issuing fully paid up bonus shares and cannot be used for converting partly paid up shares into fully paid up as Bonus)

INTEREST ON DEBENTURES

Interest is calculated on the Face Value of Debentures.
Rate of interest is mentioned before the name of debentures.

Interest Due
Interest A/c……Dr
To debenture holder's A/c

Making Payment net of TDS
Debenture Holder's A/c…….Dr
To Bank A/c
To TDS Payable A/c

Payment of TDS by company on due date
TDS Payable A/c…..Dr
To Bank A/c

Transfer of interest to P & L
P & L A/c ….Dr
To Interest A/c

Please Note: *Normally, Rate of TDS is given in the question itself. But if it is not given then 10% can be assumed as Rate of TDS on Interest on Debentures.*

ISSUE OF DEBENTURES FOR CONSIDERATION OTHER THAN CASH

For Acquisition of Assets
Assets (Individually)….Dr (With Value of Assets)
To Vendor A/c

Notes:
(i) If the value of debentures allotted is more than the agreed purchase price, the difference is debited to Goodwill Account.

(ii) Similarly, if the value of debentures allotted is less than the agreed purchase price, it is credited to Capital Reserve Account.

Issue of Debentures to Vendor:

At Par:
Vendor A/c
To Debentures

At Premium:
Vendor A/c
To Debentures
To Securities Premium

At Discount:
Vendor A/c
Discount on issue of debentures A/c
To Debentures

ISSUE OF DEBENTURES AS A COLLATERAL SECURITY:

Method 1:
No entry is passed at the time of issue. In the balance sheet, the fact of debentures being issued and outstanding is shown by way of a note.

Method 2:
At the time of issue of debentures
Debenture Suspense A/c....Dr
To Debentures A/c

The "Debentures Suspense Account" will appear on the assets side of the Balance Sheet and Debentures on the liabilities side of the Balance Sheet. When the loan is repaid, the entry is reversed in order to cancel it.

REDEMPTION OF DEBENTURE THROUGH OPEN MARKET

NO SINKING FUND EXISTS:
Purchase of Debentures from Open Market:
Own Debentures A/c.....Dr
To Bank

Cancellation of Debentures:
If there is any difference between the nominal value of the debentures cancelled and the price paid for them, the same has to be treated as profit or loss on cancellation, and should be credited or debited to Profit on Redemption of Debentures Account or Loss on Redemption of Debentures Account.

In case of Profit: (Purchase Price < Face Value)
Debenture A/c.....(Face Value)
To Own Debentures (at Purchase Price)
To Profit on Redemption of Debentures (Profit)

Transfer of Profit on Redemption to Capital Reserve A/c
Profit on Redemption of Debentures.....Dr
To Capital Reserve

In case of Loss: (Purchase Price > Face Value)
Debenture A/c.....(Face Value)
Loss on Redemption of Debentures..... (Loss)

To Own Debentures (at Purchase Price)

Set off of Loss on Redemption from Capital Reserve or Securities Premium:
Capital Reserve A/c……Dr
Securities Premium……Dr
To Loss on Redemption of Debentures

SINKING FUND EXISTS:
Sale of Sinking Fund Investments
At a profit:
Bank A/c……Dr
To Sinking Fund Investments
To Sinking Fund (Profits)

At a Loss:
Bank A/c……Dr
Sinking Fund A/c……Dr
To Sinking Fund Investments

Rest All Entries of Purchase of Own Debenture & its cancellation are same as above in case of no sinking fund exists. Only difference is Profit or Loss on Cancellation of Debentures is transferred to Sinking Fund Account instead of Capital Reserve.

If Sinking Fund exists, on cancellation, an amount equal to the nominal value of the debentures cancelled should be transferred to General Reserve from the Debenture Sinking Fund Account.

DEBENTURE REDEMPTION BY SINKING FUND METHOD

A cumulative sinking fund is maintained on the basis of annual appropriation of the profits plus the interest earned on the sinking fund investments.

At the end of First Year:
Appropriation of profits to Sinking Fund:
Surplus A/c……Dr
To Sinking Fund A/c

Investment of Amount Appropriated:
Sinking Fund Investment A/c……Dr
To Bank

At the end of Second & Subsequent years:
Appropriation of profits to Sinking Fund:
Surplus A/c……Dr
To Sinking Fund A/c

Receipt of Interest on Investments
Bank A/c……Dr
To Interest on Sinking Fund Investments

Transfer of Interest to Sinking Fund
Interest on Sinking Fund Investments ……Dr
To Sinking Fund A/c

Investment of Annual Appropriation & Interest received
Sinking Fund Investment A/c……Dr
To Bank

At the end of Last Year:

Appropriation of profits to Sinking Fund:
Surplus A/c……Dr
To Sinking Fund A/c

Receipt of Interest on Investments
Bank A/c……Dr
To Interest on Sinking Fund Investments

Transfer of Interest to Sinking Fund
Interest on Sinking Fund Investments ……Dr
To Sinking Fund A/c

Sale of Investments:
At a profit:
Bank A/c……Dr
To Sinking Fund Investments
To Sinking Fund (Profits)

At a Loss:
Bank A/c……Dr
Sinking Fund A/c……Dr
To Sinking Fund Investments

At the time of Redemption:

Redemption is at Par:

Debentures are due for payment
Debentures A/c……Dr
To Debenture Holders

Payment for Redemption
Debenture Holders A/c……Dr
To Bank A/c

Redemption is at Premium:

Debentures are due for payment
Debentures A/c……Dr
Premium on Redemption…Dr
To Debenture Holders

Payment for Redemption
Debenture Holders A/c……Dr
To Bank A/c

Writing off Premium on redemption (Assumption is that is not recorded at the time of issue)
Sinking Fund A/c……Dr
To Premium on Redemption

Transfer of Sinking Fund to General Reserve (Nominal Value Redeemed)
Sinking Fund A/c……Dr
To General Reserve A/c

FORMATS

SCHEDULE III

PART 1: BALANCE SHEET FORMAT

Particulars	Note No.	Figure as at the end of Current Reporting Period	Figure as at the end of Previous Reporting Period
I. EQUITY AND LIABILITIES			
1. Shareholder's Fund			
a) Share Capital			
b) Reserves and Surplus			
c) Money received against share warrants			
2) Share Application Money Pending allotment			
3) Non-Current Liabilities:			
a) Long Term Borrowings			
b) Deferred Tax Liabilities (Net)			
c) Other Long term Liabilities			
d) Long term provisions			
4) Current Liabilities			
a) Short Term Borrowings			
b) Trade Payables (A) total outstanding dues of micro enterprises and small enterprises; and (B) total outstanding dues of creditors other than micro enterprises and small enterprises			
c) Other Current Liabilities			
d) Short Term Provisions			
II. ASSETS			
1) Non-Current Assets			
a) Property, Plant & Equipment and Intangible Assets			
i) Property Plant & Equipment			
ii) Intangible Assets			
iii) Capital WIP			
iv) Intangible Assets under development			
b) Non-Current Investments			
c) Deferred Tax Assets (Net)			
d) Long Term Loans and Advances			
e) Other Non-Current Assets			
2) Current Assets:			

a) Current Investments			
b) Inventories			
c) Trade Receivables			
d) Cash and Cash Equivalents			
e) Short term loans and advances			
f) Other current Assets			

PART 2: STATEMENT OF PROFIT AND LOSS

Particulars	Note No.	Figure as at the end of Current Reporting Period	Figure as at the end of Previous Reporting Period
I. Revenue from Operations			
II. Other Income			
III. Total Income (I + II)			
IV. Expenses:			
a) Cost of Material Consumed			
b) Purchases of Stock in Trade			
c) Changes in Inventories:			
i) Finished Goods			
ii) WIP			
iii) Stock in Trade			
d) Employee Benefit Expense			
e) Finance Cost			
f) Depreciation and Amortization			
g) Other Expenses			
V. Profit before exceptional and Extraordinary Items and Tax			
VI. Exceptional Items			
VII. Profit before Extraordinary Items			
VIII. Extraordinary Items			
IX. Profit before Tax			
X. Tax Expense:			
i) Current Tax			
ii) Deferred Tax			
XI. Profit from Continuing Operations			
XII. Profit from Discontinuing Operations			

XIII. Tax Expense for discontinuing operations			
XIV. Profit for the period			
XV. EPS			
i) Basic			
ii) Diluted			

PRACTICAL QUESTIONS
INSTRUCTIONS
(READING THIS IS MANDATORY)

- These Notes are of Practical Questions only relevant for CAFM CS Executive New Syllabus only.
- These Notes are for Revision before Exams Only. These are not for Regular Studies.
- **In last days before exams, you will get hardly 2 days for Revision (single module student) and only 1 day (both group student). So, Time is the biggest limitation. So, these notes are prepared keeping in the time available before exams for revision purpose, coverage has been decided according to that only and given the time available, the coverage of these notes are good.**
- Try to revise this sheet at least 3 to 4 times, so that you get a good grip and you can easily identify the type of practical question and approach that question accordingly.
- For Students convenience, I have written the Type of Question as heading and also written whether that question is easy, medium or tough as per me.
- Number of Practical's are endless, you will always feel, more questions you should cover, its natural, so, don't get distracted from your friends or other teachers. You have to always remember the time which is available to you for revisions.
- Please Note In Journal Entry questions, Narrations also carry marks so please write narrations also.
- In all questions, working notes have to be given, so, always write working notes.
- If you have assumed something, please mention it at the end of answer.
- If dates are given in the question, you have to write dates in the Journal & ledger questions, if no date is given, then keep the date column blank.

INDEX OF CHAPTERS

CHAPTERS HAVING PROPER PRACTICAL QUESTIONS ARE ONLY COVERED. IF ANY CHAPTER IS NOT THERE, THAT MEANS ITS FULL THEORY CHAPTER.

ISSUE OF DEBENTURES (EASY)

1. QUESTION

Give the Journal entries in each of the following alternative cases assuming the face value of a debenture being ₹100.

(a) A debenture issued at ₹100 repayable at ₹100
(b) A debenture issued at ₹95 repayable at ₹100
(c) A debenture issued at ₹105 repayable at ₹100
(d) A debenture issued at ₹100 repayable at ₹105
(e) A debenture issued at ₹95 repayable at ₹105
(f) A debenture issued at ₹90 repayable at ₹95

ANSWER:

JOURNAL ENTRIES

	Particulars		Dr. (₹)	Cr. (₹)
(a)	Bank A/c	Dr.	100	
	To Debentures A/c			100
	(Being Debentures issued at par & redeemable at par)			
(b)	Bank A/c	Dr.	95	
	Loss on Issue of Debentures A/c	Dr.	5	
	To Debentures A/c			100
	(Being Debentures issued at a Discount & redeemable at par)			
(c)	Bank A/c	Dr.	105	
	To Debentures A/c			100
	To Securities Premium A/c			5
	(Being Debentures issued at a premium & redeemable at par)			
(d)	Bank A/c	Dr.	100	
	Loss on Issue of Debentures A/c	Dr.	5	
	To Debentures A/c			100
	To Premium payable on Redemption of Debentures A/c			5
	(Being Debentures issued at par & redeemable at premium)			
(e)	Bank A/c	Dr.	95	
	Loss on Issue of Debentures A/c	Dr.	10	
	To Debentures A/c			100
	To Premium payable on Redemption of Debentures			5
	(Being Debentures issued at Discount & Redemption at Premium)			
(f)	Bank A/c	Dr.	90	
	Loss on Issue of Debentures A/c	Dr.	10	
	To Debentures A/c			100
	(Being Debentures at discount & Redemption at discount)			

2. QUESTION (MIX) (EASY)

Micro Swift Ltd. issued 20,000 8% debentures of ₹ 100 each as per follows :
(1) Series A of ₹ 5,00,000 (Nominal) for cash at a premium of 20%
(2) Series B of ₹ 5,00,000 (Nominal) for cash at 90%
(3) Series C of ₹ 5,00,000 (Nominal) to Bharat Bank against a loan of ₹ 4,00,000 as collateral security.
(4) Series D of ₹ 5,00,000 to creditor for ₹ 4,50,000 on account of capital expenditure in satisfaction of his claim
Pass Journal Entries. (Ignore writing off discount on issue of debentures)

SOLUTION

Micro Swift Ltd
Journal Entries

Series	Particulars	Amount ₹ (Dr.)	Amount ₹ (Cr.)

A	Bank A/c Dr. To Debenture Application and Allotment A/c (Application money received on 5000 debentures at a premium of 20%)	6,00,000	6,00,000
	Debenture Application and Allotment A/c Dr. To 8% Debentures A/c To Securities Premium Account (Transfer of application money)	6,00,000	5,00,000 1,00,000
B	Bank A/c Dr. To Debenture Application and Allotment A/c (Application money received on 5000 debentures at a discount of 10%	4,50,000	4,50,000
	Debenture Application and Allotment A/c Dr. Discount on issue of Debentures A/c Dr. To 8% Debentures A/c (Transfer of application money)	4,50,000 50,000	5,00,000
C	Bank A/c Dr. To Bharat Bank Loan A/c (Bank Loan secured by issue of debentures)	4,00,000	4,00,000
	Debenture Suspense A/c Dr. To 8% Debentures A/c (Issue of debentures as collateral security)	5,00,000	5,00,000
D	Fixed Assets Account Dr. To Vendor A/c (Capital expenditure made for the purpose of fixed assets)	4,50,000	4,50,000
	Vendor A/c Dr. Discount on issue of Debentures A/c Dr. To 8% Debentures A/c (Issue of debentures to fixed assets vendor)	4,50,000 50,000	5,00,000

ISSUE OF DEBENTURES AS A COLLATERAL SECURITY (EASY)

3. QUESTION:

B Ltd. secured an overdraft of ₹80,000 from the bank by issuing 900, 12% Debentures of ₹100 each as collateral security. Prepare the Balance Sheet of the Company.

ANSWER:

Method 1 :

No Entry will be passed, the fact of Debentures issued as a collateral will be disclosed in Notes to Accounts.

Notes to A/cs:	**₹**
Current Liabilities	
Short term Borrowings	
Bank Overdraft (900, 12% Debentures of ₹100 each issued as a Collateral Security for Bank Overdraft)	80,000

Method 2:		
Debentures Suspense A/c Dr. To 12% Debenture A/c (Being 900 Debenture issued as a collateral)	90,000	90,000

Balance Sheet of B Ltd.

Particulars	Notes	Amount (₹)
Equities & Liabilities	1	
Non-Current Liabilities		
Long Term Borrowing		90,000
Assets		
Non-Current Assets		
Other NCA		90,000
Notes to A/cs:		
1) Long Term Borrowings:		
Debentures (900 Deb. of ₹100 each issued as a collateral)		90,000
2) Other Non-Current Assets:		
Deb. Suspense		90,000

ISSUE OF DEBENTURES FOR CONSIDERATION OTHER THAN CASH (EASY)

4. QUESTION:

Radha Ltd. purchased machinery worth ₹1,20,000 and building worth ₹2,00,000 from Deepa Ltd. for an agreed purchase consideration of ₹3,00,000 to be satisfied by the issue of 3,000, 12% debentures of ₹100 each.

Show the necessary journal entries in the books of Radha Ltd. (SIMILAR ASKED IN JUNE 25)

ANSWER:

Journal Entries
In the Books of Radha Ltd.

S. No.	Particulars		Debit (₹)	Credit (₹)
(1)	Machinery A/c	Dr.	1,20,000	
	Building A/c	Dr.	2,00,000	
	To Deepa Ltd.			3,00,000
	To Capital Reserve A/c			20,000
	(Being Machinery & Building purchased from Deepa Ltd.			
(2)	Deepa Ltd. A/c	Dr.	3,00,000	
	To 12% Debentures A/c			3,00,000
	(Being 3,000, 12% Debentures issued to Deepa Ltd. as a Consideration)			

INTEREST ON DEBENTURES (EASY)

5. QUESTION

M Ltd. had issued ₹5,00,000, 10% debentures on which interest was payable half-yearly on 30th September and 31st March. Show the necessary journal entries relating to debenture interest for the year ended 31st March, 2018 assuming that all moneys were duly paid by the company. Tax deducted at source is 10%.

ANSWER:

Journal Entries
In the Books of M Ltd.

Date	Particulars		Debit (₹)	Credit (₹)
30.09.2017	Interest on Debentures A/c	Dr.	25,000	
	$(5{,}00{,}000 \times 10\% \times \frac{6}{12})$			25,000
	To Debenture Holders A/c			
	(Being Interest on Debentures due for 6 months)			

30.09.2017	Debenture-holders' A/c Dr. To Bank (25,000 × 90%) To TDS payable A/c (25,000 × 10%) (Being Interest paid)	25,000	 22,500 2,500
30.09.2017	TDS payable A/c Dr. To Bank A/c (Being TDS Deposited)	2,500	 2,500
31.3.2018	Interest on Deb. A/c Dr. To Deb. Holders A/c (Being interest due)	25,000	 25,000
31.3.2018	Debenture-holders' A/c Dr. To Bank A/c To TDS Payable A/c (Being interest paid and TDS deducted)	25,000	 22,500 2,500
31.3.2018	TDS Payable A/c Dr. To Bank A/c (Being TDS amount deposited)	2,500	 2,500
31.3.2018	Profit and Loss A/c Dr. To Interest on Deb. A/c (Being Interest transferred to P & L at end of year)	50,000	 50,000

ISSUE OF DEBENTURES FOR CONSIDERATION OTHER THAN CASH (MEDIUM)

6. QUESTION

Z Ltd. took over the assets of ₹6,00,000 and liabilities of ₹80,000 of C Ltd. for an agreed purchase consideration of ₹5,40,000 to be satisfied by the issue of 10% Debentures of ₹1,000 each.
Required: Show the necessary journal entries in the books of Z Ltd., assuming that –
Case (a) Such Debentures are issued at par;
Case (b) Such Debentures are issued at 20% premium; and
Case (c) Such Debentures are issued at 10% discount.

ANSWER:

In the Books of Z Ltd.

	Particulars	Dr. (₹)	Cr. (₹)
	Sundry Assets A/c Dr. Goodwill A/c Dr. To Sundry Liabilities A/c To C Ltd. (Being the purchase of assets and liabilities from B Ltd.)	6,00,000 20,000	 80,000 5,40,000
(a)	**If Debentures are issued at par** C Ltd. Dr. To 10% Debentures A/c (540 × 1,000) (Being the issue of 540 debentures at par to C Ltd.)	5,40,000	 5,40,000
(b)	**If Debentures are issued at 20% premium** C Ltd. Dr. To 10% Debentures A/c (450 × 1,000) To Securities Premium A/c (450 × 200) (Being the issue of 450 debentures at a premium of 20% to C Ltd.)	5,40,000	 4,50,000 90,000
(c)	If Debentures are issued at 10% discount C Ltd. Dr. Discount on Issue of Debentures A/c (600 × 10) Dr. To 10% Debentures A/c (600 × 1,000)	5,40,000 60,000	 6,00,000

	(Being the issue of 6,00 debentures at a discount of 10% of C Ltd.)		

Working Notes:
(i) The amount by which the purchase consideration exceeds the value of the net assets (i.e. the different between the agreed value of the assets taken over and the agreed amount of liabilities taken over) has been debited to Goodwill Account.

(ii) Calculation of No. of Debentures to be issued in each case.

	At 20% Premium	At 10% Discount	At Par
A. Issue Price per Debenture (₹)	1,200	900	1,000
B. Purchase Consideration (₹)	5,40,000	5,40,000	5,40,000
C. No. of Debentures to be issued (Purchase Consideration/Issue Price)	450	600	540

WRITE OFF OF LOSS ON ISSUE OF DEBENTURES (INSTALLMENT METHOD)

7. QUESTION

Bee Ltd. issued 2,000, 12% Debentures of ₹100 each at a discount of 6% on 01.04.2009 repayable by equal annual drawings in four years.
You are required to show the Discount amount to be written off over the period.

ANSWER:

Year	O/S Opening Balance	Ratio
1	2,00,000	4
2	1,50,000	3
3	1,00,000	2
4	50,000	1

(2) Loss = (2,000 × 100) × 6% = 12,000/-

(3) Loss to be written off every year:

Year	Calculation	Amount
1	$12{,}000 \times \frac{4}{10}$	4,800
2	$12{,}000 \times \frac{3}{10}$	3,600
3	$12{,}000 \times \frac{2}{10}$	2,400
4	$12{,}000 \times \frac{1}{10}$	1,200
		12,000

8. QUESTION (EASY)

Rama Ltd. issued 5,000, 8% debentures of 1,000/- each at a discount of 5% on April 1, 2020. The debentures are repayable by equal annual drawings in four years.
You are required to show the amount of discount to be written off every year.

SOLUTION

Repayment Schedule

Date	Debentures Issued	Face Value	Outstanding Value at beginning of year	Repayment at end of year
01 April 2020	5000	₹ 1000/-	₹ 50,00,000	₹ 12,50,000

Date	Debentures Issued	Face Value	Outstanding Value at beginning of year	Repayment at end of year
01 April 2021			₹ 37,50,000	₹ 12,50,000
01 April 2022			₹ 25,00,000	₹ 12,50,000
01 April 2023			₹ 12,50,000	₹ 12,50,000

The total discount on issue of debentures will be written off in proportion to the debentures outstanding at the beginning of each year.

Discount on issue	₹ 50,00,000	5%	₹ 2,50,000
	Outstanding value at beginning of year		Discount to be written off at end of the year
01 April 2020	₹ 50,00,000	0.40	₹ 1,00,000
01 April 2021	₹ 37,50,000	0.30	₹ 75,000
01 April 2022	₹ 25,00,000	0.20	₹ 50,000
01 April 2023	₹ 12,50,000	0.10	₹ 25,000

REDEMPTION OF DEBENTURES (CONVERSION INTO SHARES METHOD)

9. QUESTION (EASY)

Shiv Shakti Ltd. issued 20,000, 13%, Convertible Debentures of ₹ 100 each on 1st April, 2024. The debentures are due for redemption on 1st July, 2024. The terms of issue of debentures provided that they were redeemable at a premium of 5% and also conferred an option to the debentureholders to convert 20% of their holding into equity shares having a nominal value of ₹ 10 per share at a price of ₹ 15 per share. Debentureholders holding 2,500 debentures did not exercise the option.

Calculate the number of equity shares to be allotted to the Debentureholders exercising the option to the maximum. (JUNE 25)

ANSWER:

Calculation of number of Equity Shares to be allotted

Particulars	Number of Debentures
Total number of debentures	20,000
Less: Debenture holders not opted for conversion	(2,500)
Debenture holders opted for conversion	**17,500**
Option for conversion	20%
Number of debentures to be converted (20% of 17,500)	**3,500**

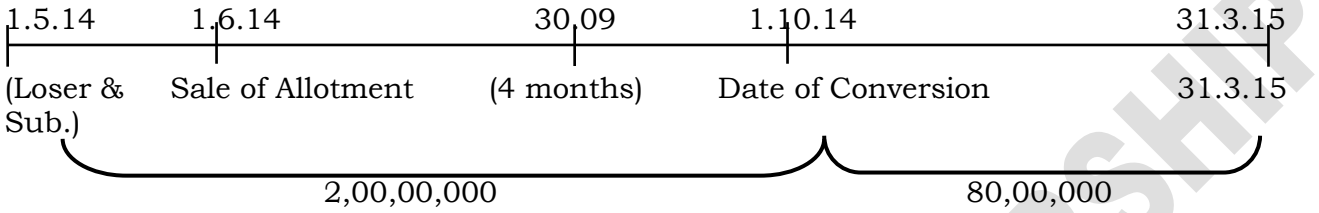
Redemption value of 3,500 debentures at a premium of 5% [3,500 × (₹100 + ₹ 5)]
= ₹3,67,500
Equity Shares of ₹10 each issued on conversion at a price of ₹ 15 [₹ 3,67,500 / ₹ 15]
= 24,500 Shares.

10. QUESTION: (TOUGH)

Nima Limited recently made a public issue in respect of which the following information is available:
(a) No. of partly convertible debentures issued 2,00,000; face value and issue price ₹100 per debenture.
(b) Convertible portion per debenture 60%, date of conversion on expiry of 6 months from the date of closing of issue.

(c) Date of closure of subscription lists 1.5.2014, date of allotment 1.6.2014, rate of interest on debenture 15% payable from the date of allotment, value of equity share for the purpose of conversion ₹60 (Face Value ₹10).
(d) Underwriting Commission 2%.
(e) No. of debentures applied for 1,50,000.
(f) Interest payable on debentures half-yearly on 30th September and 31st March.
Write relevant journal entries for all transactions arising out of the above during the year ended 31st March, 2015 (including cash and bank entries).

ANSWER:



(30.09)

$2{,}00{,}00{,}000 \times 15\% \times \frac{4}{12} = 10{,}00{,}000$

$No.\ of\ Equity\ Shares = \frac{2{,}00{,}00{,}000 \times 60\%}{60} = 2{,}00{,}000\ ES.$

1,20,000 = 31.10.14 = 1 months

2,00,00,000 = 1,20,00,000 = 31.10.14 = 1 month
80,00,000 = 6 months

$Interest = \left(1{,}20{,}00{,}000 \times 15\% \times \frac{1}{12}\right) + (80{,}00{,}000 \times 15\% \times \frac{6}{12})$

= 1,50,000 + 6,00,000
= 7,50,000

Journal Entries
In the Books of Nima Ltd.

Date	Particulars	(Dr.)	(Cr.)
1.5.14	Bank A/c Dr. To Deb. Application (Being 1,50,000 Deb. subscribed by public)	1,50,00,000	1,50,00,000
1.6.14	Deb. Application A/c Dr. To 15% Deb. A/c	1,50,00,000	1,50,00,000
1.6.14	Underwriting A/c (50,000 × 100) Dr. To 15% Deb. A/c (Being 50,000 Deb. allotted to underwriters)	50,00,000	50,00,000
1.6.14	Underwriting Commission A/c Dr. (2,00,00,000 × 2%) To Underwriters A/c (Being Commission due)	4,00,000	4,00,000
1.6.14	Bank A/c (50,00,000 – 4,00,000) Dr. To Underwriters A/c (Being Amt. received from underwriters)	46,00,000	46,00,000
30.09	Debentures Interest A/c Dr. To C/B A/c (Being Interest paid for 4 months)	10,00,000	10,00,000

31.10	Debenture Holder A/c Dr. To ESC A/c (2,00,000 × 10) To SP A/c (2,00,000 × 50) (Being Equity shares issued to debenture holders)	1,20,00,000	 20,00,000 1,00,00,000
31.10	15% Deb. A/c (FV = 100) Dr. To 15% Deb. A/c (FV = 40) To Deb. Holders A/c (Being debentures of Face value 100 cancelled and debentures of Face value 40 issued after conversion of 60% portion of debentures into shares)	2,00,00,000	 80,00,000 1,20,00,000

REDEMPTION OF DEBENTURES (OWN DEBENTURES METHOD) (TOUGH)

11. QUESTION:

Fortune Ltd. had 4000, 12% Debentures of ₹ 100 each as on 1st April, 2018. As per terms of the issue, the company purchased the following debenture in the open market for immediate cancellation:

1st May, 2018	800	Debentures at cum-interest	₹ 98 each
1st January, 2019	1,600	Debentures at cum-interest	₹ 100.25 each
1st March, 2019	400	Debentures at ex-interest	₹ 98.50 each

The company closes its books on 31st March each year. Assuming that debenture interest was payable half-yearly on 30th September and 31st March, show the following accounts in the books of company:

(i) 12% Debentures A/c
(ii) Debenture Interest A/c
(iii) Profit on Redemption of Debenture A/c

ANSWER:

12% Debentures A/c

Date	Particulars	Dr. (Amount)	Date	Particulars	Cr. (Amount)
1.5	To Own Deb. A/c	77,600	1.4	By Op. Bal. b/d	4,00,000
	To Profit on Cancellation	2,400			
1.1	To Own Deb. A/c	1,55,600			
	To Profit on Cancellation	4,400			
1.3.	To Own Deb.	39,400			
	To Profit on Cancellation	600			
31.3	To Balance C/D	1,20,000			
		4,00,000			4,00,000

Own Debentures A/c

Date	Particulars	Dr. (Amount)	Date	Particulars	Cr. (Amount)
1.5.	To C/B	77,600	1.5	By 12% Deb.	77,600
1.1.19	To C/B	1,55,600	1.1	By 12% Deb.	1,55,600
1.3	To C/B	39,400	1.3.	By 12% Deb.	39,400
		2,72,600			2,72,600

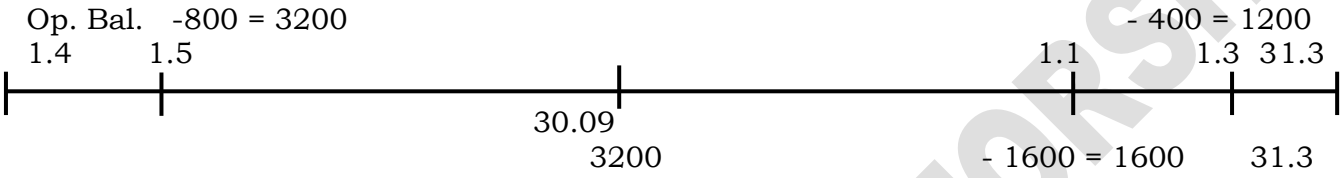
Debentures Interest A/c

Date	Particulars	Dr. (Amount)	Date	Particulars	Cr. (Amount)
1.5	To C/B	800	31.3.	By P & L	34,000

30.09	TO C/B	19,200			
1.1.19	To C/B	4,800			
1.3	To C/B	2,000			
31.3	To C/B	7,200			
		34,000			34,000

Profit on Cancellation A/c

Date	Particulars	Dr. (Amount)	Date	Particulars	Cr. (Amount)
1.5	To C/R	2,400	1.5	By 12% Deb. A/c	2,400
1.1.19	To C/R	4,400	1.1.19	By 12% Deb. A/c	4,400
1.3.19	To C/R	600	1.3.19	By 12% Deb. A/c	600
		7,400			7,400



$$3200 \times 100 \times 12\% \times \frac{6}{12} = 19{,}200$$

(1.5)

$$800 \times 100 \times 12\% \times \frac{1}{12} = 800/-$$

Pay = 800 × 98 = 78,400
(-) Interest = (800)
Own Deb. = 77,600

$$1600 \times 100 \times 12\% \times \frac{3}{12} = 4{,}800$$

Pay = 1600 × 100.25 = 1,60,400
(-) Interest = (4,800)
Own Deb. = 1,55,600

(1.3)

$$400 \times 100 \times 12\% \times \frac{5}{12} = 2{,}000$$

Own Deb. = 400 × 98.5 = 39,400
(Ex – Int.)
(+) Interest = 2000
= 41,400 Pay

(31.3)

$$1200 \times 100 \times 12\% \times \frac{6}{12} = 7{,}200$$

REDEMPTION OF DEBENTURES (DRR METHOD) (TOUGH)

12. QUESTION

The following balances appeared in the books of a company (unlisted company other than AIFI, Banking company, NBFC and HFC) as on December 31, 2022: 6% Mortgage 10,000 debentures of ₹10 each; Debenture Redemption Reserve (for redemption of debentures) ₹5,000; Investments in

deposits with scheduled bank, free from any charge or lien ₹15,000 at interest 4% p.a. receivable on 31st December every year. Bank balance with the company is ₹90,000.

The Interest on debentures had been paid up to December 31, 2022.

On February 28, 2023, the investments were realised at par and the debentures were paid off at 10.1, together with accrued interest.

Write up the concerned ledger accounts (excluding bank transactions).

ANSWER:

6% Mortgage Debentures Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Feb. 28, 2023	To Debenture-holders A/c		1,00,000	Jan. 1, 2023	By Balance b/d		1,00,000

Debentures Redemption Reserve Investment Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Jan. 1, 2023	To Balance b/d		15,000	Feb. 28, 2023	By Bank		15,000

Debenture Interest Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Feb. 28, 2023	To Bank (10,000 × 10 × 6% × 2/12)		1,00,000	Feb. 28, 2023	By Profit & Loss A/c		1,000

Bank A/c

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Jan. 01, 2023	To Balance b/d		90,000	Feb. 28, 2023	By Debenture-holders (10,000 × 10.1)		1,01,000
Feb. 28, 2023	To Interest on Debentures Redemption Investments (15,000 × 4% × 2/12)		1,00		By Debenture Interest A/c		1,000
	To Debentures Redemption Reserve Investment A/c		15,000		By Balance c/d		3,100
			1,05,100				1,05,100

Debenture Redemption Reserve Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Feb. 28, 2023	To General Reserve (note)		10,000	Jan. 1, 2023	By Balance b/d		5,000

				Jan. 1, 2023	By Profit & Loss (b/f)		5,000
			10,000				10,000

Note: Amount to be transferred to DRR before the redemption = ₹10,000 [i.e. 10% of (10,000 ×10)].

REDEMPTION OF DEBENTURES (DRR METHOD) (TOUGH)

13. QUESTION

The following balances appeared in the books of Apple Ltd (unlisted company other than AIFI, Banking company, NBFC and HFC) as on 1-4-2022:
(i) 12 % Debentures ₹75,000
(ii) Balance of DRR ₹25,000

(iii) DRR Investment ₹11,250 represented by 10%₹ 1,125 Secured Bonds of the Government of India of ₹10 each.

Annual contribution to the DRR was made on 31st March every year. On 31-3-2023, balance at bank was ₹75,000 before receipt of interest. The investment were realised at par for redemption of debentures at a premium of 10% on the above date.

You are required to prepare the following accounts for the year ended 31st March, 2023:
(1) Debentures Account
(2) DRR Account
(3) DRR Investment Account
(4) Bank Account
(5) Debenture Holders Account.

Solution:

12% Debentures Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Mar. 31, 2023	To Debenture-holders A/c		75,000	April, 1, 2022	By Balance b/d		75,000

10% Secured Bonds of Govt. (DRR Investment) A/c

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Apr. 1, 2022	To Balance b/d		11,250	Mar. 31, 2023	By Bank		11,250

Bank A/c

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Apr. 01, 2022	To Balance b/d		75,000	Mar. 31, 2023	By Debenture-holders		82,500
Mar. 31, 2023	To Interest on Debentures Redemption Investments (11,250 ×10%)		1,125		By Debenture Interest A/c		
	To Debentures Redemption Reserve Investment A/c		11,250		By Balance c/d		4,875

			87,375				87,375

Debenture Redemption Reserve Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Mar. 31, 2023	To General Reserve (note)		7,500	Apr. 1, 2022	By Balance b/d		2,500
				Apr. 1, 2022	By Profit & Loss (b/f)		5,000
			7,500				7,500

Note: Calculation of DRR before redemption = 10% of ₹75,000 = 7500
Available balance = 2500
DRR required = 7500 - 2500 = 5000.

Debenture Holder Account

Date	Particulars	J. F.	Amount	Date	Particulars	J. F.	Amount
Mar. 31, 2023	To Bank A/c		82,500	Apr. 1, 2022	By 12% Debenture		75,000
				Apr. 1, 2022	By Premium on redemption of debentures (75,000 × 10%)		7,500
			82,500				82,500

REDEMPTION OF DEBENTURES (DRR METHOD) (EASY)

14. QUESTION

The Balance Sheet of Shyam Co. Ltd. (unlisted company other than AIFI, Banking company, NBFC and HFC) as at 31st March, 2023 **shown Long term borrowings with respect to** 12% Debentures of ₹1,00,000

At the Annual General Meeting, it was resolved that to repay the debentures at a premium of 5%. Give the necessary journal entries for these transactions.

ANSWER:

Journal Entries			
Particulars	**L. F.**	**Amount (Dr.)**	**Amount (Cr.)**
Profit and Loss A/c Dr. To Debenture Redemption Reserve (for DRR created 10% × 1,00,000)		10,000	 10,000
Debenture Redemption Reserve Investment A/c Dr. To Bank A/c (for DRR Investment created 15% × 1,00,000)		15,000	 15,000
12% Debentures A/c Dr. Premium Payable on Redemption A/c @ 5% Dr. To Debenture holders A/c (Amount payable to debentures holders)		1,00,000 5,000	 1,05,000
Profit and loss A/c Dr. To Premium Payable on Redemption A/c (Premium payable on redemption of debentures charged to Profit & Loss A/c)		5,000	 5,000

Debenture Redemption Reserve A/c Dr. To General Reserve (for DRR transferred to general reserve)		10,000	 10,000
Bank A/c Dr. To Debenture Redemption Reserve Investment (for DRR Investment realized)		15,000	 15,000
Debenture holders A/c Dr. To Bank A/c (Amount paid to debenture holders on redemption)		1,05,000	 1,05,000

15. QUESTION

An unlisted company – other than AIFI, Bank, NBFC and HFC – has debentures on its balance sheet as on 31st March, 2022. Balances are as follows :

Particulars	**Amount (₹)**
10% mortgage debentures of ₹10 each Number 25,00,000	2,50,00,000
Debenture Redemption Reserve (DRR)	1,25,00,000
Unencumbered Investments in Fixed deposits of Scheduled Commercial Banks (Interest @ 7%)	37,50,000
Bank Balance	3,25,00,000

The interest on debentures is paid until 31st March, 2022.

The debentures were repaid on 30th June, 2022 at 10% premium. The investments were realized at par.

Prepare the following ledgers :

- Debenture Account, Debenture Interest Account and Debentures Redemption Reserve Investment Account.
- Debenture Redemption Reserve Account.
- Extract of bank account relating to above transactions.

SOLUTION

10% Mortgage Debentures Account					
Date	**Particulars**	**Amount (₹)**	**Date**	**Particulars**	**Amount (₹)**
30th June 2022	To Debenture Holders A/c	2,50,00,000	1st April 2022	By balance b/d	2,50,00,000

Debentures Redemption Reserve (DRR) Investment Account					
Date	**Particulars**	**Amount (₹)**	**Date**	**Particulars**	**Amount (₹)**
1st April 2022	To balance b/d	37,50,000	30th June 2022	By Bank	37,50,000
Debenture Interest Account					
Date	**Particulars**	**Amount (₹)**	**Date**	**Particulars**	**Amount (₹)**
30th June 2022	To Debenture holder A/c (2,50,00,000 × 10% × 3/12)	6,25,000	30th June 2022	By Profit and Loss A/c	6,25,000
Debentures Redemption Reserve (DRR) Account					
Date	**Particulars**	**Amount (₹)**	**Date**	**Particulars**	**Amount (₹)**
30th June 2022	To General Reserve	2,50,00,000	1st April 2022	By Balance b/d	1,25,00,000

			1st April 2022	By Profit and Loss A/c	1,25,00,000

Bank A/c

Date	Particulars	Amount (₹)	Date	Particulars	Amount (₹)
1st April 2022	To Balance b/d	3,25,00,000	30th June 2022	By Debenture Holders A/c	2,81,25,000
30th June 2022	To Interest on DRR Investment A/c 37,50,000 x 7% x 3/12)	65,525			
30th June 2022	To DRR Investment A/c	37,50,000	30th June 2022	By Balance c/f	81,90,625
		3,63,15,625			3,63,15,625

REDEMPTION OF DEBENTURES SINKING FUND METHOD

16. QUESTION

The following balances appeared in the books of a Company as on 1st April, 2022 : Sinking Fund for Redemption of Debentures ₹5,50,000;
Sinking Fund Investments ₹3,44,325;
7% Debentures ₹10,00,000.
In order to redeem these debentures, the company sold the Sinking Fund Investments and realized ₹3,45,000.
You are required to pass journal entry for the accounting treatment of profit/ loss on sale of Sinking Fund Investment.

(ii) Out of ₹10,00,000 6% Debentures outstanding on 1st April, 2022, ₹5,00,000. Debentures were redeemed on 31st October, 2022. The balance of Debenture Sinking Fund Account on 1st April, 2022 was ₹10,00,000. Interest on debenture is paid on 31st March, 2022.

How will you deal with the balance of Debenture Sinking Fund Account at the time of its redemption ? You are required to pass necessary journal entry in this regard. What will be the amount of interest paid on these debentures at the time of redemption ?

ANSWER:

(i) Sale Price of Investments		₹3,45,000
Less: Book Value of Investments Sold		₹3,44,325
Profit on Sale of Investments		₹675
Journal Entry:		
Debenture Sinking Fund Investments A/c To Debenture Sinking Fund A/c P & L (Profit on Sale of Investments transferred to Sinking Fund Account)	Dr.	675 675
(ii) On 31st October, 2022, redemption of Debenture of ₹5,00,000. The following entry are passed.		
Debenture Sinking Fund A/c To General Reserve A/c (Amount transferred on redemption of debenture)	Dr.	5,00,000 5,00,000

The interest on debentures is paid each year on 31st March, the interest paid on redeemed debentures from 1st April, 2022 to 31st October, 2022 i.e. for 7 months @ 6% per annum is calculated as under:

Amount of Interest = 5,00,000 × 7 × 6% / 12 = ₹17,500

COST OF CONTROL & MINORITY INTEREST (MEDIUM)

17. QUESTION (EASY)

The summarised Balance Sheets of H Ltd. and S Ltd. as on 31st March, 2025 is given below:

Equities and Liabilities	**H Ltd.**	**S Ltd.**
Share Capital (Face value of ₹10 per share)	30,00,000	6,00,000
Reserves	4,80,000	1,80,000
Profit and Loss Account	3,60,000	2,40,000
	38,40,000	**10,20,000**
Assets		
Sundry Assets	30,00,000	10,20,000
48,000 shares in S Ltd.	8,40,000	
	38,40,000	**10,20,000**

S Ltd. had reserves of ₹ 1,80,000 when H Ltd. acquired shares in S Ltd. The P & L balance of S Ltd. was fully earned after the acquisition of shares by H Ltd. S Ltd. decided to issue bonus shares out of post-acquisition profit in the ratio of 1 share for every 10 shares held.

Calculate the cost of control before and after issue of bonus shares. (JUNE 25)

ANSWER:

Cost of control before and after issue of bonus shares of S Ltd.

Calculation of cost of control before issue of bonus shares	
Amont of consideration	₹8,40,000
Less: Face Value of Shares acquired	₹4,80,000
	₹3,60,000
Less: Share amount of reserves (180,000*80%)	₹1,44,000
Cost of control/Goodwill before issue of bonus shares	**₹2,16,000**

Calculation of cost of control after issue of bonus shares	
Amount of consideration	₹8,40,000
Less: Face Value of Share acquired	₹4,80,000
	₹3,60,000
Less: Share amount in reserves (180,000*80%)	₹1,44,000
	₹2,16,000
Less: H Ltd.'s share in bonus [600000*80*1/10]	**₹48,000**
Cost of Control/Goodwill	**₹1,68,000**

18. QUESTION

The extracts of balance sheets of H Ltd. and S Ltd. as on 31st March, 2015 are given below:

	H Ltd. (₹)	S Ltd. (₹)
I. EQUITY AND LIABILITIES		
(1) Shareholders' funds		
(a) Share capital		
Equity shares of ₹ 10 each	5,00,000	2,00,000
(b) Reserves and surplus		
Securities premium	50,000	10,000
General reserve	1,00,000	50,000

Surplus	75,000	20,000
(2) Current liabilities		
Trade payables	80,000	40,000
TOTAL	8,05,000	3,20,000
II. ASSETS		
(1) Non-current assets		
(a) Fixed assets		
Tangible assets	5,10,000	3,20,000
(b) Long-term investment		
(15,000 equity shares in S Ltd. at cost)	2,95,000	-
TOTAL	8,05,000	3,20,000

H Ltd. acquired shares in S Ltd. on 31st March, 2015.
You are required to calculate —
(a) Minority interest; and
(b) Goodwill/capital reserve.

ANSWER:

$\frac{15,000}{20,000} \times 100 = 75\%$

H – 75%
MI – 25%

Working Notes:

1) Minority Interest	₹
a) Share Capital (25% × 2,00,000)	50,000
b) Pre-Acq. Profits [25% × (10,000 + 50,000 + 20,000)]	20,000
	70,000
2) Cost of Control (Goodwill/ C/R)	₹
a) Net Cost of Investment	2,95,000
b) Share in N. A. of S Ltd.	
Share Capital (75% × 2,00,000)	(1,50,000)
Pre-Acq. Profit [75% × (10,000 + 50,000 + 20,000)]	(60,000)
∴ *Goodwill*	85,000

Consolidated Balance Sheet

Particulars	**₹**
E & L	
1) SF	
SC	5,00,000
R & S (50,000 + 1,00,000 + 75,000)	2,25,000
2) M. I.	70,000
3) $\frac{C.L}{T/P}$	1,20,000
TOTAL	9,15,000
A.	
PPE & I. A	
PPE (5,10,000 + 3,20,000)	8,30,000
I. A (Goodwill)	85,000
TOTAL	9,15,000

19. QUESTION (MEDIUM)

From the following details, calculate value of Goodwill/Capital Reserve and Minority Interest that will reflect in consolidated Balance Sheet on 31st March, 2023 :

Summarized Balance Sheets as on 31st March, 2023

Liabilities	H. Ltd. (₹)	S. Ltd. (₹)	Assets	H. Ltd. (₹)	S. Ltd. (₹)
Share Capital (₹100 shares)	10,00,000	4,00,000	Sundry Assets	20,00,000	10,00,000
Profit and Loss	6,00,000	4,00,000	3000 shares in S. Ltd. (01.04.22)	7,00,000	-
General Reserve	2,00,000	…….			
Liabilities	9,00,000	2,00,000			
Total	27,00,000	10,00,000	Total	27,00,000	10,00,000

Balance Sheet of S Ltd. on 31st March, 2022 exhibited profit of ₹1,00,000 and general reserve of ₹60,000. (5 marks)

ANSWER:

(i) Calculation of Goodwill:	
Cost of Investment in shares:	₹7,00,000
Less: Value of H Ltd.'s equity on date of acquisition:	(₹4,20,000)
Value of Goodwill	₹2,80,000
Calculation of Value of H Ltd.'s equity on date of acquisition:	
Proportionate holding of H Ltd. in S Ltd. = 3000/4000 * 100	= 75%
Face Value of shares = 3000 * 100	= 3,00,000
Share in pre-acquisition profit = 1,00,000* 75/100	= 75,000
Share in pre-acquisition reserves = 60,000* 75/100	= 45,000
	₹4,20,000
(ii) Calculation of Minority Interest	
Nominal Value of Equity Shares held by Minority Shareholders = 1000*100	= 100000
Add : Share in pre-acquisition profits and reserves (100000+60000) * 25/ 100	= 40000
Add : Share in post-acquisition profits (400000-160000) * 25 / 100	= 60000
	= ₹200000

20. QUESTION (TOUGH)

On 31st March, 2023, H Ltd. has 20,000 shares out of 25,000 equity shares issued by S Ltd. H Ltd. acquired these shares in S Ltd. in the following manner :

Date of Acquisition	% of Shares Acquired
01st April, 2022	25%
01st October, 2022	37.5%
01st January, 2023	37.5%

On 31st March, 2022, the balance sheet of S Ltd. exhibited equity share capital of ₹2,50,000 (in ₹ 10 shares) and reserves and surplus of ₹1,25,000. During the year 2022-23, net profit earned by the company was ₹50,000, that was distributed evenly throughout the year. Amount of Reserves and Surplus on 31st March, 2023 stood at ₹1,75,000.

Ascertain the share of parent company in profits of S Ltd. on the dates of acquisition of these shares.

ANSWER:

Calculation of share of H Ltd. in profits of S Ltd. on the dates of acquisition of shares.

On 01.04.2022	
Reserves and Surplus: ₹1,25,000	
Shares acquired by H Ltd. on 01.04.22 = 20000 * 25/100	= 5,000 shares
Proportionate holding of H Ltd. in S Ltd. =5000/25000 * 100	= 20%

Share of H Ltd. in profit on 01.04.22= 1,25,000 * 20/100	= 25,000
On 01.10.2022	
Reserves and Surplus on 01.04.22:	= ₹1,25,000
Profit earned during 2022-23: ₹50,000	
Proportionate profit up to 0.1.10.22 (6 months) = 50,000 *6/12	= ₹25,000
	= ₹1,50,000
Profit for distribution	
Shares freshly acquired by H Ltd.: 20,000 * 37.5/100	= 7500 shares
Proportion of freshly acquired share in S Ltd. = 7,500/25,000* 100	= 30%
Total share acquired by H Ltd. in S Ltd = 20%+30%	= 50%
Share of H Ltd. in profit on 1/10/2022= 150000*50%	= ₹75000
On 01.01.2023	
Reserves and Surplus on 01.04.2022	= ₹1,25,000
Profit earned during 2022-23	= ₹50,000
Proportionate profit up to 01.01.23 (9 months) = 50,000 *9/12	₹37,500
	₹1,62,500
Profit for distribution	
Shares freshly acquired by H Ltd.: 20,000 * 37.5/100	= 7500 shares
Proportion of freshly acquired share in S Ltd. = 7,500 / 25,000*100	= 30%
Total Share of H Ltd. in S Ltd. on 1/1/23= 50%+30%	= 80%
Share of H Ltd. in profits on 1/1/23 = 162500*80%	= 130000

21. QUESTION

Balance Sheet of S Ltd. is given below

Particulars	Amount (₹)
Liabilities	
Share Capital of 10/- each fully paid	**6,00,000**
General Reserve	**1,50,000**
Profit and Loss Account	**1,05,000**
Creditors	**1,80,000**
	10,35,000
Assets	
Fixed Assets	**3,00,000**
Current Assets	**7,35,000**
	10,35,000

Other information :

- Holding company H Ltd. has bought 48,000 shares in its subsidiary S Ltd.
- Consideration for purchase of shares in S Ltd. ₹ 9,00,000/-
- General Reserve of S Ltd. on date of acquisition ₹ 1,20,000/-
- Profit and Loss Account on date of acquisition ₹ 24,000/-

Calculate :

(i) Minority lnterest and Goodwill.

(ii) How will goodwill be treated in consolidated books of accounts ?

SOLUTION

H Ltd.

Minority Interest	₹
Share Capital	1,20,000
Capital Profit (Pre acquisition Capital Reserve + Pre acquisition P&L A/c) x Minority shareholding	28,800
Revenue Profit	22,200

(General Reserve for the year + P&L A/c addition for the year) x minority shareholding	
	1,71,000

Consideration	₹ 9,00,000
Less: Face value of shares acquired	₹ 4,80,000
Less: General Reserve (₹1,20,000 x4/5)	₹ 96,000
Less: P&L Account (₹24,000 x 4/5)	₹ 19,200
Goodwill	**3,04,800**

Goodwill will be shown on the Asset side of Consolidated Balance Sheet of H Ltd.

SIMPLE FULL QUESTION (EASY)

22. QUESTION

From the following information, prepare a consolidated balance sheet

Balance sheets
As on 31 December 2017

Particulars	H Ltd. (Rs.)	S Ltd. (Rs.)
I. Equities & Liabilities		
Share Capital Shares of Rs.10 each	2,00,000	1,00,000
Reserves	50,000	20,000
Profit & Loss A/c	20,000	10,000
Current Liabilities	30,000	20,000
Total	**3,00,000**	**1,50,000**
II. Assets		
Sundry Assets	220000	1,50,000
Investments	80000	
6,000 Shares of S Ltd		
Total	**3,00,000**	**1,50,000**

H Ld. Acquired its shares in S Ltd. on 1 January 2017 when reserves of S Ltd. stood at Rs.4,000 and its profit and loss account (Cr.) was Rs.5,000

ANSWER:

Working Notes:-

(1) Pre-Acq. & Post Acq. Profits:-

	Pre	Post
Reserves	4,000	16,000 (20,000 – 4,000)
Profits	5,000	5,000 (10,000 – 5,000)
	9,000	21,000
H.C % (60%)	5,400	12,600
M.I. % (40%)	3,600	8,400

(2) Cost of Control:	₹
Cost of Investment	80,000
(-) Share in N. A. of S Ltd.	
SC (1,00,000 × 60%)	(60,000)
Pre-Acq. Profits	(5,400)
Goodwill	14,600

(3) M. I	₹
SC (1,00,000 × 40%)	40,000
Pre-Acq.	3,600

Post –Acq.	8,400
	52,000

Consolidated Balance Sheet
As on 31.12.17

I. EQUITIES AND LIABILITIES		Amount (₹)
1. Shareholders' Funds		
Share Capital		2,00,000
R & S (50,000 + 20,000 + 12,600)		82,600
Minority Interest		52,000
Current Liabilities		
T/P (30,000 + 20,000)		50,000
TOTAL		384,600
II. ASSETS		
PPE & I. A		
PPE (2,20,000 + 1,50,000)		3,70,000
I. A (Goodwill)		14,600
TOTAL		3,84,600

BONUS ISSUE ADJUSTMENT: (MEDIUM)

23. QUESTION

The summarized balance sheet of H Ltd. and S Ltd. as on 31 December 2017 are as follows:

Equity and Liabilities	**H Ltd. Rs.**	**S Ltd. Rs.**
Share capital:		
Share of Rs.10 each	15,00,000	3,00,000
Reserves	2,40,000	90,000
Profit & Loss A/c	1,80,000	1,20,000
Total	19,20,000	5,10,000
Assets		
Sundry Assets	15,00,000	5,10,000
24,000 shares in S Ltd.	4,20,000	
Total	19,20,000	5,10,000

S Ltd. had reserves of Rs.90,000 when H Ltd. acquired the shares in S Ltd. but the P&L A/c balance of S Ltd. was fully earned after the purchase of shares.

S Ltd. decided to issue bonus shares out of the post-acquisition profit in the ratio of 2 shares for every S shares held.

Calculate the cost of control before the issue of bonus shares and after the issue of bonus shares.

ANSWER:

Shareholding Pattern:

$$\frac{24,000}{30,000} \times 100 = 80\%$$

M. I = 20%

$$\frac{30,000}{5} \times 2 = 12,000\ Shares$$

(1) Cost of Control before the Bonus Issue:

a) Cost of Investment	4,20,000
b) Share in N. A of S Ltd.	
SC (3,00,000 × 80%)	(2,40,000)
Pre-Acquisition (90,000 × 80%)	(72,000)

Goodwill	1,08,000

(2) Cost of Control after the Bonus Issue:

a) Cost of Investment	4,20,000
b) Share in N. A of S Ltd.	
SC (4,20,000 × 80%)	(3,36,000)
Pre-Acq. (90,000 × 80%)	(72,000)
Goodwill	12,000

$\frac{30,000}{5} \times 2 = 12,000$

Value = 12,000 × 10 = 1,20,000

	Pre	Post
R	90,000	-
Profits	-	1,20,000
(-) Bonus Issue	-	(1,20,000)
	90,000	-
H	72,000	-
MI	18,000	-

Minority Interest:

SC (4,20,000 × 20%)	84,000
Pre-Acq.	18,000
	1,02,000

Subsidiary Shares:

	Before	After
Total	30,000+12,000 =	42,000
H	24,000+9,600=	33,600
S	6,000+2,400=	8,400

Consolidated Balance Sheet

E & L	₹
SF	
SC	15,00,000
R & S (2,40,000 + 1,80,000)	4,20,000
M. I	1,02,000
TOTAL	20,22,000
Assets	
PPE & I. A	
PPE (15,00,000 + 5,10,000)	20,10,000
I. A (Goodwill)	12,000
TOTAL	20,22,000

24. QUESTION

The summarized balance sheet of H Ltd. and S Ltd. as on 31 March, 2023 are given below :

Equity and Liabilities	**H Ltd. (₹)**	**S Ltd. (₹)**
Share Capital:		
Shares of ₹10 each	1,00,00,000	20,00,000
Reserves	16,00,000	6,00,000
Profit & Loss A/c	12,00,000	8,00,000
Total	**1,28,00,000**	**34,00,000**

Assets		
Sundry Assets	1,00,00,000	34,00,000
Equity in S Ltd. 1,60,000 shares	28,00,000	
	1,28,00,000	**34,00,000**

S Ltd. had reserves of ₹ 6,00,000 when H Ltd. acquired shares in S Ltd. but P & L balance was fully earned after the purchase of shares by H Ltd.

S Ltd. decided to issue bonus shares out of the post-acquisition profits in the ratio of 1 share for every 5 shares held.

(i) Calculate cost of control before issue of bonus shares and after issue of bonus shares.
(ii) What will be the journal entry passed in the books of S Ltd. and H Ltd. on issue of bonus shares by S Ltd ?

SOLUTION

Step	Calculation of cost of control before issue of bonus shares	Amount ₹
1	Amount of consideration paid by H Ltd. for acquisition of shares in S Ltd.	28,00,000
2	Less: Face Value of shares acquired	16,00,000
3	Less: H Ltd.'s share in capital profits 600,000 × (8/10)	4,80,000
4	Cost of control/Goodwill	**7,20,000**

Step	Calculation of cost of control after issue of bonus shares	Amount ₹
1.	Amount of consideration paid by H Ltd. for acquisition of shares in S Ltd.	28,00,000
2.	Less: Face Value of Shares acquired	16,00,000
3.	Less: H Ltd.'s share in capital profits 6,00,000 × (8/10)	4,80,000
		7,20,000
4.	H Ltd.'s share in bonus (20,00,000 × 8/10 × 1/5)	3,20,000
5.	Cost of Control/Goodwill	**4,00,000**

Journal Entries

		Amount in ₹
Books of S Ltd.	P & L A/c Dr. To Equity Share Capital A/c **(Being issue of bonus shares in the ratio of 1 share for every 5 shares held)**	4,00,000 4,00,000
Books of H Ltd.	No entry is passed	

REVALUATION OF ASSETS: (TOUGH)

25. QUESTION

The following are the Balance Sheets of H Ltd. and its subsidiary S Ltd. at 31st March, 2018:

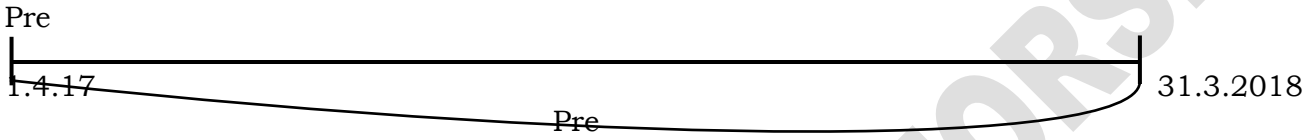
PARTICULARS	Note No.	H Ltd. (₹)	S Ltd. (₹)
I. EQUITY AND LIABILITIES			
(1) Shareholders' Funds:			
(a) Share Capital (equity shares of ₹ 10 each)		5,00,000	2,00,000
(b) Reserves and Surplus		1,00,000	50,000
(2) Current Liabilities:			
Trade Payables		80,000	60,000
	Total	6,80,000	3,10,000
II. ASSETS			

(1) Non-Current Assets:			
(a) Fixed Assets – Tangible		3,00,000	1,00,000
(b) Non-current investment (12000 equity shares in S Ltd. acquired on 31st March, 2018 at cost)		1,80,000	
(2) Current Assets		2,00,000	2,10,000
	Total	6,80,000	3,10,000

On 31st March, 2018 S Ltd. revalued its fixed assets at ₹ 1,50,000 and current assets of ₹ 1,60,000. Trade payables of H Ltd. includes ₹ 20,000 due to S Ltd.

Prepare the consolidated Balance Sheet of H Ltd. and its subsidiary S Ltd. as on 31st March, 2018 with Notes to Accounts and working notes.

ANSWER:



Post Acq. = 0

(1) Fixed Assets of S Ltd.	
CL. Value of F.A.	1,00,000
(+) Increase in Value of F.A. (1,50,000 – 1,00,000)	50,000
	1,50,000

No Effect of dep. as revaluation is done on Balance Sheet date.

(2) R & S of S Ltd.		
	Pre	Post
Closing Balance	50,000	-
(+) Profit on Revaluation of F. A.	50,000	
(-) Loss on Revaluation of C.A. (2,10,000 – 1,60,000)	(50,000)	-
	50,000	-
H 60%	30,000	
MI 40%	20,000	

(3) COC		₹
Cost of Investment		1,80,000
(-) Share in NA		
SC	1,20,000	
(+) Pre – Acq. Profit	30,000	(1,50,000)
Goodwill		30,000

(4) M. I.	₹
SC	80,000
Pre-Acq. Profit	20,000
	1,00,000

Consolidated Balance Sheet
As at 31.3.2018

I. Equities & Liabilities	₹

Shareholder's Fund	
SC	5,00,000
R & S	1,00,000
MI	1,00,000
$\frac{CL}{T/P}$ (80,000 + 60,000 – 20,000)	1,20,000
TOTAL	8,20,000
II. Assets	
PPE (3,00,000 +1,50,000)	4,50,000
I. A.	30,000
CA (2,00,000 + 1,60,000 – 20,000)	3,40,000
TOTAL	8,20,000

CONSOLIDATION FULL QUESTION (REVALUATION OF ASSETS)

26. QUESTION

(a) From the following Balance Sheets of Hani Ltd. and its subsidiary Sani Ltd., drawn up at 31st March, 2019, prepare a Consolidated Balance Sheet as at that date, having regard to the following:

(i) General Reserves and Profit (Surplus) of Sani Ltd. stood at ₹50,000 and ₹30,000 respectively on the date of acquisition and 80% of its shares were held by Hani Ltd. on 1st April, 2018.

(ii) Machinery (Book-value ₹2,00,000 and furniture (Book value ₹ 40,000) were revalued at ₹1,50,000 and ₹30,000 respectively as on 1st April, 2018 for the purpose of fixing the price of its shares.

(iii) Depreciation is charged @ 10% on machinery and @ 15% on furniture.

Balance Sheet of Hani Ltd. & Sani Ltd. as on 31st March, 2019.

Particulars	Hani Ltd. ₹	Sani Ltd. ₹
(1) Shareholders' Funds		
(a) Share Capital		
Equity shares of ₹10 each	6,00,000	1,00,000
(b) Reserves and Surplus		
General Reserve	2,00,000	1,50,000
Statement of Profit & Loss	1,00,000	50,000
(2) Current Liabilities		
Trade payable	1,10,000	57,000
Total	**10,10,000**	**3,57,000**
II. ASSETS		
(1) Non-Currents Assets		
(a) Tangible Fixed Assets		
Machinery	3,00,000	1,80,000
Furniture	1,50,000	34,000
(b) Non-current Investments Investment		
in Shares of Sani Ltd.	1,20,000	-
(2) Currents Assets	**4,40,000**	**1,43,000**
Total	**10,10,000**	**3,57,000**

ANSWER:

Consolidated Balance Sheet of Hani Ltd. and its Subsidiary Sani Ltd. As on 31st March, 2019

Particulars	*Notes to Accounts*	*Amount Rs.*
I EQUITY AND LIABILITIES		
(1) Shareholder's Funds:		

(a) Share Capital 60000 Equity shares of Rs. 10 each		600000
(b) Reserves and Surplus		
(i) General Reserve	1	401200
(2) Minority Interest (W. No. 5)		49300
(3) Current Liabilities :		
Trade Payables	2	167000
Total		1217500
II ASSETS		
(1) Non – Current Assets :		
(a) Fixed Assets		
(i) Tangible Assets	3	610500
(ii) Intangible Assets	4	24000
(2) Current Assets	5	583000
Total		1217500

Notes to Accounts		
I. Reserves and Surplus	₹	₹
Reserves (W. No 3)	2,00,000	
Add : 4/5 share of Sani Ltd. post acquisition reserves (W. No. 3)	80,000	2,80,000
Profit & loss A/c	1,00,000	
Add : 4/5 share of Sani Ltd. post acquisition reserves (W. No. 4)	21,200	1,21,200
Total		4,01,200
2. Trade payable		
Hani Ltd.	1,10,000	
Sani Ltd.	57,000	1,67000
3. Tangible Assets		
(a) Machinery		
Hani Ltd.	3,00,000	
Sani Ltd. (180000 x 100 / 90)	2,00,000	
	5,00,000	
Less : Decrease in Value (Sani Ltd.)	(50,000)	
Less : Depreciation (Sani Ltd. 150000 x 10/100)	(15000)	4,35,000
(b) Furniture		
Hani Ltd.	1,50,000	
Sani Ltd. (34000 x 100 / 85)	40,000	
	1,90,000	
Less : Decrease in Value (Sani Ltd.)	(10000)	
Less : Depreciation (Sani ltd. 30000 x 15 / 100)	(4500)	1,75,500
Total		6,10,500
4. Intangible Assets		
Goodwill (W. No. 6)		24000
5. Current Assets		
Hani	4,40,000	
Sani	1,43,000	5,83000

Working Notes:

1. Pre-acquisition profits and reserves of Sani Ltd.	
Reserves	₹ 50,000
Profit	₹ 30,000
	₹ 80,000

Hani Ltd. Share (4/5*80000) Minority Interest (1/5 * 80000)	₹64000 ₹16000
2. Loss on revaluation of assets of Sani Ltd. Machinery (₹200000 - ₹150000) Furniture (₹40000 - ₹30000) Hani Ltd.' Share (60000 * 4/5) Minority Interest (60000 * 1/5)	 = ₹50,000 = ₹10,000 = ₹60,000 = ₹48,000 = ₹12000
3. Post-acquisition reserves of Sani Ltd. (₹150000 - ₹50000) Hani Ltd. Share (100000 * 4/5) Minority Interest (100000 * 1/5)	= ₹100,000 = ₹80000 = ₹20,000
4. Post-acquisition profits of Sani Ltd. (₹50000 - ₹30000) *Add* : Excess depreciation charged on Machinery @ 10% on ₹50000 (₹ 200000-?150000) Furniture @15% on ₹10,000 (₹ 40000 - ₹30000) Hani Ltd. Share (26500 * 4/5) Minority Interest (26500* 1/5)	 = ₹20,000 = ₹5000 =₹1500 ₹26,500 = ₹21200 = ₹5,300
5. Minority Interest Paid up value of Equity Share held *Add* : 1/5 Share of Pre-acquisition profit & reserves *Add* : 1/5 Share of Post-acquisition reserves *Add* : 1/5 Share of Post-acquisition profit *Less* : 1/5 Share of loss on revaluation of Assets Minority Interest	 20000 16000 20000 5300 (12000) 49300
6. Cost of Control or Goodwill Paid up value of Equity Share held by Hani Ltd. *Add* : 4/5 Share of Pre-acquisition profit & reserves of Sani Ltd. *Less* : 4/5 Share of loss on revaluation of Assets of Sani Ltd. Intrinsic Value of Share on the date of acquisition *Less*: Investment in share of Sani Ltd. by Hani Ltd. Goodwill	 80000 64000 (48000) 96000 (120000) 24000

SHARE CAPITAL

CALLS IN ARREARS & CALLS IN ADVANCE: (MEDIUM)

27. QUESTION

A limited Company, with an authorized capital of ₹2,00,000 divided into shares of ₹ 100 each, issued for subscription 1,500 shares payable at ₹25 per share on application, ₹40 per share on allotment, ₹25 per share on first call three months after allotment and the balance as and when required.

The subscription list closed on January 31, 2015 when application money on 1,500 shares was duly received and allotment was made on March 1, 2015.

The allotment amount was received in full but, when the first call was made, one shareholder failed to pay the amount on 100 shares held by him and another shareholder with 50 shares paid the entire amount on his shares.

Give journal entries in the books of the Company to record these share capital transactions assuming that all amounts due were received within one month of the date they were called.

ANSWER:

In the Books of A Limited Company
Journal Entries

Date	Particulars	L\F	Dr. Amount (₹)	Cr. Amount (₹)
31st Jan. 2015	Bank A/c (1500 × 25) Dr. To Share Application Money A/c (Being application money received)		37,500	37,500
1st March 2015	Share Application Money A/c Dr. To ESC A/c (1500 × 25) (Being shared allotted)		37,500	37,500
1st March 2015	Share Allotment Money A/c Dr. To ESC A/c (1,500 × 40) (Being allotment money due)		60,000	60,000
1st April 2015	Bank A/c Dr. To Share Allotment Money A/c		60,000	60,000
1st June 2015	Share 1st Call Money A/c Dr. To ESC A/c (1,500 × 25) (Being 1st Call Due)		37,500	37,500
30th June 2015	Bank (WN 3) A/c Dr. Calls-in-Arrears A/c (WN 1) Dr. To Share 1st Call Money A/c To Calls in Advance A/c (WN 2) (Being 1st Call Money received)		35,500 2,500	 37,500 500

Working Notes:-
(1) Call in Arrears = 100 shares × 25 = 2500/-
(2) Call in Advance = 50 shares × 10 = 500/-
(3) Amount Received on 1st Call:-
Due:- 37,500
(-) Arrears (2500)
(+) Advance 500
= 35,500

INTEREST ON CALLS IN ADVANCE: (MEDIUM)

28. QUESTION

X Ltd. invited applications for 10,000 shares of ₹100 each payable as follows:

On Application	₹ 25
On Allotment (on 1st May, 2014)	₹ 25
On First Call (on 1st Oct., 2014)	₹ 25
On Final Call (on 1st Feb., 2015)	₹ 25

All the shares were applied for and allotted. A shareholder holding 200 shares paid the whole of the amount due along with allotment. Journalize the transactions, assuming all sums due were received. Interest was paid to the shareholder concerned on 1st February, 2015.

ANSWER:

In the Books of X Ltd
Journal Entries

Date	Particulars	L/F	Dr. Amount (₹)	Cr. Amount (₹)
	Bank A/c (10000 x 25) Dr. To Share Application Money A/c (Being application money received)		2,50,000	2,50,000
	Share Application Money A/c Dr. To ESC A/c (Being share allotted)		2,50,000	2,50,000
1st May 2014	Share Allotment Money A/c Dr. To ESC A/c (10000 x 25) (Being allotment money due)		2,50,000	2,50,000
1st May 2014	Bank A/c {2,50,000 + {(25+25) × 200]} Dr. To Shares Allotment Money A/c To Calls in Advance A/c [(25+25)× 200] [Being Allotment money received & Excess amount transferred to Calls-in-Advance)		2,60,000	2,50,000 10,000
1st Oct. 2014	Share First Call Money A/c Dr. To ESC A/c (10000 x 25) (Being First Call Due)		2,50,000	2,50,000
1st Oct. 2014	Bank A/c (9800 × 25) Dr. Calls in Advance A/c (200 × 25) Dr. To Share First Call Money A/c (Being First Call Received)		2,45,000 5,000	2,50,000
	2015			
1st Feb. 2015	Share Final Call A/c Dr. To ESC A/c (10000 x 25) (Final Call Due)		2,50,000	2,50,000
1st Feb. 2015	Bank A/c (9,800 × 25) Dr. Calls-in-Advance A/c (200 × 25) Dr. To Share Final Call A/c (Being Final Call Received)		2,45,000 5,000	2,50,000
1st Feb. 2015	Interest on Call-in-Advance A/c Dr. To Shareholders A/c (Being Interest on Call-in-Advance due)		700	700

1st Feb. 2015	Shareholders A/c To Bank A/c (Being Interest Paid)	Dr.		700	 700

Working Notes:-
Advance Receive
Table F :- 12% p.a.
1st May
1st Call Receive 1st May ⎫ 5 Months
Adj 1st Oct. ⎭ →

1st
May June July August Sep. 1st Oct.

$(200 \times 25) = 5{,}000$

$5{,}000 \times 12\% \times \frac{5}{12} = 250/-$

1st Feb:
Final Receive 1st May ⎫ 9 Months
Adj 1st Feb. ⎭ →

$(200 \times 25) = 5{,}000$

$5{,}000 \times 12\% \times \frac{9}{12} = 450/-$

Total Interest = 250 + 450 = 700

Notes:- In Absence of Information as Rate of Interest, we have taken maximum rate of Interest as specified in Table F of Schedule I of Companies Act; 2013

FORFEITURE & REISSUE (EASY)

29. QUESTION

Zedux Ltd. decided to issue 60,000 shares of ₹10 each at a premium of ₹2 per share. The amount on shares was payable as follows :

On application	₹2.00
On allotment	₹5.00 (Including premium)
First Call	₹2.00
Final Call	₹3.00

Applications were received for 1,00,000 shares. Shares were allotted on a pro rata basis. Walter was allotted 1,000 shares. Walter did not pay the allotment money and subsequent calls. Walter's shares were forfeited.
Pass the necessary journal entries.

SOLUTION

Date	Particulars		Dr. (in ₹)	Cr. (in ₹)
1.	Bank A/c To Share Application A/c **(Being Share application money received on 1,00,000 shares)**	Dr.	2,00,000	2,00,000
2.	Share Application A/c	Dr.	2,00,000	1,20,000

	To Share Capital A/c To Share Allotment A/c **(Being application money for 60,000 shares transferred to Share Capital A/c on allotment and remaining adjusted towards allotment)**			80,000
3.	Share Allotment A/c To Share Capital A/c To Share Premium A/c **(Being allotment money due including premium)**	Dr.	3,00,000	1,80,000 1,20,000
4.	Bank A/c To Share Allotment A/c **(Being allotment money received)**	Dr.	2,16,333	2,16,333
5.	Share First Call A/c To Share Capital A/c **(Being first call amount transfer to share capital a/c)**	Dr.	1,20,000	1,20,000 --
6.	Bank A/c To Share First Call A/c **(Being first call money received)**	Dr.	1,18,000	1,18,000
7	Final Call A/c To Share Capital A/c **(Being final call transfer to share capital a/c)**	Dr.	1,80,000	1,80,000
8	Bank A/c To Final Call A/c **(Being Final Call money received and advance adjusted)**	Dr.	1,77,000	1,77,000
9	Share Capital A/c Share premium A/c To Share Forfeited A/c To Share Allotment A/c To First Call A/c To Final Call A/c **(Being Forfeiture of 1,000 shares For non-payment of allotment and call money)**	Dr. Dr.	10,000 2,000	 3,333* 3,667* 2,000 3,000

(*Since Fractional shares cannot be applied/allotted, the amount in Share Forfeiture A/c and Share Allotment A/c may vary by ± 1)

30. QUESTION (easy)

A holds 200 shares of ₹10 each on which he has paid ₹2 as application money. B holds 400 shares of ₹10 each on which he has paid ₹2 per share as application money and ₹3 per share as allotment money. C holds 300 shares of ₹10 each and has paid ₹2 on application, ₹3 on allotment and ₹3 for the first call. They all fail to pay their arrears on the second and final call of ₹2 per share and the directors, therefore, forfeited their shares. The shares are re-issued subsequently for ₹12 per share fully paid-up. Journalize the transactions relating to the forfeiture and re-issue.

ANSWER:

FOR UNDERSTANDING PURPOSE:

	App	Allotment	First	Final
A	✓	✗	✗	✗

B	✓	✓	✗	✗
C	✓	✓	✓	✗

FOR UNDERSTANDING PURPOSE:

A = 200 Shares 2 App. 8 ✗ Bank (200 × 2) 400 Call in Arrears 1600 (8 × 200) To ESC 2000 (200 × 10)	B = 400 Shares 5 ✓ 5 ✗ Bank (5 400) 2,000 Call-in-Arrears 2000 (5 × 400) To ESC 4000 (10 × 400)	C = 300 Shares 8 ✓ 2 ✗ Bank (300 × 8) 2400 Call-in-Arrears 600 (300 × 2) To ESC 3000 (300 × 10)

MAIN ANSWER:

In the books of Company
Journal Entries

Date	Particulars	L/F	Dr. Amount (₹)	Cr. Amount (₹)
-	ESC (200 × 10) Dr. To Call-in-Arrear (8 × 200) To Forfeited Shares (200 × 2) (Being 200 shares of Mr. A forfeited)		2,000	 1,600 400
-	ESC (400 × 10) Dr. To Call-in-Arrear (400 × 5) To Forfeited Shares A/c (400 × 5) (Being 400 shares of Mr. B forfeited)		4,000	 2,000 2,000
-	ESC (300 × 10) Dr. To Call-in-arrear (300 × 2) To Forfeited Shares (300 × 8) (Being 300 shares of Mr. C forfeited)		3,000	 600 2,400
-	Bank (900 × 12) Dr. To ESC (900 × 10) To SP (900 × 2) (Being 400 shares re-issued)		10,800	 9,000 1,800

FORFEITURE & PART REISSUE: (EASY)

31. QUESTION

Mr. Long who was the holder of 300 preference shares of ₹100 each, on which ₹75 per share has been called up could not pay his dues on Allotment and first call each at ₹25 per share. The Directors forfeited the above shares and reissued 150 of such shares to Mr. Short at ₹55 per share paid-up as ₹75 per share.

Give Journal Entries to record the above forfeiture and re-issue in the books of the company.

ANSWER:

300 Shares

75 Call -

25 receive ✓

50 ✗ not received

75 Called

150 :-

Receive = 150 × 25 = 3,750
Application money: (150 × 20) = (3000)
Excess = 750

Net effect:

Bank (300 × 25)	7500	
Allotment (300 × 25)	7500	
First Call (300 × 25)	7500	
To ESC (300 × 75)		22,500

Main Answer:

In the Books of Company
Journal Entries

Date	Particulars	L/F	Dr. Amount (₹)	Cr. Amount (₹)
-	PSC A/c (300 × ₹75) Dr.		22,500	
	To Allotment A/c (300 × 25)			7,500
	To First Call A/c (300 × 25)			7,500
	To Forfeited Share A/c (300 × 25)			7,500
	(Being 300 PS Forfeited)			
-	Bank A/c (150 × ₹ 55) Dr.		8,250	
	Forfeited Shares A/c (150 × ₹20) Dr.		3,000	
	To PSC A/c (150 × ₹75)			11,250
	(Being 150 PS re-issued)			
-	Forfeited Shares A/c (3750 – 3000) Dr.		750	
	To C/R A/c (W. N. 1)			750
	(Being profit on 150 PS transferred to C/R)			

Part Re-issued		**Share Forfeited**	
Loss absorbed	3,000	Amount Received	7,500
Transfer to Capital Reserve	750		
Closing Balance (150 × 25)	3,750		
	7,500		**7,500**

FORFEITURE & REISSUE & PRO RATA ALLOTMENT & ISSUE AT PREMIUM

32. QUESTION (TOUGH & LENGTHY)

Technocrats Ltd. invited applications for 1,00,000 equity shares of ₹ 30 each. The shares were issued at a premium of ₹ 15 per share, payable as follows :
On Application and Allotment : ₹24 per share (incl. premium of ₹9)
On first and final call : Balance including remaining premium
Applications for 1,50,000 shares were received. Applicants of 10,000 shares were rejected on allotment, and pro-rata allotment was made to remaining applicants as follows :

Category A — Applicants for 80,000 shares were allotted 60,000 shares

Category B — Applicants for 60,000 shares were allotted 40,000 shares

Mr. X, who belonged to A category, was allotted 300 shares. He failed to pay the call money.
Mr. Y, who belonged to B category and applied for 300 shares, also failed to pay the call money.

These shares were forfeited and reissued as fully paid @ ₹36 per share. Assume that the excess received on application is to be adjusted towards share capital account first. You are required :

(a) Pass the necessary journal entries to record the above transactions. (8 marks)

(b) Assuming opening bank balance of ₹1,25,000, prepare the Bank account of the company in the light of above transactions. (3 marks)

ANSWER:

When excess application money utilized for payment of Share Capital

Date	Particulars	L. F.	Amount Dr. (₹)	Amount Cr. (₹)
	Bank A/c Dr. To Share Application and Allotment A/c (Being amount received on application)		36,00,000	 36,00,000
	Share Application and Allot. A/c Dr. To Share Capital A/c To Securities Premium A/c To Bank A/c (Being application and allotment amount relating to 1,00,000 shares transferred to Share Capital account and Securities Premium account and application money on rejected applications returned back)		26,40,000	 15,00,000 9,00,000 2,40,000
	Equity Share first and Final Call A/c Dr. To Share Capital A/c To Securities Premium A/c (Being call money due on 1,00,000 shares)		21,00,000	 15,00,000 6,00,000
	Bank A/c Dr. Share Application and Allot. A/c Dr. To Equity' Share first and Final Call A/c (Being Call money received and excess application and allotment money adjusted)		11,34,300 9,60,000	 20,94,300
	Equity Share Capital A/c Dr. Securities Premium A/c Dr. To Equity Share first and Final Call A/c To Share Forfeited A/c (Being shares issued to X and Y forfeited for non-payment of call money and Calls in arrears account closed)		15,000 3,000	 5,700 12,300
	Bank A/c Dr. To Equity Share Capital A/c To Securities Premium A/c (Being forfeited shares reissued @ ₹36 each and relevant amounts transferred to Share Capital and Securities Premiums Accounts)		18,000	 15,000 3,000
	Share Forfeited A/c Dr. To Capital Reserve A/c (Being unused Securities Premium Account transferred to Capital Reserve Account)		12,300	 12,300

Working Notes:

(1) Calculation of Calls in Arrears:	
(i) On Mr. X's Shares: Amount due on call= 300 × 21	= ₹6300
Amount Adjusted through Application and Allotment Money (80000 × 300/60000) – 300 or (400 – 300) × ₹24	₹2400
Call in Arrears	₹3900
(ii) On Mr. Y's Shares: Amount due on call= 200 × 21	= ₹4200
Amount Adjusted through Application and Allotment Money (20000 × 300/60000) × ₹24	₹2400
Call in Arrears	₹1800

Total Calls in arrears = 3900 + 1800 = ₹5700	
(2) Amount Received on Call = (100000 × ₹21) – 960000 (Excess of Application Money 40000 × 24) – 5700 (Calls in Arrears) = ₹11,34,300.	

ALTERNATE ANSWER 1 (A)

When excess application money utilized for payment of Share Capital

Date	Particulars	L. F.	Amount Dr. (₹)	Amount Cr. (₹)
	Bank A/c Dr. To Share Application and Allotment A/c (Being amount receive on application)		36,00,000	 36,00,000
	Share Application and Allot. A/c Dr. To Share Capital A/c To Securities Premium A/c To Equity Share First and Final Call A/c To Bank A/c (Being application and allotment amount relating to 1,00,000 shares transferred to Share Capital account and Securities Premium account and application money on rejected applications returned back)		36,00,000	 15,00,000 9,00,000 9,60,000 2,40,000
	Equity Share first and Final Call A/c Dr. To Share Capital A/c To Securities Premium A/c (Being call money due on 1,00,000 shares)		21,00,000	 15,00,000 6,00,000
	Bank A/c Dr. Calls in Arrears A/c Dr. To Equity' Share first and Final Call A/c (Being Call money receive and excess application and allotment money adjusted)		11,34,300 5,700	 11,40,000
	Equity Share Capital A/c Dr. Securities Premium A/c Dr. To Calls in Arrears A/c To Share Forfeited A/c (Being shares issued to X and Y forfeited for non-payment of call money and Calls in arrears account closed)		15,000 3,000	 5,700 12,300
	Bank A/c Dr. To Equity Share Capital A/c To Securities Premium A/c (Being forfeited shares reissued @ ₹36 each and relevant amounts transferred to Share Capital and Securities Premiums Accounts)		18,000	 15,000 3,000
	Share Forfeited A/c Dr. To Capital Reserve A/c (Being unused Securities Premium Account transferred to Capital Reserve Account)		12,300	 12,300

Working Notes:

(1) Calculation of Calls in Arrears:	
(i) On Mr. X's Shares: Amount due on call= 300 × 21	= ₹6300
Amount Adjusted through Application and Allotment Money (80000 × 300/60000) – 300 or (400 – 300) × ₹24	₹2400
Call in Arrears	₹3900
(ii) On Mr. Y's Shares: Amount due on call= 200 × 21	= ₹4200

Amount Adjusted through Application and Allotment Money (20000 × 300/60000) × ₹24	2400
Call in Arrears	₹1800
Total Calls in arrears = 3900 +1800 = ₹5700	
(2) Amount Received on Call = (100000 × ₹21) – 960000 (Excess of Application Money 40000 × 24) – 5700 (Calls in Arrears) = ₹11,34,300.	

Answer (b)

Bank Account of the Company

Date	Particular	J. F.	Amt. Dr. (₹)	Date	Particular	J. F.	Amt. Cr. (₹)
	To Balance b/d		1,25,000		By Share Application and Allotment A/c		2,40,000
	To Share Application and Allotment A/c		36,00,000		By Balance c/d		46,37,300
	To Equity Share first and Final Call A/c		11,34,300				
	To Equity Share Capital A/c		15,000				
	To Securities Premium A/c		3,000				
	Total	**48,77,300**		**Total**			**48,77,300**

33. QUESTION (TOUGH)

Campa Ltd. issued 4,00,000 shares of ₹ 50 each at a premium of ₹ 15 per share. Application for 4,50,000 shares was received. The amount was payable as follows :

- On Application ₹ 15
- On Allotment ₹ 16 (including premium ₹ 6)
- On First Call ₹ 20 (including premium ₹ 5)
- On Final Call ₹ 14 (including premium ₹ 4)

(1) Alpha, who was allotted 6000 shares did not pay allotment and first call and thereafter his shares were forfeited.
(2) Beta, who was allotted 4000 shares did not pay first call and thereafter his shares were forfeited.
(3) Gama, who was allotted 15000 shares did not pay flnal call and thereafter his shares were forfeited.
Half of the shares of Alpha and Beta were reissued at ₹ 42 You are required to pass journal entries for the forfeiture and reissue of shares.

SOLUTION

Campa Ltd.
Journal Entries

Date	Particulars		Amount ₹ (Dr.)	Amount ₹ (Cr.)
	Share Capital A/c (6000 x 40)	Dr.	240,000	
	Securities Premium A/c (6000 ×11)	Dr.	66,000	
	To Shares Forfeiture A/c (6000 × 15)			90,000
	To Share Allotment A/c (6000 × 16)			96,000
	To Share First Call A/c (6000 × 20)			120,000
	(6000 shares of Alpha were forfeited for non-payment of allotment and first call)			
	Share Capital A/c (4000 × 40)	Dr.	160,000	
	Securities Premium A/c (4000 × 5)	Dr.	20,000	

	To Shares Forfeiture A/c (4000 × 25) To Share First Call A/c (4000 × 20) (4000 shares of Beta were forfeited for non-payment of first call)		100,000 80,000
	Share Capital Account (15000 × 50) Dr. Securities Premium Account (15000 × 4) Dr. To Shares Forfeiture A/c (15000 × 40) To Share Final Call A/c (15000 ×14) (15000 shares of Gama were forfeited for non-payment of final call)	750,000 60,000	 600,000 210,000
	Bank A/c (5000 × 42) Dr. Share Forfeiture A/c (5000 × 8) Dr. To Share Capital A/c (5000 × 50) (Reissue of 5000 shares of ₹ 50 each, issued as fully paid up at a discount ₹ 8 per share)	210,000 40,000	 250,000
	Share Forfeiture A/c Dr. To Capital Reserve (Profit on reissue of 5000 forfeited shares transferred to capital reserve)	55,000	 55,000

Working Note: Calculation of the amount transferred to Capital Reserve

50% of Alpha's forfeited share (50% of 90,000) = ₹ 45000
50% of Beta's forfeited share (50% of 1,00,000) = ₹ 50000
₹ 95,000
Less: loss on reissue = ₹ 40,000
Capital Reserve = ₹ 55,000

ISSUE OF SHARES FOR CONSIDERATION OTHER THAN CASH (EASY)

34. QUESTION

X Co. Ltd. was incorporated with an authorized share capital of 1,00,000 equity shares of ₹10 each. The directors decided to allot 10,000 shares credited as fully paid to the promoters for their services.

The company also purchased land and buildings from Y Co. Ltd for ₹4,00,000 payable in fully paid-up shares of the company. The balance of the shares was issued to the public, which were fully subscribed and paid for.

You are required to pass Journal Entries and to prepare the Balance Sheet.

ANSWER:

In the books of X Co. Ltd
Journal Entries

Date	Particulars	L/F	Amount Dr. (₹)	Amount Cr. (₹)
-	Goodwill A/c Dr. To ESC A/c (Being 10,000 shares allotted to promoters)		1,00,000	 1,00,000
-	Land and Buildings A/c Dr. To ESC A/c (Being 40,000 shares allotted to Y Ltd.)		4,00,000	 4,00,000
-	Bank A/c (50,000 × 10) Dr. To ESC A/c (50,000 x 10) (Being balance 50,000 shares issued to public to cash)		5,00,000	 5,00,000

Balance Sheet of X Company Limited

Equities & Liabilities	
Shareholders' Fund	

Share Capital	
Authorised Share Capital 1,00,000 (-) of ₹10 each	10,00,000
Issued, Subscribed, & Called Up Capital for Cash	
50,000 Shares of ₹10 each fully paid up for consideration other than cash	5,00,000
50,000 shares of ₹10 each fully paid	5,00,000
	10,00,000
Assets	
(Non Current Assets) Fixed Assets	
P, P, E	4,00,000
Intangible Asset	1,00,000
Current Assets	
C & CE	5,00,000
	10,00,000

35. <u>QUESTION (EASY)</u>

A new process for development of Active Pharmaceutical ingredients (APIs) is developed by Prof. Shastri. The process is subsequently patented. The APIs are used to manufacture medicines for cure of cardiac diseases. The patent is bought by a pharmaceutical company Ratna & Co. The patent was bought for a consideration of ₹ 45,00,00,000. The deal involves payment of ₹ 15,00,00,000 to Prof. Shastri and allotment of shares of ₹ 10 each at a discount of ₹ 2 per share for balance consideration of ₹30,00,00,000.

Prepare necessary journal entries in the books of Ratna & Co. (JUNE 25)

<u>ANSWER:</u>

In the books of Ratan & Company
Journal Entry

Entry No.	Particulars		Dr. (₹)	Cr. (₹)
1.	Patent A/c To Prof. Shastri A/c (Being patent acquired from Prof. Shastri)	Dr.	45,00,00,000	45,00,00,000
2.	Prof. Shastri A/c Discount on issue of shares **(W.N.)** To Bank A/c To Share Capital A/c	Dr. Dr.	45,00,00,000 7,50,00,000	 15,00,00,000 37,50,00,000

Working Note:

Calculation of discount on issue of shares

Total consideration	₹45,00,00,000/-
Direct payment	₹15,00,00,000/-
Shares issued	₹30,00,00,000/-
Face value of shares issued	₹37,50,00,000/-
$\frac{30,00,00,000 * 10}{8}$	
Discount on issue of shares	₹7,50,00,000/-

REDEMPTION OF PREFERENCE SHARES: (MEDIUM)

36. QUESTION

The Balance Sheet of X Ltd. as on 31st March, 2015 is as follows:

Particulars		₹
	EQUITY AND LIABILITIES	
1.	**Shareholders' funds**	
	a Share capital	2,90,000
	b Reserves and Surplus	48,000
2.	**Current liabilities**	
	Trade Payables	56,500
	Total	**3,94,500**
	ASSETS	
1.	**Fixed Assets**	
	Tangible asset	3,45,000
	Non-current investments	18,500
2.	**Current Assets**	
	Cash and cash equivalents (bank)	31,000
	Total	**3,94,500**

The share capital of the company consists of ₹50 each equity shares of ₹2, 25,000 and ₹100 each Preference shares of ₹65,000 (issued on 1.4.2013). Reserves and Surplus comprises Profit and Loss Account only.

In order to facilitate the redemption of preference shares at a premium of 10%, the Company decided:
(a) To sell all the investments for ₹14,000.
(b) To finance part of redemption from company funds, subject to, leaving a bank balance of 14,000.
(c) To issue minimum equity share of ₹50 each at a premium of ₹10 per share to raise the balance of funds required.

You are required to pass: The necessary Journal Entries to record the above transactions.

ANSWER:

Working Notes:

(1) Fund Required = 65,000 + 10% = 71,500
(-) Investments Sold = (14,000) (Selling Price)
(-) Funds with Company (31,000 – 14,000) = (17,000)
Funds to be raised by issue of ES = 40,500

$$No.\,of\ ES\ to\ be\ issued = \frac{Balance\ Fund\ Req.}{Issue\ Price}$$

$$= \frac{40{,}500}{60}$$

= 675 ES

Break Up: FV = 33,750 SP = 6,750 Issue Price = 40,500

(2) CRR Requirement = Total Capital Req. = 65,000
(-) ESC = (33,750)
CRR = 31,250

In the Books of X Ltd.
Journal Entries

Date	Particulars	Dr. (₹)	Cr. (₹)

(1)	Bank A/c Dr. P & L A/c Dr. To Investments A/c (Being all Investment Sold)	14,000 4,500	 18,500
(2)	Share Application A/c (675 × 60) Dr. To ESC A/c (675 × 50) To SP A/c (675 × 10) (Being 675 ES issued of 50 at 60)	40,500	 33,750 6,750
(3)	P & L A/c Dr. To CRR A/c (Being profit transferred to CRR)	31,250	 31,250
(4)	PSC A/c Dr. SP A/c Dr. To Preference Shareholders A/c (Being pref. shares cancelled)	65,000 6,500	 71,500
(5)	Pref. Shareholders A/c Dr. To Bank A/c (Being Amount paid to Pref. Shareholders)	71,500	 71,500

37. QUESTION: REDEMPTION OF PREF SHARES

On 1st April, 2022, the following balances were extracted from the ledger of X Limited :

	(₹)
(i) 10% redeemable preference share capital amount 5,000 shares of ₹100 each, fully called up	5,00,000
(ii) Securities premium account	14,000
(iii) General Reserve	1,60,000
(iv) Profit and loss account	1,18,540

The company redeemed all the preference shares at a premium of 5% and for the purpose, it issued equity shares of ₹10 each at a premium of ₹1 for such an amount as was necessary for the purpose after utilizing the available profits to the maximum possible extent.

You are required to pass the necessary journal entries for above mentioned transactions.

ANSWER:

Date	Particular	L. F.	Amount Dr. (₹)	Amount Cr. (₹)
	Bank A/c Dr. To Equity share capital A/c To Securities premium A/c (Allotment of 22,146 equity shares of ₹10 each at a premium of ₹1 Per share)		2,43,606	 2,21,460 22,146
	Securities premium A/c/P & L Dr. To Premium on redemption of Preference shares (Utilization of securities premium account for meeting the premium payable on redemption of preference shares)		25,000	 25,000
	General reserve A/c Dr. Profit and loss A/c Dr. To Capital redemption reserve account (Creation of capital redemption reserve account out of divisible profits for redemption of preference shares.		1,60,000 1,18,540	 2,78,540
	10% redeemable pref. share capital A/c Dr. Premium on redemption of pref. shares A/c Dr. To Preference shareholders A/c (Amount payable to preference shareholders on redemption of preference shares at a premium of 5%)		 5,00,000 25,000	 5,25,000

	Preference shareholder's A/c Dr. To Bank A/c (Payment made to preference shareholders to redeem all the preference shares at a premium of 5%)		5,25,000	5,25,000

Working Note:
Divisible profits available = ₹1,60,000 + 1,18,540 = ₹2,78,540

Face value of the Preference share to be redeemed = ₹5,00,000

Minimum amount of new issue = ₹5,00,000 – ₹2,78,540 = ₹2,21,460

Securities premium to be received = 10% of ₹2,21,460 = ₹22,146.

Total securities premium ₹14,000 + ₹22,146 = 36,146

Premium payable on redemption of preference shares ₹5/100 × 5,00,000 = ₹25,000

As the total share premium after new issue would be sufficient to take care of the premium Payable on redemption of preference shares, the company can proceed to redeem the preference shares by issuing 22,146 new equity shares of rupees 10 each.

38. QUESTION

Rainbow Ltd. has issued 10,000, 12% redeemable preference shares (Face value ₹1,000 each). The shares are to be redeemed at a premium of 20%. The redemption proceeds will be raised through issue of equity share capital. Number of equity shares to be issued are 50,000 shares of 10 each at ₹240 a share.
The whole amount is received and paid out towards redemption of preference share capital.
Pass the necessary journal entries.

SOLUTION

Particulars		**Dr. (in ₹)**	**Cr. (in ₹)**
Bank A/c To Equity Share Application and Allotment A/c **(Being application of 50,000 equity shares at ₹240 a share including premium of ₹230 per share)**	Dr.	1,20,00,000	 1,20,00,000
Equity Share Application and Allotment A/c To Equity Share Application A/c To Securities Premium Reserves A/c **(Being allotment of 50,000 equity shares of ₹10 each issued at a premium of ₹230 per share)**	Dr.	1,20,00,000	 5,00,000 1,15,00,000
12% redeemable preference share capital A/c Premium on redemption of preference share capital A/c To 12% Preference Shareholders A/c **(Being amount due on redemption of preference shares)**	Dr. Dr.	1,00,00,000 20,00,000	 1,20,00,000
Securities Premium Reserves A/c To Premium on redemption of preference share capital A/c **(Being application of securities premium account to write off premium on redemption of preference shares)**	Dr.	20,00,000	 20,00,000
12% Preference Shareholders A/c To Bank A/c	Dr.	1,20,00,000	 1,20,00,000

(Being amount paid to 12% preference shareholders)			

BUY BACK OF SECURITIES: (EASY)

39. QUESTION

Following is the Balance Sheet of M/s Competent Limited as on 31st March, 2015:

Liabilities	₹	Assets	₹
Equity Shares of ₹10 Each fully paid	12,50,000	Fixed Assets	46,50,00
Revenue reserve	15,00,000	Current Assets	30,00,000
Securities Premium	2,50,000		
Profit & Loss Account	1,25,000		
Secured Loans:			
12% Debentures	18,75,000		
Unsecured Loans	10,00,000		
Current maturities of long term borrowings	16,50,000		
	76,50,000		76,50,000

The company wants to buy back 25,000 equity shares of ₹10 each, on 1st April, 2015 at ₹20 per share. Buy back of shares is duly authorized by its articles and necessary resolution passed by the company towards this. The payment for buy back of shares will be made by the company out of sufficient bank balance available as part of Current Assets.

Comment with your calculations, whether buy back of shares by company is within the provisions of the companies Act, 2013. If yes, pass necessary journal entries towards buy back of shares.

ANSWER:

JOURNAL ENTRIES FOR BUY-BACK OF SHARES

	Debit (₹)	Credit (₹)
(i) SP A/c Dr. To CRR A/c (Being Securities premium transferred to CRR equal to nominal value redeemed)	2,50,000	 2,50,000
(ii) Equity Share Capital A/c (25,000 × 10) Dr. Securities Premium A/c (25,000 × 10) Dr. To Equity Shareholders A/c (Being Equity shares cancelled on account of buy back)	2,50,000 2,50,000	 5,00,000
(iii) Equity Shareholders A/c Dr. To Bank A/c (Being amount paid to equity shareholders for buy back)	2,50,000	 2,50,000

40. QUESTION

Super Star Ltd.

Balance Sheet as at March 31, 2024

Particulars	Amount (₹)	Amount (₹)
1. Equities and Liabilities		
1. Shareholder's funds		
Share Capital Divided in five lakh shares of 10/- each	50,00,000	
Reserves & Surplus	35,25,000	85,25,000
2. Long Term Borrowings		20,00,000
3. Current Liability: Trade Payables		3,00,000
		1,08,25,000

II. Assets		
1. Fixed Assets		66,50,000
2. Non-Current Investment		7,50,000
3. Current Assets		
Trade Receivables	5,00,000	
Inventories	5,00,000	
Cash and Cash Equivalents	24,25,000	34,25,000
		1,08,25,000
Reserves and Surplus include securities premium of ?10,00,000/-		

On April 1, 2024 – shareholders of the company authorized buyback as under :
(i) 10% of equity shares would be bought back at ₹ 17/- per share.
(ii) 12% debentures to be issued for ₹ 1,00,000/- to finance the buyback and balance from general reserve to be utilized for this purpose.
(iii) Premium on buyback to be met from securities premium account.
(iv) lnvestments would be sold for ₹ 11,75,000/-.
Pass necessary journal entries to record above transactions.

SOLUTION

Super Star Ltd.
Journal Entries

Particulars		Amount ₹	Amount ₹
Share Capital A/c	Dr.	5,00,000	
Share premium A/c	Dr.	3,50,000	
To Shareholders A/c			8,50,000
(Being 50,000 equity shares bought back @ Rs. 17 per share and premium on buyback adjusted against existing securities premium account)			
Bank A/c	Dr.	1,00,000	
To 12% Debentures A/c			1,00,000
(Being issue of debentures for partial financing of buyback)			
Bank A/c	Dr.	11,75,000	
To Investments A/c			7,50,000
To Profit & Loss A/c			4,25,000
(Being sale of investments and profit transferred to Profit & Loss A/c)			
General Reserve A/s	Dr.	4,00,000	4,00,000
To Capital Redemption Reserve A/c			
(Being transfer of general reserve utilized to the extent of nominal values of shares bought back)			
Shareholders A/c	Dr.	8,50,000	8,50,000
To Bank A/c			

BONUS ISSUE (MEDIUM)

41. QUESTION

The following balances were stood in the Balance Sheet of Gauru Ltd. as on 31st March, 2018:
(i) Share capital—Issued and subscribed :
2,00,000, 9% Preference shares of ₹ 100 each fully paid : ₹ 200 lakh
50,00,000 Equity shares of ₹ 10 each fully paid : ₹ 500 lakh

(ii) Reserves and surplus :
Capital Reserve ₹ 40,00,000 (created due to revaluation of fixed assets)
Securities Premium ₹ 60,00,000
General Reserve ₹ 35,00,000
Surplus (Statement of Profit & Loss) ₹ 80,00,000

On 1st April, 2018 the company decided to capitalise its reserves by way of issue of bonus shares at the rate of one equity share for every four equity shares held. Show necessary journal entries in the books of the company.

ANSWER:
Working Notes:

(1) $\frac{50,00,000}{4} \times 1 = 12,50,000\ Bonus\ Shares\ of\ 10\ each$

Journal Entries
In the books of Gauru Ltd. **(₹in Lakhs)**

Particulars		Debit Credit (₹)	Credit (₹)
(1) Bonus to Shareholders A/c	Dr.	125	
To Equity Share Capital A/c			125
(Being Bonus Shares issued one for every 4 held)			
(2) SP A/c	Dr.	60	
GR A/c	Dr.	35	
P & L A/c	Dr.	30	
To Bonus to Shareholders A/c			125
(Being Reserves Capitalized into Bonus Shares)			

42. BONUS ISSUE + REDEMPTION OF DEBENTURES

The Summary Balance Sheet of ABC Ltd. as on 31st March, 2023 read as under :

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital:		Freehold property	1,15,000
Authorized share Capital:		Stock	1,35,000
40,000 Equity Shares of ₹10 each	4,00,000	Trade receivables	75,000
Issued and Subscribed:		Cash	30,000
20,000 Equity Shares of ₹10 each fully paid:	2,00,000	Balance at Bank	2,00,000
Securities Premium	30,000		
Statement of Profit and Loss	90,000		
12% Debentures	1,20,000		
Trade payables	1,15,000		
	5,55,000		5,55,000

The Annual General Meeting of ABC Ltd., it was resolved that :
(i) To issue one bonus share for every four shares held.
(ii) To repay the debentures at a premium of 3%.
Record the above transactions in the books of ABC Ltd. to meet the above resolutions.

ANSWER:

Journal of ABC Ltd. as on 31st March, 2023

Particular		L. F.	Amount Dr. (₹)	Amount Cr. (₹)
Securities Premium A/c	Dr.		30,000	
P & L A/c	Dr.		20,000	
To Bonus to Shareholders A/c				50,000
(Amount transferred for issue of bonus shares to existing shareholders in the ratio of 1:4)				

Bonus to Shareholders A/c Dr. To Equity Share Capital A/c (Issue of bonus shares in the ratio of 1:4)			50,000	 50,000
12% Debentures A/c Dr. Premium Payable on Redemption of deb. A/c @ 3% Dr. To Debenture holders A/c (Amount payable to debentures holders)			1,20,000 3,600	 1,23,600
P & L A/c Dr. To Premium Payable on Redemption of deb. A/c (Premium payable on redemption charged to surplus A/c)			3,600	 3,600
Debenture holders A/c Dr. To Bank A/c Amount paid to debenture holders on redemption)			1,23,600	 1,23,600

EMPLOYEE STOCK OPTION SCHEME (TOUGH)

43. QUESTION

Oreon Ltd. grants 10,000 employee stock options on 1.4.2021 at ₹ 400. The market price of the share is ₹ 1,600. The vesting period is 2.5 years and the maximum exercise period is one year.

- 3,000 unvested options lapses on 1.5.2023.
- 6,000 options are exercised on 30.6.2024.
- 1,000 vested options lapses at end of exercise period.

Pass journal entries and show necessary working notes. (June 2025)

ANSWER:

In books of Oreon Ltd. Journal Entries

Date	Particulars		Dr. (₹)	Cr. (₹)
31.3.2022	Employee Compensation Expense A/c To Employee stock option outstanding A/c (Being compensation expense in relation to ESOP i.e. 10,000 options granted to employees at a discount of 1,200/- each, amortized on straight line basis over 2.5 years)	Dr.	48,00,000	 48,00,000
	P&L A/c To Employee Compensation Expense A/c (Being expenses transferred to Profit & Loss A/c at year end)	Dr.	48,00,000	 48,00,000
31.3.2023	Employee Compensation Expense A/c To Employee stock option outstanding A/c (Being compensation expense in relation to ESOP i.e. 10,000 options granted to employees at a discount of 1,200/- each, amortized on straight line basis over 2.5 years)	Dr.	48,00,000	 48,00,000
	P & L A/c To Employee Compensation Expense A/c (Being expenses transferred to Profit & Loss A/c at year end)	Dr.	48,00,000	 48,00,000
31.3.2024	Employee Stock Option Outstanding A/c (W.N.)	Dr.	12,00,000	

	To General Reserve A/c (Being excess of employee compensation expenses transferred to general reserve account)			12,00,000
30.6.2024	Bank A/c Employee Stock Option Outstanding A/c To Equity Share Capital A/c To Share premium A/c (Being 6,000 employee stock options exercised at an exercise price of ₹ 400/- each, assumed share face value of ₹ 10 each)	Dr. Dr.	24,00,000 72,00,000	 60,000 95,40,000
01.10.2024	Employee Stock option outstanding A/c To General Reserve A/c (Being Employee stock option outstanding account transferred to General Reserve Account in the lapse of 1,000 options at the end of exercise of option period)	Dr.	12,00,000	 12,00,000

Working Notes:

(₹)

ESOP price	400
Share price	(1,600)
Difference	1,200
Granting of ESOP	10,000
Amount to be amortized (1,200 * 10,000)	1,20,00,000
Amount to be amortized over 2.5 years (1,20,00,000/2.5)	**48,00,000**

Unvested Options	(₹)
Options vested	7,000
Discount	1,200
	84,00,000
Expenses recognized	96,00,000
Excess expense transferred to general reserve	12,00,000

	(₹)
Number of options vested	6,000
Discount	1,200
Options Vested *Discount	72,00,000
Expenses recognized	84,00,000
Excess	12,00,000

UNDERWRITING OF SECURITIES (TOUGH)

44. QUESTION

'X' Ltd., issued 1,00,000 equity shares of ₹10 each at par. The entire issue was underwritten as follows:

A – 60,000 shares (Firm underwriting 8,000 shares)
B – 30,000 shares (Firm underwriting 10,000 shares)
C – 10,000 shares (Firm underwriting 2,000 shares)

The total applications including firm underwriting were for 80,000 shares. The marked applications were as follows:

A- 20,000 shares; B- 14,000 shares; C- 6,000 shares.

The underwriting contract provides that credit for unmarked applications be given to the underwriters in proportion to the shares underwritten. Determine the liability of each underwriter.

ANSWER:
(1) Total Applications = Marked + Unmarked + Firm
Unmarked = Total – Marked – Firm
= 80,000 – (20,0000 + 14,000 + 6,000) – (8,000 + 10,000 + 2,000)
= 20,000/-

(2) Statement showing liability of each underwriter:

Particulars	A	B	C
a) Gross Liability	60,000	30,000	10,000
b) Marked Applications	(20,000)	(14,000)	(6,000)
c) Firm Underwriting	(8,000)	(10,000)	(2,000)
d) Unmarked Application (6:3:1)	(12,000)	(6,000)	(2,000)
e) Net Liability (a-b-c-d)	20,000	0	0
f) Firm Underwriter (Actual)	8,000	10,000	2,000
g) Total Liability (e + f)	28,000	10,000	2,000

Assumption: Firm Underwriting is treated as marked Applications and hence, distributed in Actual Ratio. Alternatively, students can assume Firm Underwriting as Unmarked Application and distribute it in Gross Liability Ratio.

UNDERWRITING OF SECURITIES: (MEDIUM)

45. QUESTION

Dolly Ltd. issued 25,00,000 equity shares of ₹10 each at par. 10,00,000 shares were issued to the promoters and the balance offered to the public was underwritten by three underwriters P, Q & R in the ratio of 2 : 4 : 4 with firm underwriting of 50,000, 60,000 and 70,000 shares each respectively. Total subscription received 12,88,000 shares including marked application and excluding firm underwriting. Marked applications were as follows:
P 3,00,000
Q 3,50,000
R 4,50,000
Unmarked and surplus applications to be distributed in gross liability ratio. Ascertain the liability of each underwriter.

ANSWER:
Working Note:
Total Applications = Marked + Unmarked
$\therefore Unmarked = Total\ Applications - Marked$
= 12,88,000 – (3,00,000 + 3,50,000 + 4,50,000)
= 1,88,000
Total Shares Underwriter = 25,00,000 – 10,00,000 = 15,00,000

Statement Showing Liability of Each Underwriters:-

Particulars	P	Q	R
a) Gross Liability (2:4:4)	3,00,000	6,00,000	6,00,000
b) Marked Applications	(3,00,000)	(3,50,000)	(4,50,000)
c) Firm Underwriting	(50,000)	(60,000)	(70,000)
d) Unmarked Applications (2:4:4)	(37,600)	(75,200)	(75,200)
e) Net liability	(87,600)	1,14,800	4,800
f) Re-distribution of P's Surplus	87,600	(43,800)	(43,800)
g) Net liability	-	71,000	(39,000)
h) Re-distribution of R's Surplus to Q.	-	(39,000)	39,000
i) Net liability	-	32,000	-

j) Firm Underwriting (Actual)	50,000	60,000	70,000
k) Total Liability (i + j)	50,000	92,000	70,000

Assumption: Firm Underwriting is treated as marked Applications and hence, distributed in Actual Ratio. Alternatively, students can assume Firm Underwriting as Unmarked Application and distribute it in Gross Liability Ratio.

46. QUESTION (EASY)

XYZ Ltd. incorporated on 1st April, 2023 issued a prospectus inviting applications for 5,00,000 equity shares of ₹ 10 each. The whole issue was fully underwritten by K, B, D, and M as follows :
K-2,00,000 Shares,
B-1,50,000 Shares,
D-1,00,000 Shares,
M-50,000 Shares

The applications were received for 4,50,000 shares of which marked applications were as follows :
K-2,20,000 Shares,
B-90,000 Shares,
D-1,10,000 Shares,
M-10,000.
Calculate the liability of individual underwriters (5 marks)

ANSWER:

Statement showing underwriters liability

Particulars	K	B	D	M
Gross Liability:	200000	150000	100000	50000
Less: Unmarked application allocated in the ratio of 4:3:2:1 (450000 – 430000	(8000)	(6000)	(4000)	(2000)
	192000	144000	96000	48000
Less: Marked application	220000	90000	110000	10000
	- 28000	54000	- 14000	38000
Less: On surplus of K & D allocated to B & M in the ratio of 3:1	+ 28000	- 31500	+ 14000	- 10500
Net Liability	**NIL**	**22500**	**NIL**	**27500**

47. QUESTION (EASY)

New Ltd. issued 1,00,000 shares which were underwritten as under :

	Number of shares underwritten	**Applications for firm underwriting**	**Marked applications**
Underwriter A	60,000	8,000	10,000
Underwriter B	25,000	3,000	20,000
Underwriter C	15,000	10,000	5,000

Total subscriptions excluding firm underwriting (including market applications) were 50,000 shares. Prepare a statement calculating net underwriter liability. Consider firm underwriting shares are treated as unmarked applications.

SOLUTION

Calculation of unmarked applications

	Shares
Total Subscriptions	50,000
Less: Marked Applications	35,000
	15,000

Firm Underwriting	21,000
	36,000

Statement of Underwriters Liability

Particulars	**A**	**B**	**C**	**Total**
Gross Liability	60,000	25,000	15,000	1,00,000
Less: Marked Applications	10,000	20,000	5,000	35,000
Balance	50,000	5,000	10,000	65,000
Less: Unmarked applications (Distributed in ratio of gross liability)	21,600	9,000	5,400	36,000
Balance	28,400	-4,000	4,600	29,000
Credit of B's Subscription in 60:15 ratio	-3200	4000	-800	-
Net Liability	**25,200**	**-**	**3,800**	**29,000**
Add: Firm Underwriting	8,000	3,000	10,000	21,000
Total Liability	**33,200**	**3,000**	**13,800**	**50,000**

48. QUESTION (EASY)

Shree Ltd. issued 5,00,000 equity shares. Applications for 4,50,000 shares were received. The following are details related to underwriters :

	Underwriter A	Underwriter B	Underwriter C
Underwriting ratio	40%	30%	30%
Marked Applications	1,00,000	50,000	45,000

The remaining applications did not have any stamp. Determine the liability of the underwriters.

SOLUTION

Net Liability of Underwriters

	Underwriter A	**Underwriter B**	**Underwriter C**	**Total**
Gross Liability (4:3:3)	2,00,000	1,50,000	1,50,000	5,00,000
Less: Marked Applications	1,00,000	50,000	45,000	1,95,000
Balance	1,00,000	1,00,000	1,05,000	3,05,000
Less: Unmarked Applications distributed in gross liability ratio (4:3:3)	1,02,000	76,500	76,500	2,55,000
Balance	-2,000	23500	28500	50000
A's Over subscription	2,000	-1,000	-1,000	-
Net Liability	0	22,500	27,500	50,000

Working:

Total applications - Marked Applications = Unmarked applications
4,50,000 - 1,95,000 = 2,55,000

49. QUESTION (EASY)

Sangam Ltd. came up with public issue of 3,00,000 Equity Shares of ₹ 10 each at ₹ 15 per share. P, Q and R took underwriting of the issue in the ratio of 3 : 2 : 1 with the provisions of firm underwriting of 20,000, 14,000 and 10,000 shares respectively.

Applications were received for 2,40,000 shares excluding firm underwriting.
The number of applications from public were received as under :
P – 60,000
Q – 50,000
R – 60,000

Compute the liability of each underwriter as regards the number of shares to be taken up assuming that the benefit of firm underwriting is not given to individual underwriters. (JUNE 25)

ANSWER:

Calculation of Liability of each Underwriter (in shares)

(Assuming the benefit of firm underwriting is not given to individual underwriters)

Particulars	P	Q	R	Total
Gross Liability	1,50,000	1,00,000	50,000	3,00,000
Less: Marked Applications excluding firm underwriting	(60,000)	(50,000)	(60,000)	(1,70,000)
Balance	**90,000**	**50,000**	**(10,000)**	1,30,000
Less: Surplus of R allocated to P and Q in the ratio of 3:2	(6,000)	(4,000)	10,000	
Balance	84,000	46,000	-	1,30,000
Less: Unmarked applications including firm underwriting [Working Note].	(57,000)	(38,000)	(19,000)	(1,14,000)
Net Liability	**27,000**	**8,000**	**(19,000)**	16,000
Less: Surplus of R allocated to P and Q in the ratio of 3:2	(11,400)	(7,600)	19,000	-
Balance	**15,600**	**400**	-	16,000
Add: Firm Undertaking	20,000	14,000	10,000	44,000
Total Liability	**35,600**	**14,400**	**10,000**	**60,000**

Working Note:

Applications received from the Public	2,40,000 shares
Add: Shares for firm Underwriting (20,000+14,000+10,000)	44,000 shares
Total Application	2,84,000 shares
Less: Marked applications (60,000+50,000+60,000)	1,70,000 shares
Unmarked application including firm undertaking	**1,14,000 shares**

CASH FLOW STATEMENT

CASH FLOW STATEMENT INDIRECT METHOD (TOUGH)

50. QUESTION

From the following Balance Sheet and information of Light Ltd., prepare Cash Flow Statement:

Particulars	Note No.	31st March, 2022 (₹)	31st March, 2021 (₹)
I. EQUITY AND LIABILITIES			
1. Shareholders' Funds			
(a) Share Capital	1	4,50,000	5,00,000
(b) Reserves and Surplus	2	2,55,000	1,00,000
2. Non-Current Liabilities			
Long-term Borrowings: 10% Debentures		2,00,000	1,00,000
3. Current Liabilities			
(a) Trade Payables		1,33,000	46,000
(b) Other Current Liabilities	3	5,000	10,000
(c) Short-term Provisions (Provision for Tax)		12,000	24,000
Total		10,55,000	7,80,000
II. ASSETS			
1. Non-Current Assets			
(a) Property, Plant and Equipment and Intangible Assets:			
- Property, Plant and Equipment		6,20,000	5,10,000
(b) 10% Investments		80,000	30,000
2. Current Assets			
(a) Current Investments		10,000	8,000
(b) Inventories		90,000	1,00,000
(c) Trade Receivables	4	1,85,000	90,000
(d) Cash and Cash Equivalents		70,000	42,000
Total		10,55,000	7,80,000

Notes to Accounts

Particulars	31st March, 2022 (₹)	31st March 2021 (₹)
1. Share Capital		
Equity Share Capital	3,50,000	3,00,000
12% Preference Share Capital	1,00,000	2,00,000
	4,50,000	5,00,000
2. Reserves and Surplus		
Securities Premium Reserve	5,000	.....
Surplus, i.e., Balance in Statement of Profit & Loss	2,50,000	1,00,000
	2,55,000	1,00,000
3. Other Current Liabilities		
Premium on Redemption of Preference Shares	5,000	10,000
4. Trade Receivables		
Sundry Debtors	2,00,000	1,00,000
Less: Provision for Doubtful Debts	15,000	10,000
	1,85,000	90,000

You are informed that during the year:
(i) A machine with a book value of ₹ 40,000 was sold for ₹ 25,000.
(ii) Depreciation charged during the year was ₹ 70,000.
(iii) Preference Shares were redeemed on 31st December, 2021 at a premium of 5%.
(iv) An Interim Dividend @ 15% was paid on Equity Shares on 31st January, 2022.

(v) Dividend @ 12% was proposed on Preference Shares for the year ended 31st March, 2022 on ₹ 1,00,000 and for the year ended 31st March, 2021 on ₹ 2,00,000.
(vi) Fresh Equity Shares were issued at a premium of 10% on 31st March, 2022.

ANSWER:

Cash Flow Statement of Light Ltd.
For the year ended on 31.3.2022

Particulars	**₹**	**₹**
1) Cash Flow from Operating Activities:-		
Profit for the year (2,50,000 – 1,00,000)		1,50,000
(+) Loss on Sale of Machinery		15,000
(+) Dep. on Machinery		70,000
(+) Interim Dividend (3,00,000 × 15%)		45,000
(+) Dividend on Pref. Shares (2,00,000 ×12%)		24,000
(+) Provision for tax (Cl. Bal.)		12,000
Cash Flow Before WCC		3,16,000
(+) Increase in T/P		87,000
(-) Increase in Current Investment		(2,000)
(+) Decrease in Inventory		10,000
(-) Increase in T/R		(95,000)
Cash Flow After WCC		3,16,000
(-) Tax Paid (Op. Bal.)		(24,000)
Cash Flow from Operating Activities		2,92,000
2) Cash Flow from Investing Activities: -		
Sale of Machinery		25,000
Purchase of Machinery (WN 1)		(2,20,000)
Purchase of Investments		(50,000)
		(2,45,000)
3) Cash Flow from Financing Activities: -		
Redemption of Pref. Shares at 5% Premium		(1,05,000)
Payment of Interim Dividend		(45,000)
Payment of Pref. Dividend		(24,000)
Issue of ES at 10% Premium (50,000 + 10%)		55,000
Issue of Debentures		1,00,000
		(19,000)
4) Net Increase in C & CE (1+ 2 + 3)		28,000
(+) Op. C & CE		42,000
(=) Cl. C & CE		70,000

Working Notes:

1) Machinery

Opening Balance	5,10,000	C/B (SOLD)	25,000
C/B (PURCHASE)	**2,20,000**	Loss on Sale	15,000
		Depreciation	70,000
		Closing Balance	6,20,000

C/B	25,000	
Loss (P/L)	15,000	
To Machinery		40,000

2)

12% PSC	1,00,000	
Premium on Red.	5,000	
To C/B		1,05,000

3) In absence of Information about the date of Issue of Debentures, we cannot calculate the Amt. of Interest. Hence, no effect of Interest on Deb. is given in the Cash Flow Statement.

4) In absence of Information on date of purchase of 10% Investment, we cannot calculate Interest Income. Hence, effect of Interest Income is not given in the Cash Flow Statement.

FULL CASH FLOW STATEMENT DIRECT METHOD (EASY)

51. QUESTION

The following summary cash account has been extracted from the company's accounting records:

Summary Cash Account

		(₹'000)
Balance at 1.3.20X1		35
Receipts from customers		2,783
Issue of shares		300
Sale of fixed assets		128
		3,246
Payments to suppliers	2,047	
Payments for property, plant & equipment	230	
Payments for overheads	115	
Wages and salaries	69	
Taxation	243	
Dividends	80	
Repayments of bank loan	250	(3,034)
Balance at 31.3.20X2		212

Prepare Cash Flow Statement of this company Hills Ltd. for the year ended 31st March, 20X2 in accordance with AS-3 (Revised).
The company does not have any cash equivalents.

ANSWER:

Hills Ltd.
Cash Flow Statement for the year ended 31st March, 20X2
(Using direct method)

		(₹'000)
Cash flows from operating activities		
Cash receipts from customers	2,783	
Cash payments to suppliers	(2,047)	
Cash paid to employees	(69)	
Other cash payments (for overheads)	(115)	
Cash generated from operations	552	
Income taxes paid	(243)	
Net cash from operating activities		309
Cash flows from investing activities		
Payments for purchase of fixed assets	(230)	
Proceeds from sale of fixed assets	128	
Net cash used in investing activities		(102)
Cash flows from financing activities		
Proceeds from issuance of share capital	300	
Bank loan repaid	(250)	
Dividend paid	(80)	
Net cash used in financing activities		(30)
Net increase in cash and cash equivalents		177
Cash and cash equivalents at beginning of period		35
Cash and cash equivalents at end of period		212

52. QUESTION

From the following summary of bank account of X. Ltd., prepare Cash Flow Statement for the year ended 31st March, 2023 :

Summary of Bank Account for the year ended 31.3.2023

Particulars	Amount in ₹ in lakh	Particulars	Amount in ₹ in lakh
To Balance b/d	50	By Payments to Suppliers	2,000
To Issue of Equity Shares	300	By Purchase of Fixed Assets	200
To Receipts from Customers	2,800	By Overhead Expenses	200
To Sales of Fixed Assets	100	By Wages and Salaries	100
		By Income Tax	250
		By Dividend	50
		By Repayment of Bank Loan	300
		By Balance c/d	150
Total	3,250	Total	3,250

Assume that the company does not have any cash and cash equivalents and there were NIL cash transaction.

ANSWER:

Cash Flow Statement of X Ltd. for the year ended 31st March, 2023

Particulars	Amount (in lakhs)	Amount (in lakhs)
(A) Cash Flow from Operating Activities:		
Cash receipts from customers	2800	
Less: Cash paid to suppliers	(2000)	
Overhead Expenses	(200)	
Wages and Salaries	(100)	
Cash Generated from Operations		500
Less: Income tax paid		(250)
Net Cash Flow from Operating Activities. (a)		250
(B) Cash Flow from Investing Activities:		
Purchase of Fixed Assets	(200)	
Proceeds from Sale of Fixed Assets	100	
Net Cash used in Investing Activities (b)		(100)
(C) Cash Flow from Financing Activities:		
Issue of Equity Shares	300	
Repayment of Bank Loan	(300)	
Dividend paid	(50)	
Net Cash used in Financing Activities (c)		(50)
Net Increase in cash and cash equivalents (a+b+c)		100
Add: Cash and cash equivalents at the beginning of the period		50
Cash and cash equivalents at the end of the period *(Note: The figures in brackets show cash out flow)*		**150**

CASH FLOW STATEMENT FULL QUESTION INDIRECT METHOD (MEDIUM)

53. QUESTION

Following is the Balance Sheet of R. S. Ltd. as at 31st March, 2022:

R.S. LTD.
BALANCE SHEET
AS AT 31ST MARCH, 2022

Particulars	**Note No.**	**31st March, 2022 (₹)**	**31st March, 2021 (₹)**
I. EQUITY AND LIABILITIES			
1. Shareholders' Funds			

(a) Share Capital		9,00,000	7,00,000
(b) Reserves and Surplus	1	2,50,000	1,00,000
2. Non-Current Liabilities			
Long-term Borrowings	2	4,50,000	3,50,000
3. Current Liabilities			
(a) Short-term Borrowings	3	1,50,000	75,000
(b) Short-term Provisions	4	2,00,000	1,25,000
Total		19,50,000	13,50,000
II. ASSETS			
1. Non-Current Assets			
(a) Property, Plant and Equipment and Intangible Assets:			
(i) Property, Plant and Equipment	5	14,65,000	9,15,000
(ii) Intangible	6	1,00,000	1,50,000
(b) Non-Current Investments		1,50,000	1,00,000
2. Current Assets			
(a) Current Investments		40,000	70,000
(b) Inventories	7	1,22,000	72,000
(c) Cash and Cash Equivalents		73,000	43,000
Total		19,50,000	13,50,000

Notes to Accounts

Particulars	**31st March, 2022 (₹)**	**31st March, 2021 (₹)**
1. Reserves and Surplus		
Surplus, i.e., Balance in Statement of Profit & Loss	2,50,000	1,00,000
2. Long-term Borrowings		
12% Debentures	4,50,000	3,50,000
3. Short-term Borrowings		
Bank Overdraft	1,50,000	75,000
4. Short-term Provisions		
Provision for Tax	2,00,000	1,25,000
5. Property, Plant and Equipment		
Machinery	16,75,000	10,55,000
Accumulated Depreciation	(2,10,000)	(1,40,000)
	14,65,000	9,15,000
6. Intangible Assets		
Goodwill	1,00,000	1,50,000
7. Inventories		
Stock-in-Trade	1,22,000	72,000

Additional Information:
(i) ₹1,00,000, 12% Debentures were issued on 31st March, 2022.
(ii) During the year a piece of machinery costing ₹ 80,000, on which accumulated depreciation was ₹ 40,000, was sold at a loss of ₹ 10,000.
Prepare Cash Flow Statement.

ANSWER:

CASH FLOW STATEMENT
R.S. LTD.
FOR THE YEAR ENDED ON 31ST MARCH, 2022

Particulars	**₹**	**₹**
I. Cash Flow from Operating Activities:-		
Net Profit for the year (2,50,000 – 1,00,000)		1,50,000
(+) Loss on Sale of P & M		10,000
(+) Deb. on P & M		1,10,000

(+) Provision for Tax		2,00,000
(+) Amortization of goodwill (1,50,000 – 1,00,000)		50,000
Cash Flow Before WCC		5,20,000
(+) Decrease in Current Investment (70,000 – 40,000)		30,000
(-) Increase in Inventory (1,22,000 – 72,000)		(50,000)
(+) Increase in Short Term Borrowing		75,000
Cash Flow After WCC		5,75,000
(-) Tax Paid		(1,25,000)
Cash Flow from Operating Activities		4,50,000
II. Cash Flow from Investing Activities:-		
(+) Sale of P & M		30,000
(-) Purchase of P & M		(7,00,000)
(-) Purchase of L. T. Investments (1,50,000 – 1,00,000)		(50,000)
		(7,20,000)
III. Cash Flow from Financing Activities:-		
(+) Issue of 12% Debentures (4,50,000 – 3,50,000)		1,00,000
(+) Issue of Equity Share Capital (9,00,000 – 7,00,000)		2,00,000
		3,00,000
IV. Net Increase in C & CE {1+2+3)		30,000
(+) Opening Balance of C & CE		43,000
(=) Closing Balance of C & CE		73,000

Loss = WDV = Sale Value
10,000 = 40,000 – Sale Value
SV = 30,000

WDV = OC – AD
= 80,000 – 40,000
= 40,000

Working Notes:

PLANT AND MACHINERY ACCOUNT (GROSS BLOCK)

Op.	10,55,000	C/B	30,000
C/B (PURCHASED)	**7,00,000**	P & L	10,000
		A. D.	40,000
		Cl.	16,75,000

ACCUMULATED DEPRECIATION

P & M	40,000	Op.	1,40,000
		P & L (Cy Deb.)	1,10,000
Cl.	2,10,000		

54. QUESTION (EASY)

The summarized information of CBA Limited is given below :

Balance Sheet of CBA Ltd. on 1st April 2022 to 31st March, 2023

		Amount (in ₹)	
	Particulars	**1st April 2022**	**31st March, 2023**
I.	**Equities and Liabilities**		
	Equity Share Capital	9,00,000	10,50,000
	Share Premium	-	90,000
	General Reserve	1,35,000	1,95,000
	Profit and Loss Account	90,000	2,42,400
	10% debentures	-	2,10,000
	Sundry Creditors	2,55,000	2,72,100
	Provision for Taxation	67,500	1,21,500

	Proposed Dividend	90,000	1,05,000
	Total	**15,37,500**	**22,86,000**
II.	**Assets**		
	Land and Building	6,90,000	11,70,000
	Plant and Machinery	2,56,200	4,20,000
	Furniture	16,500	19,500
	Stock	2,47,200	2,87,100
	Sundry Debtors	2,25,000	2,56,500
	Bank	1,02,600	1,32,900
		15,37,500	**22,86,000**

Depreciation during the year:	**Amount (in ₹)**
Land and Building	1,80,000
Plant and Machinery	1,50,000
Furniture	3,600

Debentures were issued on 1st October, 2022.

Prepare Cash Flow Statement of CBA Limited for the financial year ended 31st March, 2023.

SOLUTION:

Land and Building Account			
Particulars	**In ₹**	**Particulars**	**in ₹**
To balance b/d	6,90,000	By depreciation	1,80,000
To Purchase (Bank)	6,60,000	By balance c/d	11,70,000
	13,50,000		13,50,000
Plant and Machinery Account			
Particulars	**in ₹**	**Particulars**	**in ₹**
To balance b/d	2,56,200	By depreciation	1,50,000
To Purchase (Bank)	3,13,800	By balance c/d	4,20,000
	5,70,000		5,70,000
Furniture Account			
Particulars	**in ₹**	**Particulars**	**in ₹**
To balance b/d	16,500	By depreciation	3,600
To Purchase (Bank)	6,600	By balance c/d	19,500
	23,100		23,100
Provision for Taxation Account			
Particulars	**in ₹**	**Particulars**	**in ₹**
To Bank	67,500	By balance b/d	67,500
To balance c/f	1,21,500	By P & L	1,21,500
	1,89,000		1,89,000

Cash Flow Statement of CBA Limited for the year ended 31st March 2023

	Particulars	**in ₹**	**in ₹**	**in ₹**
(i)	**Cash Flow from Operating Activities**			
Add	Profit for the year (P&L difference)		1,52,400	
	Depreciation			
	Land and Building	1,80,000		
	Plant and Machinery	1,50,000		
	Furniture	3,600	**3,33,600**	
	General Reserve		**60,000**	
	Interest on Debentures (for 6 months)		**10,500**	

	Provision for Tax		**1,21,500**	
	Proposed Dividend		**1,05,000**	
	Cash flow before working capital changes		**7,83,000**	
	Working capital changes			
	Stock	-39,900		
	Sundry Debtors	-31,500		
	Sundry creditors	17,100	**-54,300**	
			7,28,700	
	Tax Paid		**-67,500**	
	Cash Flow from Operating Activities (A)		**6,61,200**	**6,61,200**
(ii)	**Cash Flow from Investing Activities**			
	Purchase of Land and Building		**6,60,000**	
	Purchase of Plant and Machinery		**3,13,800**	
	Purchase of Furniture		**6,600**	
	Cash Flow from Investing Activities (B)		**9,80,400**	**-9,80,400**
(iii)	Cash Flow from Financing Activities			
	Interest on debentures		**-10,500**	
	Issue of equity shares		**1,50,000**	
	Share premium		**90,000**	
	Debenture issue		**2,10,000**	
	Payment of dividend		**-90,000**	
	Cash Flow from Financing Activities I		**3,49,500**	**3,49,500**
	Net change in cash and cash equivalents (A+B+C)			**30,300**
	+ Cash and cash equivalents at the beginning			**1,02,600**
	= Cash and cash equivalents at the end			**1,32,900**

Note: It is assumed that the amount of Provision for Taxation and Proposed Dividend as on 1st April 2022 i.e base year is paid in current year.

CASH FLOW FROM FINANCING ACTIVITIES

55. QUESTION

The Capital structure of Sangam Ltd. is given below :

Particulars	₹ **(Crore)**
Share Capital (divided in shares of 10/- each)	5,000
Secured Loans	4,000
Unsecured Loans	2,500

In the next year the company is undertaking an expansion project of ₹ 1,500/- crore.
The project is to be financed in the ratio of 40% infusion of fresh owner capital and 60% secured debt capital. No old debt is repaid during the year.

The equity capital will be raised at ₹ 15/- per share. The average interest rate of the debt (old + new) will be 13%.
The income tax rate is 25%.
Prepare a statement showing forecast cash flow from financing activities.

SOLUTION

Cash flow from Financing Activities

Particulars	**Amount in ₹ Crore**	**Amount in ₹ Crore**

Share Capital raised	400	
Share Premium	200	600
New Secured Debt raised		900
Debt interest		-962
Cash inflow from financing activities		**538**

Working Notes:

Breakup of Capital

Total Finance required for expansion project		₹ 1500 crore
Equity Capital	40%	₹ 600 crore
Debt Capital	60%	₹ 900 crore

Amount in ₹ Crore

Secured Loans	4000
Unsecured Loans	2500
Amount raised from secured debt capital for new project	900
Total debt capital	7400
Interest Cost @13%	962

FORECASTING FINANCIAL STATEMENT

FORECASTED CASH FLOW STATEMENT

56. QUESTION

Following is the balance sheet of XL ltd at the end of 2022 is as follows and you are required to forecast Cash flow for 2023. (Rs. in cr.)

Liabilities	Amount Rs	Assets	Amount Rs
Share Capital	100	Fixed Assets	180
Reserves and Surplus	20	Current Assets:	
Secured Loans	80	Cash	20
Unsecured Loans	50	Trade Receivables	80
Current liabilities	90	Inventories	80
Provisions	20		
Total	**360**	**Total**	**360**

The projected Profit & Loss for the year 2023 is given below:

Revenue from operation	400
Cost of Goods Sold	300
Depreciation	20
Profit Before Interest and taxes	80
Interest	20
PBT	60
Tax	30
PAT	30
Dividend	10
Retained Earnings	20

During the year 2023, company has forecasted to raise secured term loan of Rs. 20 crore and repay of previous term loan to the extent of Rs. 5 crore and increase unsecured loan by Rs. 10 crore. It is forecasted that current liabilities and provisions remains unchanged. While, company is planning to buy fixed assets worth Rs. 30 crore and increase the inventories and receivables by Rs. 10 crore and Rs. 15 crore respectively. Company is in the projection of paying dividend of Rs. 10 crore. Assuming other asset would remain unchanged except cash.

ANSWER:

Statement showing forecasted Cash Flow

Particulars	₹ in Cr.
Cash Flow from Operating Activities:	
Retained Earnings	20
(+) Dep.	20
(+) Interest	20
(+) Dividend	10
(-) Increase in Inventories	(10)
(-) Increase in Trade Receivables	(15)
	45
Cash Flow from Investing Activities:	
Buy Fixed Assets	(30)
	(30)
Cash Flow from Financing Activities:	
Interest Paid	(20)
Dividend Paid	(10)
Secured Loan Taken (20 – 5)	15
Unsecured Loan Taken	10

	(5)
Net Increase/(Decrease) in C & CE (45-30-5)	10
Opening of C & CE	20
Closing of C & CE	30

FORECASTED BALANCE SHEET

57. QUESTION

Following is the balance sheet of Wye ltd at the end of 2022 is as follows and you are required to forecast Cash flow for 2023. (Rs in cr.)

Liabilities	**Amount Rs**	**Assets**	**Amount Rs**
Share Capital	100	Fixed Assets	180
Reserves and Surplus	20	Current Assets:	
Secured Loans	80	Cash	20
Unsecured Loans	50	Trade Receivables	80
Unsecured Loans	50	Trade Receivables	80
Current liabilities	90	Inventories	80
Provisions	20		80
Total	**360**	**Total**	**360**

The projected Profit & Loss for the year 2023 is given below:

Revenue from operation	400
Cost of Goods Sold	300
Depreciation	20
Profit Before Interest and taxes	80
Interest	20
PBT	60
Tax	30
PAT	30
Dividend	10
Retained Earnings	20

During the year 2023, company has forecasted to raise secured term loan of Rs. 20 crore and repay of previous term loan to the extent of Rs. 5 crore and increase unsecured loan by Rs. 10 core. It is forecasted that current liabilities and provisions remains unchanged. While, company is planning to buy fixed assets worth Rs. 30 crore and increase the inventories and receivables by Rs. 10 crore and Rs.15 crore respectively.

Company is in the projection of paying dividend of Rs. 10 crore. Assuming other assets would remain unchanged except cash.

ANSWER

Projected Balance Sheet
As on 31.3.2023

Particulars	**₹ in Cr.**
Equity and Liabilities:-	
Shareholders Funds:-	
Share Capital (100)	100
Reserves and Surplus (20 + 20) (Dividend already deducted)	40
Non-Current Liabilities:-	
Long Term Borrowings (80 + 50 + 20 – 5 + 10) (Secured + Unsecured)	155
Current Liabilities:-	
Trade Payable (90)	90
Short Term Provisions (20)	20
	405
Assets:-	

PPE & IA	
PPE (180 + 30 – 20) Op + Pro. – Dep.	190
Current Assets:-	
Trade Receivable (80 + 15)	95
Inventories (80 + 10)	90
C & CE (Balancing Figure)	30
	405

FORECASTED PROFIT & LOSS STATEMENT

58. QUESTION

You are the Company Secretary of DP ltd and assigned task of profitability projections of difference scenarios based on historical data provided: (Rs in Cr.)

Revenue (sales)	200
Variable Cost (60% of Sales)	120
Fixed Cost (Others)	20
Depreciation	25
Taxes	10
Cash flow from operation	50
Net Cash flow	50

Company is forecasting that sales will be increased by 37.5% approximately keeping in the mind of Market forces whereas, the variable cost will be forecasted at 56% of sales. Company is in the anticipation of having fixed cost of Rs.15 cr. On the other side (i.e.) on worst situation, Company is forecasting the that sales will be curb by 25% approximately keeping in the mind of Market forces whereas, the variable cost will be forecasted at 65% of sales. Company is in the anticipation of having fixed cost of Rs. 25 cr. It is forecasted that depreciation remains unchanged in case of any scenario and tax rate shall be applicable at 28.57%.

ANSWER:

Statement showing Profitability Projection (Rs in Cr.)

Particulars	Current	Best	Worst
Sales	200	275	150
(-) Variable Cost	(120)	(154)	(97.5)
Contribution	80	121	52.5
(-) FC	(20)	(15)	(25)
(-) Dep. (Constant)	(25)	(25)	(25)
EBIT/(EBT)	35	81	2.5
(-) Tax @ 27.57%	(10)	(23.14)	(0.71)
PAT	25	57.86	1.79

PROJECTED PROFIT & LOSS STATEMENT

At the end of last year, X ltd reported the following income statement (Rs in Cr.)

Sales	3000
Operating cost excluding depreciation	2450
EBITDA	550
Depreciation	250
EBIT	300
Interest	125
EBT	175
Taxes@40%	70
EAT(Net Income)	105

Looking ahead to the following year, the company management has assembled the following information.

- Year-end sales are expected to be 10% higher than last year.
- Year-end Operating Cost excluding depreciation are expected to equal 80% of year-end sales.
- Depreciation is expected to increase at the same rate as sales.
- Interest costs are expected to remain unchanged.
- Interest costs are expected to remain unchanged.
- Tax rate is expected to remain at 40%.

Based on the above information, what will be the forecast for year-end net income?

ANSWER:

Projected Profit & Loss Statement

Particulars	**₹ in Cr.**
Sales (3000 +10%)	3300
(-) Operating Cost (3300 × 80%)	(2,640)
EBIT DA	660
(-) Dep. (250 + 10%)	(275)
EBIT	385
(-) Interest	(125)
EBT	260
(-) Tax @ 40%	(104)
EAT	156

PROJECTED NET INCOME & GROWTH RATE (1)

59. QUESTION

Y Ltd recently reported the following income Statement Rs in Cr.

Sales	700
Operating Cost	500
EBIT	200
Interest	40
EBT	160
Taxes@40%	64
EAT(Net Income)	96
Dividend	32
Retained Earnings	64

This year company is forecasting 25% increase in sales and it expects that its year end operating cost will be around 70% of sales. It is expected that tax rate, interest and dividend pay-out ratio will be constant. You are required to compute projected Net Income and expected growth rate in dividend.

Solution:

$$Dividend\ Payout = \frac{Dividend}{Earnings\ For\ Equity} = \frac{32}{96} \times 100 = 33.33\%$$

1)

Projected Profit & Loss Statement

Particulars	**Amount (₹ in Cr.)**
Sales (700 + 25%)	875
(-) Operating Cost (875 × 70%)	(612.5)
EBIT	262.5
(-) Interest	(40)
EBT	222.5
(-) Tax @ 40%	(89)

EAT	133.5
(-) Dividend (133.5 × 33.33%)	(44.5)
Retained Earnings	89

2) Expected Growth Rate in Dividend:-

$$= \frac{Current\ Year - Previous\ Year}{Previious\ Year} \times 100$$

$$= \frac{44.5 - 32}{32} \times 100$$

= 39.0625%

PROJECTED NET INCOME & GROWTH RATE (2)

60. QUESTION

X ltd recently reported the following 2022 income statement (Rs in cr.)

Sales	1528
Operating Cost	933
EBIT	595
Interest	95
EBT	500
Taxes@40%	200
EAT (Net Income)	300
Dividend (25%)	75
Retained Earnings	225

This year company is forecasting 20% increase in sales and it expects that its year end operating cost will be around 60% of sales. It is expected that tax rate, interest and dividend pay-out ratio will be constant. You are required to compute projected Net Income and expected growth rate in dividend.

Solution:

$$Payout\ Ratio = \frac{Dividend}{PAT} \times 100$$

$$= \frac{75}{300} \times 100 = 25\%$$

1)

Project Profit & Loss

Particulars	**₹ in Cr.**
Sales (1,528 + 20%)	1833.6
(-) Operating Cost (1833.6 × 60%)	(1100.16)
EBIT	733.44
(-) Interest	(95)
EBT	638.44
(-) Tax @ 40%	(255.376)
EAT	383.064

2) Dividend (CY.) = 383.064 × 25% = 95.77

3)

$$Dividend\ Growth\ Rate = \frac{95.77 - 75}{75} \times 100 = 27.69\%$$

61. QUESTION

Central Textiles Ltd. has provided you its historical revenue and cost data :

Particulars	Amount (Crore)
Revenues	1,000
Variable Cost 70% of sales	700
Fixed Cost	115
Depreciation	101
Income Tax	25%

Central Textiles Ltd. management is attempting to project profitability for next year under different scenarios. The historical data will be the base case scenario. The details regarding optimistic scenario and worst-case scenario are given below :

Particulars	Optimistic Scenario	Worst-Case Scenario
Revenue change	40% increase	20% decrease
Variable cost	65% of sales	71 % of sales
Fixed cost	113/- crore	120/- crore
Depreciation	Same as base case	Same as base case

Prepare Profitability projection with the given data.

SOLUTION

Profit projections for Central Textiles Ltd.

Amount in ₹ Crore

	Base Case	Optimistic Scenario	Worst -Case Scenario
Revenues (A)	1,000	1,400	800
Less: Variable Cost (B)	700	910	568
Contribution (A-B)	300	490	232
Less: Fixed Cost	115	113	120
Less: Depreciation	101	101	101
Profit before Tax	84	276	11
Income Tax 25%	21	69	2.75
Profit after Tax	63	207	8.25

(Note: Base case scenario does not carry any marks)

62. PROJECTED CASH FLOW & PROJECTED PROFITABILITY

Aashna is a Mechanical Engineer from a premier institute based in Kolkata. After working for a decade in the engineering industry, Aashna completes a management development programme from a top-grade Business School. Subsequently, Aashna along with her three colleagues sets up a venture capital fund - GKJ & Co. The aim is to invest in companies that manufacture import substitutes. There is an impetus from the Government to manufacture in India to meet domestic demand and for the world and hence it is felt that any investment made in the manufacturing industry is likely to grow at an above average rate.

GKJ & Co. has raised an initial amount of ₹ 80 crore from investors and is scouting for initial deployment opportunities. One such opportunity is investments in Royden & Co. Royden & Co. is a manufacturer of equipment and tools which are used in dental clinics. This equipment is essentially an import substitute and has potential to be exported as well.

The Balance Sheet of Royden & Co. as on the recent financial year end is given below :

I. Equity and Liabilities	Beginning of financial year (₹ Lakhs)	Ending of financial year (₹ Lakhs)

Share Capital	1,400	1,600
Share Premium	476	220
Retained Earnings	476	616
7% Mortgage Loans	-	400
Creditors	138	120
Outstanding Salaries	40	28
Provision for taxation	20	28
Total	**2,254**	**3,012**
II. Assets		
Plant & Machinery	1,240	1,320
Accumulated depreciation on plant and machinery	(740)	(524)
Building	1,900	2,320
Accumulated depreciation on building	(860)	(900)
Land	200	240
Stock	204	192
Debtors	172	152
Prepaid Expenses	14	16
Cash & Bank	124	196
Total	**2,254**	**3,012**

The following additional details are hereunder :

(i) Plant costing ₹ 320 lakhs (accumulated depreciation ₹ 296 lakhs) was sold during the year for ₹ 24 lakhs
(ii) Building was acquired during the year at cost of ₹ 420 lakhs. In addition to cash payment of ₹ 20 lakhs mortgage of ₹ 400 lakhs was raised for balance.
(iii) Dividend of ₹ 160 lakhs was paid during the year.
(iv) A sum of ₹ 278 lakhs was transferred to Provision for tax account.

Royden & Co. wants to setup a plant to manufacture advanced dentistry equipment. The said equipment is imported from USA. The Indian Government is giving benefits in terms of tax holidays for such types of business. It is estimated that turnover of ₹ 800 lakhs could be generated at a profit in the first year of operations. The new business setup requires a significant investment. Royden & Co. have reached out to GKJ & Co. for the first round of funding. GKJ & Co. has requested Royden & Co. for some further information before investing. Royden & Co. is requested to prepare profitability projections under different scenarios. The scenarios are given below :

	Base Case (Rs. Lakhs)	**Best Case**	**Worst Case**
Revenues	800	Sales higher by 37.5%	Sales decline by 25%
Variable Cost 60% of sales	480	56% of sales	65% of sales
Fixed Cost	80	60	100
Depreciation	100	100	100
Income Tax	Rs.40 lakhs	Same income tax rate as base case	Same income tax rate as base case

(a) Prepare cash flow statement (indirect method) of Royden & Co. for the current financial year with the available details.
(b) Return on Equity and Return on Assets of Royden & Co.
(c) Calculate profit under different scenarios. (JUNE 2025)

Answer (a)

Cash Flow Statement (indirect method) of Royden & Co.

		Amount (₹lakh)
A. Cash Flow from Operations		
Net Profit for the year before dividend and provision for tax (W.N. 1)		578
Depreciation on Plant (W.N: 2)	80	
Depreciation on Building (W.N: 2)	40	120
		698
Changes in working capital		
Decrease in stock	12	
Decrease in Debtors	20	
Increase in prepaid expenses	(2)	30
Decrease in creditors	(18)	
Decrease in outstanding salaries	(12)	(30)
Cash flow from operations before tax payment		698
Less: Income Tax paid (W.N: 1)		(270)
Cash flow from operations after income tax paid – I		**428**
B. Cash Flow from Investing		
Purchase of Building (W.N: 2)	(420)	
Purchase of Plant & Machinery (W.N: 2)	(400)	
Purchase of Land	(40)	
Sale of Plant	24	
Net Cash Flow from Investing – II		**(836)**
C. Cash Flow from Financing		
Mortgage Loan	400	
Issue of Shares	200	
Share premium	40	
Dividend paid	(160)	
Cash Flor from Financing – III		**480**
Change in Cash & cash equivalent (I+III+II)		**72**
Opening Balance of cash & cash equivalents		**124**
Closing Balance of cash & cash equivalents		**196**

Working Note- 1: Calculation of Net Profit after tax but before dividend and provision for tax.

Provision for Taxation A/c

Particulars	**Amount (₹ lakh)**	**Particulars**	**Amount (₹ lakh)**
To Bank (income tax paid) (Balancing figure)	**270**	By balance b/d	20
To balance c/d	28	By P & L A/c	278

	298		298

Retained Earnings A/c

Particulars	Amount (₹ lakh)	Particulars	Amount (₹ lakh)
To Dividend paid	160	By balance b/d	476
To balance c/f	616	By Profit (Balancing figure)	300
	776		776

Net profit for the year = Provision for Tax Account (P&L account balance) + Profit for the year as per retained earnings
= ₹ 278 lakh + ₹ 300 lakh = ₹ 578 Lakh

Working Note- 2: Depreciation

Plant and Machinery A/c

Particulars	Amount (₹ lakh)	Particulars	Amount (₹ lakh)
To balance b/f	1,240	By Bank A/c (sale of plant)	24
To Bank-purchase (Balancing figure)	**400**	By depreciation on plant sold	296
		By balance c/d	1,320
	1,640		1,640

Accumulated Depreciation on Plant and Machinery A/c

Particulars	Amount (₹ lakh)	Particulars	Amount (₹ lakh)
To depreciation on plant sold	296	By balance b/d	740
To balance c/d	524	By P & L A/c (depreciation for current year)	80
	820		820

Building A/c

Particulars	Amount (₹ lakh)	Particulars	Amount (₹ lakh)
To balance b/d	1,900		
To Bank	420		
		By balance c/d	2,320
	2,320		2,320

Accumulated Depreciation on Building A/c

Particulars	Amount (₹ lakh)	Particulars	Amount (₹ lakh)
		By balance c/d	860
To balance c/f	900	By P & L A/c (depreciation)	40
	900		900

Answer (b)

(Amount in ₹ lakh)

Net Profit After Tax [NPAT] (W.N. – 1)	**300**	
Total Assets **(A)**	2,254	3,012
Average Total Assets [(Beginning + Closing)/2]	2,633	
Return on total assets (NPAT/Average total assets)	**11.39%**	
Equity (Share Capital + Share Premium + Retained Earnings)	2,056	2,436
Average Total Equity [(Opening + Closing)/2]	2,246	
Return on equity (NPAT/Average total equity)	**13.36%**	

Answer (c)

Amount in ₹ lakh

Calculation of Profit under different scenarios

	Base case	**Best Case**	**Best Case**	**Worst Case**	**Worst Case**	
Revenues (A)	800	37.50% Higher sales	1,100	-25% (Decline sales)	600	
Variable Cost 60% (B)	480	56% of Sales	616	65% of Sales	390	
Contribution (C=A-B)	**320**		**484**		**210**	**2 marks**
Fixed Cost (Given) (D)	80		60		100	
Depreciation (Given) (E)	100		100		100	
Profit Before Tax (C-D-E)*	**140**		**324**		**10**	**1 mark**
Less: Income Tax	40	28.57% of 324	93	28.57% of 10	3	
Profit After Tax	100		**231**		**7**	**2 marks**
*** Income tax rate (Income Tax/PBT) (40/140) = 28.57% Rounded off to nearest whole number)**						

CURRENT RATIO

63. QUESTION

Calculate Current Ratio from the following information:

Particulars	(Rs.)
Inventories	50,000
Trade receivables	50,000
Advance tax	4,000
Cash and cash equivalents	30,000
Trade payables	1,00,000
Short-term borrowings (bank overdraft)	4,000

ANSWER:

Current Ratio = Current Assets / Current Liabilities

Current Assets = Inventories + Trade receivables + Advance tax + Cash and cash equivalents

= Rs. 50,000 + Rs. 50,000 + Rs. 4,000 + Rs. 30,000 = Rs. 1,34,000

Current Liabilities = Trade payables + Short-term borrowings
= Rs. 1,00,000 + Rs. 4,000 = Rs. 1,04,000

Current Ratio = Rs.1,34,000 / Rs.1,04,000

= 1.29 :1

QUICK RATIO:

64. QUESTION

Calculate quick ratio from the information given in the above question.

ANSWER:

Quick Ratio = Quick Assets / Current Liabilities
Quick Assets = Current assets – (Inventories + Advance tax)
= Rs. 1,34,000 – (Rs. 50,000 + Rs. 4,000) = Rs. 80,000
Current Liabilities = Rs. 1,04,000
Quick Ratio = Rs. 80,000 / Rs. 1,04,000
= 0.77 :1

MIX CURRENT RATIO & QUICK RATIO:

65. QUESTION

X Ltd., has a current ratio of 3.5:1 and quick ratio of 2:1. If excess of current assets over quick assets represented by inventories is Rs. 24,000, calculate current assets and current liabilities.

ANSWER:

Current Ratio = 3.5:1
Quick Ratio = 2:1
Let Current liabilities = x
Current assets = 3.5x
and Quick assets = 2x

Inventories = Current assets – Quick assets
24,000 = 3.5x – 2x
24,000 = 1.5x
x = Rs.16,000

Current Liabilities = Rs.16,000

Current Assets = 3.5x = 3.5 × Rs. 16,000 = Rs. 56,000.

DEBT EQUITY RATIO:

66. QUESTION

From the following balance sheet of a company, calculate Debt-Equity Ratio:

Balance Sheet

Particulars	Note No.	Amount (Rs.)
I. Equity and Liabilities		
1. Shareholders' funds		
(a) Share capital		8,00,000
(b) Reserves and Surplus	1	1,00,000
2. Share application money pending allotment		2,00,000
3. Non-Current Liabilities		
Long-term borrowings		1,50,000
Current liabilities		1,50,000
Total		**14,00,000**
II. Assets		
1. Non-Current Assets		
a) Fixed assets		
Tangible assets	2	11,00,000
2. Current Assets		
a) Inventories		1,00,000
b) Trade receivables		90,000
c) Cash and cash equivalents		1,10,000
Total		**14,00,000**

Notes to Accounts	Rs.
1. Share Capital	
Equity Share Capital	6,00,000
Preference Share Capital	2,00,000
Total	8,00,000
2. Tangible Assets:	
Plant and Machinery	5,00,000
Land and Building	4,00,000
Motor Car	1,50,000
Furniture	50,000
Total	11,00,000

ANSWER:

Debt-Equity Ratio = Long - term Debts / Equity (Shareholders' Funds)
Long-term Debts = Long-term Borrowings = Rs. 1,50,000
Equity = Share capital + Reserves and surplus+ Share application money pending allotment
= Rs. 8,00,000 + Rs. 1,00,000 + Rs. 2,00,000 = Rs. 11,00,000
Debt Equity Ratio = 1,50,000 / 11,00,000
= 0.136 : 1

INTEREST COVERAGE RATIO:

67. QUESTION

From the following details, calculate interest coverage ratio: Net Profit after tax Rs. 60,000; 15% Long-term debt 10,00,000; and Tax rate 40%.

ANSWER:

Net Profit after Tax = Rs. 60,000
Tax Rate = 40%

Net Profit before tax = Net profit after tax × 100/(100 – Tax rate)
= Rs. 60,000 × 100/(100 – 40) = Rs. 1,00,000
Interest on Long-term Debt = 15% of Rs. 10,00,000 = Rs. 1,50,000
Net profit before interest and tax = Net profit before tax + Interest
= Rs. 1,00,000 + Rs. 1,50,000 = Rs. 2,50,000
Interest Coverage Ratio = Net Profit before Interest and Tax/Interest on long-term debt
= Rs. 2,50,000/Rs. 1,50,000
= 1.67 times

INVENTORY TURNOVER RATIO:

68. QUESTION

From the following information, calculate inventory turnover ratio:

	Rs.
Inventory in the beginning =	18,000
Inventory at the end =	22,000
Net purchases =	46,000
Wages =	14,000
Revenue from operations =	80,000
Carriage inwards =	4,000

ANSWER:
Inventory Turnover Ratio = Cost of Goods Sold / Average Inventory
Cost of Goods Sold = Inventory in the beginning + Net Purchases + Wages + Carriage inwards – Inventory at the end = Rs. 18,000 + Rs. 46,000 + Rs. 14,000+ Rs. 4,000 – Rs. 22,000= Rs. 60,000
Average Inventory = (Inventory in the beginning + Inventory at the end) / 2
= (Rs. 18,000 + Rs. 22,000) / 2
= Rs. 20,000
Inventory Turnover Ratio = Rs. 60,000 / Rs. 20,000 = 3 Times

RECEIVABLES TURNOVER RATIO:

69. QUESTION

Calculate the Trade receivables turnover ratio from the following information:

	Rs.
Total Revenue from operations	4,00,000
Cash Revenue from operations	20% of Total Revenue from operations
Trade receivables as at 1.4.2021	40,000
Trade receivables as at 31.3.2022	1,20,000

ANSWER:
Trade Receivables Turnover Ratio = Net Credit Revenue from Operations / Average Trade Receivables

Credit Revenue from operations = Total revenue from operations – Cash revenue from operations

Cash Revenue from operations = 20% of Rs. 4,00,000 = Rs. 80,000

Credit Revenue from operations = Rs. 4,00,000 – Rs. 80,000 = Rs. 3,20,000

Average Trade Receivables = (Opening Trade Receivables + Closing Trade Receivables) / 2 = (Rs. 40,000 + Rs. 1,20,000) / 2 = Rs. 80,000

Trade Receivables Turnover Ratios = Net Credit Revenue From Operations / Average Inventory

Trade Receivables Turnover Ratio = Rs. 3,20,000 / Rs. 80,000 = 4 times.

70. QUESTION

Calculate Trade Receivables turnover ratio and average collection period from the following information :

Total Revenue from operations	₹78,00,000
Revenue from sales on credit	65%
Trade receivables at beginning of financial year	₹5,00,000
Trade receivables at end of financial year	₹7,00,000

Assume 365 days in the year for calculation of average collection period. (JUNE 25)

ANSWER:

Total Revenue from operations	₹78,00,000
Credit Revenue	65%
Credit Revenue	**₹50,70,000**

Trade Receivables at beginning of financial year	₹5,00,000
Trade Receivables at end of financial year	₹7,00,000
Average receivables (5,00,000 + 7,00,000 / 2)	**₹6,00,000**

$$Trade\ Receivables\ Turnover\ Ratio = \frac{Credit\ Revenue}{Average\ Receivables} = \frac{Rs.\,50{,}70{,}000}{Rs.\,6{,}00{,}000} = 8.45$$

$$Average\ collection\ period = \frac{365}{Trade\ Receivables\ turnover\ ratio} = \frac{365}{8.45} = 43\ days\ (Approx.)$$

CREDITOR PAYMENT PERIOD & MATERIAL CONSUMED

71. QUESTION

Calculate material consumed in production and payment for the inventory from the given figures. Assume entire purchase is on credit basis : (JUNE 25)

Particulars	₹
Inventory in the beginning	80,000
Credit Purchases	3,20,000
Inventory in the end	76,000
Trade payables in the beginning	28,000
Trade payables at the end	29,000

ANSWER:

Inventory A/c

(Amount in ₹)

To balance b/d	80,000	By Material consumed (Balancing figure)	3,24,000
To Trade Payables	3,20,000	By balance c/d	76,000
	4,00,000		4,00,000

Trade Payable A/c

(Amount in ₹)

To bank (Bal. figure)	**3,19,000**	By balance b/d	28,000

To balance c/d	29,000	By Inventory	3,20,000

GROSS PROFIT MARGIN

72. QUESTION

Following information is available for the year 2022-23, calculate gross profit margin ratio:

Revenue from Operations:	
Cash	25,000
Credit	75,000

Purchases:	
Cash	15,000
Credit	60,000
Carriage Inwards	2,000
Salaries	25,000
Decrease in Inventory	10,000
Return Outwards	2,000
Wages	5,000

ANSWER:

Revenue from Operations = Cash Revenue from Operations + Credit Revenue from Operation = Rs. 25,000 + Rs.75,000 = Rs. 1,00,000

Net Purchases = Cash Purchases + Credit Purchases – Return Outwards = Rs.15,000 + Rs.60,000 – Rs.2,000 = Rs. 73,000

Cost of Revenue from operation = Purchases + (Opening Inventory – Closing Inventory) + Direct Expenses

= Purchases + Decrease in inventory + Direct Expenses

= Rs.73,000 + Rs.10,000 + (Rs.2,000 + Rs.5,000)
= Rs.90,000

Gross Profit = Revenue from Operations – Cost of Revenue from Operation = Rs.1,00,000 – Rs.90,000 = Rs. 10,000

Gross Profit Ratio = Gross Profit/Net Revenue from Operations ×100 = Rs.10,000/Rs.1,00,000 × 100 = 10%.

EBITDA MARGIN

73. QUESTION

Given the following information:

Revenue from Operations	3,40,000
Cost of Revenue from Operations	1,20,000
Selling expenses	80,000
Administrative Expenses	40,000

Calculate Gross profit ratio and EBITDA margin

ANSWER:

Gross Profit = Revenue from Operations – Cost of Revenue from Operations
= Rs. 3,40,000 – Rs. 1,20,000 = Rs. 2,20,000

Gross Profit Ratio = (Gross Profit / Revenue from operation) x 100
= (Rs. 2,20,000 / Rs. 3,40,000) x 100

= 64.71%

EBITDA Margin = {(Gross Profit - Selling Expenses - Administrative Expenses) / Revenue from operation} x 100
= {(Rs. 2,20,000 - 80,000 - 40,000) / 340000} x 100
= 29.41%

NET PROFIT MARGIN

74. QUESTION

Gross profit ratio of a company was 25%. Its credit revenue from operations was Rs. 20,00,000 and its cash revenue from operations was 10% of the total revenue from operations. If the indirect expenses of the company were Rs. 50,000, calculate its net profit ratio.

ANSWER:

Cash Revenue from Operations = Rs.20,00,000 × 10/90 = Rs. 2,22,222
Hence, total Revenue from Operations are = Rs.22,22,222

Gross profit = 0.25 × 22,22,222 = Rs. 5,55,555

Net profit = Rs.5,55,555 – 50,000 = Rs.5,05,555

Net profit ratio = Net profit/Revenue from Operations × 100
= Rs.5,05,555/Rs.22,22,222 × 100 = 22.75%

RETURN ON EQUITY (DU PONT)

75. QUESTION

The following data is given for two similar companies:

	A Ltd.	**B. Ltd.**
Net profit margin	23%	20%
Assets turnover ratio	1.25	1.50
Financial Leverage	1.50	1.40

(i) Calculate Return on Equity for A Ltd. and B Ltd.
(ii) Which company has higher Return on Equity ?
(iii) What is the reason for higher return on equity ? (JUNE 25)

ANSWER:

Answer (i)

Return on equity =	**Net Profit Margin Asset turnover ratio×Financial Leverage**		
A Ltd. =	23% ×1.25 ×1.50	=	43.13%
B Ltd. =	20% ×1.50 ×1.40	=	42.00%

Answer (ii)

A Ltd. has higher Return on equity.

Answer (iii)

A Ltd. has higher net profit margin (Net Profit/Sales) and slightly better financial leverage (Total Assets/Total Equity) as compared to B Ltd.

MIX QUESTION (MEDIUM)

76. QUESTION

Closing debtors ₹ 2,00,000, cash sales being 25% of credit sales , excess of closing debtors over opening debtors ₹ 80,000 , Total sales ₹ 12,00,000. Calculate debtor's turnover ratio and average collection period.

ANSWER:
Total sales = 12,00,000
Cash sales = 25% of credit sales
Total sales = cash sales + credit sales
Cash sales = 25 / 125 x 12,00,000
= 2,40,000

Credit sales = 100/125 x 12,00,000
= 9,60,000

Closing debtors = 2,00,000

Opening debtors = 2,00,000 – 80,000
= 1,20,000

Average debtors = opening debtors + closing debtors / 2
= 1,20,000 + 2,00,000 / 2
= 1,60,000

Debtors Turnover Ratio
= credit sales / average debtors
= 9,60,000 / 1,60,000
= 6 times

Average Collection Period
= 12 / debtors turnover
= 12/6 = 2 months

MIX QUESTION (MEDIUM)

77. <u>QUESTION</u>
From the following information, calculate the value of
(a) Sales
(b) Debtors
(c) Closing stock
(d) Creditors

Debtors velocity	3 months
Stock velocity	6 months
Creditors velocity	2 months
Gross Profit	20%

Gross profit for the year is ₹ 5,00,000. Stock of the year is ₹ 20,000 more than what it was in the beginning. Bills receivables & bills payable were ₹ 60,000 & ₹ 336,667 respectively.

ANSWER:
Calculation of sales
Gross profit ratio = Gross Profit / Sales x 100

$$20 = \frac{5,00,000}{Sales} \times 100$$

Sales = 25,00,000

Calculation of debtors
Debtors velocity = Accounts Receivables / Credit Sales x 12
3 = x/25,00,000 x 12
Accounts Receivables = x = 6,25,000
Accounts Receivables = Bills Receivables + Debtors

6,25,000 = 60,000 + Debtors
Debtors = 5,65,000

Calculation of closing stock
Cost of goods sold = Sales – Gross Profit
= 25,00,000 – 5,00,000
= 20,00,000

Stock velocity = average stock / cost of goods sold x 12
6 = Avg. Stock / 20,00,000 x 12
Avg. stock = 10,00,000

Avg. stock = opening stock + closing stock / 2
10,00,000 = x + x+20,000 / 2
Opening stock = x = 9,90,000
Closing stock = x + 20,000
9,90,000 + 20,000 = 10,10,000

Calculation of creditors
Cost of goods sold = opening stock + Purchases – closing stock
20,00,000 = 9,90,000 + x – 10,10,000
Purchases = x = 20,20,000

Creditors velocity = accounts payable / credit purchases x 12
2 = accounts payable /20,20,000 x 12

Accounts payable = 3,36,667
Accounts payable = creditors + bills payable
3,36,667 = creditors + 36,667
Creditors = 3,00,000

78. QUESTION (EASY)
Alpha Ltd. has provided you the following information as on 31st March, 2024 :

Particulars	Amt. in ₹
Opening Inventory	2,28,750/-
Purchases	9,66,750/-
Closing Inventory	2,95,500/-
Sales	15,60,000/-
Sales Returns	60,000/-

Calculate lnventory Turnover Ratio and Gross Profit Ratio.

SOLUTION

Amount in ₹

A	Opening Inventory	2,28,750
B	Purchases	9,66,750
C	Closing Inventory	2,95,500
D	**Cost of Goods Sold (A+B-C)**	**9,00,000**
E	Average Inventory(A+C)/2	2,62,125
F	Inventory Turnover Ratio (times) = Cost of Goods Sold/Average Inventory (D/E)	3.43
G	Sales *Less:* Sales Return **Net Sales**	15,60,000 60,000 **15,00,000**
H	Gross Profit (Net Sales – Cost of Goods Sold) (G -D)	6,00,000

I	Gross Profit Ratio (Gross Profit/Net Sales) (H/G)	40.00%

79. QUESTION (MEDIUM)

Following Summarized Statement of Profit/Loss and Balance Sheet are provided by ABC Ltd. :

Summarized Profit/Loss account of ABC Ltd.
(For the year ended 31st March, 2023)

Particulars	Amount (in crore ₹)
Sales	144
Add: Other Income	15
Less: Cost of Sales	110.02
Gross Margin (excluding other incomes)	33.98
Operating Expenses:	
Administration:	14.36
Selling and Distribution:	5.36
Profit Before interest and Tax (EBIT)	29.26
Interest	4.01
Profit Before Tax (EBT)	25.25
Provision for Taxes	9.47
Profit after Tax (EAT)	15.78

Balance Sheets of ABC Ltd.
(As on 31st March, 2023)

Particulars	Amount (in crore ₹)
Fixed Assets (Net)	37.50
Current Assets:	
Inventory	16.64
Accounts Receivable	15.43
Cash and Bank	1.75
Less: Current Liabilities	11.25
Net Current Assets	22.57
Total Assets	60.07
Liabilities and Owner's Equity:	
Share Capital	27.00
Reserves and Surplus	6.36
Long-term Debt	26.71
Total	60.07

You are required to calculate the following ratios :
(i) Current Ratio
(ii) Liquid Ratio
(iii) Gross Profit Margin Ratio
(iv) Net Profit Margin Ratio
(v) Return on Equity. (5 marks)

ANSWER

Ratios	
(i) Current Ratio = Current Assets/Current Liabilities	(16.64+15.43+1.75)/11.25 = 3.006 times (3.01 times) Or 3.01:1
(ii) Liquidity Ratio = Liquid Assets*/Current Liabilities *Current Assets excluding Inventory	(15.43+1.75)/11.25 = 1.527 times (1.53 times) Or 1.53:1
(iii) Gross Profit Margin = Gross Profit/Net Sales *100	33.98/144* 100 = 23.60%

(iv) Net Profit Margin = Net Profit after Tax/Net Sales * 100	15.78/144 * 100 = 10.96%
(v) Return on Equity = Earning for Equity/Average Equity * 100 (In place of Average Equity, Closing Equity may be used)	15.78/33.36* 100 = 47.30% 33.36 = (27 + 6.36)

BIG FULL QUESTIONS MIX (TOUGH)

80. QUESTION

Komal is a third-generation businesswomen in the dairy business "Bharat Ghee & Co.". The business is run under the brand "Pure Ghee". The company prepares milk-based products and is known for good quality in the market. The sales are made through self-owned stores, other retailers at locations where self-owned stores are not present and online.

The business is run by Komal's family on a strategic and operational basis. However, now the business is growing at a rapid pace. There is a need to get in professional management to run the business. "Bharat Ghee & Co." hires a new CEO - Garima, who has three decades of experience in the dairy industry. Komal will now be Executive Chairman and provide a guiding role in the business. The first task that Garima has on hand is to identify issues that are hindering business growth.

Komal asks Garima to list major concerns that the business is facing :

- Lower margins where sales are made through other retailers and online. Online platforms are charging a big commission for making sales.
- High chance of spoilage due to perishable nature of the raw material. Due to perishable nature of material - inventories are kept at a negligible level.
- Capacity increase may be necessitated in the near future for which capital will have to be raised.

Garima requests the Accounts Head - Naina for key financial metrics of "Bharat Ghee & Co". Naina provides the following details to Garima :

Key Financials of Bharat Ghee & Co :

Credit Revenue (₹)	80,00,00,000/-
Cash Revenue	20% of total sales
Gross Profit ratio	30%
Indirect expenses (₹)	10,00,00,000/-
Tax rate	25%
Interest on debt	12%
Interest amount (₹)	12,00,00,000/-
Debt to equity ratio	2:1

Garima does some quick calculations to derive Return on Equity and Return on Capital Employed. Komal indicates willingness to contribute fresh equity in the business and payoff the loans. However, Garima is not in favour of repayment of loans.

Garima has made a business plan to change the strategy to decrease dependence from third party vendors. The new plan recommends creation of infrastructure to enable sales at locations which are serviced by channel partners. A new strategic business unit is to be created for implementation of the business plan.

The following infrastructure facilities need to be created :

Items	**(₹)**
Cold chain warehousing facility	15,00,00,000
New trucks	5,00,00,000
Office premises	3,00,00,000
Furniture and computers	1,00,00,000

- The aforementioned infrastructure will be set up using debt and equity in the ratio of 2 : 1. The new debt will be raised at a rate of 14%.

- The average depreciation will be 30%.
- The above investment and raising of debt will be done on October 1. The organization follows an April to March financial year.

- The average receivables at the end of the financial year from the new business will be ₹ 10,80,00,000/-. The receivables turnover days will be 45 days. Assume 180 days to calculate receivables turnover ratio.
- The gross profit margin will be 20%.
- Indirect expenses other than depreciation will be ₹ 2,00,00,000/-.
- lncome tax rate is 25%.

Komal asks for the projected P&L before approving the required investment amount :
(a) Calculate current Net Profit Margin, Return on Equity and Return on Capital Employed.
(b) lf debt is paid off using fresh equity, what will be new Net Profit Margin and Return on Equity ? Assume debt is repaid on first day of financial year. Comment on change in return on equity.
(c) Prepare the projected Profit & Loss Account of the new business unit.

SOLUTION

Answer No. (a)

Calculation of Net Profit Margin, Return on Capital Employed and Return on Equity

Amount in ₹

Cash Sales	20% of total sales	20,00,00,000
Credit Sales	80% of total sales	80,00,00,000
Total Sales		**1,00,00,00,000**
Gross Profit	30% of total sales	30,00,00,000
Less: Indirect Expenses		10,00,00,000
Profit Before Interest and Tax (PBIT)		**20,00,00,000**
Less: Interest on Debt	@12%	12,00,00,000
Profit Before Tax (PBT)		8,00,00,000
Less: Tax	@25%	2,00,00,000
Profit after Tax (PAT)		**6,00,00,000**
Debt (A)	Interest/ Interest rate	1,00,00,00,000
Equity (B)		50,00,00,000
Total Capital Employed (A+B)		**1,50,00,00,000**
Net Profit Margin	$\frac{Profit\ after\ Tax}{Total\ Sales}$	**6%**
Return on Equity	$\frac{(PBIT)}{Total\ Capital\ Employed}$	**13.33%**

Answer (b)

Impact on Return on equity if debt is repaid

Amount in ₹***)***

Cash Sales	20,00,00,000
Credit Sales	80,00,00,000
Total Sales	**1,00,00,00,000**
Gross Profit	30,00,00,000
Less: Indirect Expenses	10,00,00,000
Profit Before Interest and Tax (PBIT)	**20,00,00,000**
Less: Interest	Nil
Profit Before Tax (PBT)	20,00,00,000

Tax@25%	5,00,00,000
Profit after Tax (PAT)	**15,00,00,000**
Total Equity	**1,50,00,00,000**
$\textbf{Net Profit Margin} = \frac{\textbf{Profit after Tax}}{\textbf{Total Sales}}$	**15.00%**
$\textbf{Return on Equity} = \frac{\textbf{Profit after Tax}}{\textbf{Total Equity}}$	**10.00%**

Comment on change in return on equity

The return on equity has declined from 12% to 10% on repayment of debt. Since there is no interest expense as debt is now not available in the balance sheet, the decline in return on equity ratio has occurred.

Answer (c)

Projected P&L A/c of the New Business Unit

Amount in ₹

Turnover (WN-i)	**43,20,00,000**
Gross Profit (20% of the Turnover)	8,64,00,000
Less: Depreciation **(WN-ii)**	3,60,00,000
Less: Other Indirect Expenses	2,00,00,000
Profit before interest and taxes	**3,04,00,000**
Less: Interest	1,12,00,000
Profit before taxes	**1,92,00,000**
Income tax	48,00,000
Profit after tax	**1,44,00,000**

Working Notes (WN):

i. Turnover

Average receivables	₹ 10,80,00,000
Receivable days	45
Receivable turnover 180/45	4
Turnover	₹ **43,20,00,000**

ii. Calculation of capital investment and depreciation

(Amount in ₹***)***

Cold chain warehousing facility	15,00,00,000
New trucks	5,00,00,000
Office premises	3,00,00,000
Furniture and computers	1,00,00,000
Total	24,00,00,000
Depreciation	30%
Months of usage	6
Depreciation	**3,60,00,000**

iii. Capital structure and interest amount

(Amount in ₹***)***

Debt	16,00,00,000
Equity	8,00,00,000
Interest	14%
Interest amount (for six months)	**1,12,00,000**

TIME VALUE OF MONEY

FUTURE VALUE OF ANNUITY (EASY)

81. QUESTION

Assume someone decides to invest $125,000 per year for the next five years in an annuity they expect to compound at 8% per year. What will be the expected future value of this payment stream?

ANSWER:

$$Ordinary\ Annuity = Annuity \times \left[\frac{(1+i)^n - 1}{i}\right]$$

$$= 1{,}25{,}000 \times \left[\frac{(1+0.08)^5 - 1}{0.08}\right]$$

$$= 1{,}25{,}000 \times \left[\frac{1.4693 - 1}{0.08}\right]$$

$$= 1{,}25{,}000 \times 5.86625$$

$$= 7{,}33{,}281/-$$

82. QUESTION (EASY)

Rita wants to invest her savings in certain annuity plans. Amount to be invested is ₹ 2,00,000 per annum for next five years. The investment is expected to compound at 10% p.a. Calculate future value :

(i) Assuming investments are made at the end of year.

(ii) Assuming investments are made at the beginning of year. (JUNE 25)

ANSWER:

(i) Assuming investment made at end of year

$$Future\ Value = Investment \times \frac{[(1 + return\%)^N - 1]}{Return\ \%}$$

$$Future\ Value = Rs.\,2{,}00{,}000 \times \frac{[(1+10\%)^5 - 1]}{10\ \%} = \boldsymbol{Rs.\,12,21,020/-}$$

(ii) Assuming investment made at beginning of year

$$Future\ Value = Investment \times \frac{[(1 + return\%)^N - 1]}{Return\ \%} \times (1 + r)$$

$$Future\ Value = Rs.\,2{,}00{,}000 \times \frac{[(1+10\%)^5 - 1] \times (1+10\%)}{10\ \%} = \boldsymbol{Rs.\,13,43,122/-}$$

83. QUESTION (ADVANCED)

A company wants to invest $3,500 every six months for four years to purchase a delivery truck. The investment will be compounded at an annual interest rate of 12% per annum. The initial investment

will be made now, and thereafter, at the beginning of every six months. What is the future value of the cash flow payments?

ANSWER:

$$FV\ of\ Cash\ Flow\ (Annuity\ Due) = Annuity \times \frac{(1+\frac{i}{2})^{n\times 2}-1}{(\frac{i}{2})}\left(1+\frac{i}{2}\right)$$

$$= 3{,}500 \times \frac{(1+\frac{0.12}{2})^{4\times 2}-1}{(0.12)}\left(1+\frac{0.12}{2}\right)$$

$$= 3{,}500 \times \frac{(1+0.06)^{8}-1}{0.06}(1+0.06)$$

$$= 3{,}500 \times \frac{1.5938-1}{0.06}(1+0.06)$$

$$= 3{,}500 \times (9.8967 \times 1.06)$$

$$= 3{,}500 \times 10.4905$$

$$= 36{,}716.75/-$$

FUTURE VALUE OF ANNUITY (ADVANCED)

84. QUESTION

Find the future value of ₹100,000 for 15 years. The current five-year rate is 6%. Rates for the second and third five-year periods and expected to be 6.5% and 7.5%, respectively.

ANSWER:

$FV = PV(1+i)^n(1+i)^n(1+i)^n$
$= 1{,}00{,}000(1+0.06)^5(1+0.065)^5(1+0.075)^5$
$= 1{,}00{,}00 \times 1.3382 \times 1.3701 \times 1.4356$
$= 2{,}63{,}213/-$

PRESENT VALUE OF ANNUITY (EASY)

85. QUESTION

An individual makes rental payments of $1,200 per month and wants to know the present value of their annual rentals over a 12-month period. The payments are made at the start of each month. The current interest rate is 8% per annum.

ANSWER:

$$PV\ of\ Annuity = Annuity \times \frac{1-\frac{1}{(1+i)^n}}{i}$$

$$= 1{,}200 \times \frac{1-\frac{1}{(1+\frac{0.08}{12})^{1\times 12}}}{(\frac{0.08}{12})}$$

$$= 1{,}200 \times \frac{1-0.9230}{0.0067}$$

$$= 1{,}200 \times \left(\frac{0.077}{0.0067}\right)$$

$$= 1{,}200 \times 11.4925$$
$$= 13{,}791/-$$

PRESENT VALUE OF ANNUITY (EASY)

86. QUESTION

How much would you have to deposit today to have $10,000 in five years at 6% interest discounted quarterly?

ANSWER:

$$PV = \frac{FV}{(1+\frac{i}{4})^{n\times 4}}$$

$$= \frac{10{,}000}{(1+\frac{0.06}{4})^{20}}$$

$$= \frac{10{,}000}{(1.015)^{20}}$$

$$= \frac{10{,}000}{1.3468}$$

= ₹7,425/-

PRESENT VALUE OF SINGLE CASH FLOW (EASY)

87. QUESTION

What is the present value of $1,000 received in two years if the interest rate is?
(a) 12% per year discounted annually.
(b) 12% per year discounted semi-annually.
(c) 12% per year discounted daily

ANSWER:

(a)

$$PV = \frac{FV}{(1+i)^n}$$

$$= \frac{1{,}000}{(1+0.12)^2}$$

$$= \frac{1{,}000}{1.2544}$$

= 797/-

$$\frac{12}{1.12} = 0.12$$

(b)

$$PV = \frac{FV}{\left(1+\frac{i}{2}\right)^{n\times 2}}$$

$$= \frac{1{,}000}{\left(1+\frac{0.12}{2}\right)^{2\times 2}}$$

$$= \frac{1{,}000}{1.2625}$$

= 792/-

I = 1,000 – 797
= 203

I = 1,000 – 792
= 208

(c)

$$PV = \frac{FV}{\left(1+\frac{i}{365}\right)^{n\times 365}}$$

$$= \frac{1{,}000}{\left(1+\frac{0.12}{365}\right)^{2\times 365}}$$

$$= \frac{1{,}000}{(1+0.000329)^{730}}$$

$$= \frac{1{,}000}{1.27133}$$

= 787/-

I = 1,000 – 787
= 213

PRESENT VALUE OF PREPETUITY (EASY)

88. QUESTION

Magnificent Limited pays $2 in dividends annually and estimates that they will pay the dividends indefinitely. How much are investors willing to pay for the dividend with a required rate of return of 5%?

ANSWER:

$$PV\ of\ Perpertaity = \frac{CF}{r}$$

$$= \frac{2}{5\%}$$

= 40

EMI

89. QUESTION

Suppose a firm borrows ₹1,000,000 at an interest rate of 15 percent and the loan is to be repaid in 5 equal instalments payable at the end of each of the next 5 years. The annual instalment payment.

ANSWER:

$$Loan\ amount = A \times PVIFA_{n=5,r=15\%}$$

1,000,000 = A × 3.3522
Hence A = 298,312

CAPITAL BUDGETING

PAYBACK PERIOD METHOD (EASY BUT LENGTHY)

90. QUESTION

The following are the details relating to two projects:

	Project X (Rs.)	Project Y (Rs.)
Cost of Project	1,60,000	2,00,000
Estimated Scrap	16,000	24,000
Estimated Savings:		
1st year	20,000	40,000
2nd year	30,000	60,000
3rd year	50,000	60,000
4th year	50,000	60,000
5th year	40,000	30,000
6th year	30,000	20,000
7th year	10,000	-

Calculate Payback Period and consider which project is better.

ANSWER:

Statement showing Cumulative Saving of Project X:

Yr.	Annual Savings	Cumulative Savings
1	20,000	20,000
2	30,000	50,000
3	50,000	1,00,000
4	50,000	1,50,000
5	40,000	1,90,000
6	30,000	2,20,000
7	26,000	2,46,000

Interpolation:- (PBP)

$$PBP = E + \frac{B}{C}$$

$$= 4 + \left[\frac{1,60,000 - 1,50,000}{40,000} \times 1\right]$$

= 4.25 yrs. i.e. 4 years 3 months (0.25 × 12)

Statement showing Cumulative Savings of Project Y.

Yr.	Savings (₹)	Cumulative
1	40,000	40,000
2	60,000	1,00,000
3	60,000	1,60,000
4	60,000	2,20,000
5	30,000	2,50,000
6	44,000 (20000 + 24,000)	2,94,000

$$PBP = E + \frac{B}{C}$$

$$= 3 + \left[\frac{2,00,000 - 1,60,000}{60,000} \times 12\right]$$

= 3 yrs. 8 months

As payback period of Project Y is less than that of Project X; Project Y should be selected.

IRR METHOD: (LENGTHY AND TOUGH)

91. QUESTION

A project costs Rs. 10,000 and cash inflows in the first, second, third and fourth years respectively is Rs. 2,000, Rs. 3,000, Rs. 5,000 and Rs. 6,000. Calculate time adjusted rate of return for the project.

ANSWER:

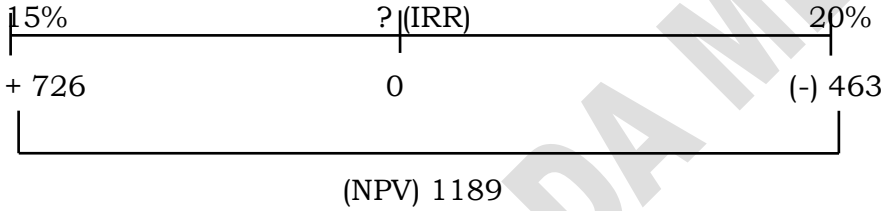
PV of CI/NPV is Inventory related to Discount Rate.

Year	CI	PVF @ 20%	PV of CI
1	2,000	0.8333	1,666.6 +
2	3,000	0.6944	2,083.2 +
3	5,000	0.5787	2,893.5 +
4	6,000	0.4823	2,893.8 +
			9,537.1 MRC

$\therefore NPV = 9537 - 10{,}000 = -463$

Yr.	CI	PVF @ 15%	PV of CI
1	2,000	0.8696	1,739.2 +
2	3,000	0.7561	2,268.3 +
3	5,000	0.6575	3,287.5 +
4	6,000	0.5718	3,430.8 +
	10		10,725.8 MRC

NPV = 10,726 – 10,000 = + 726



By Interpolation:-

$$IRR = 15\% + \left[\frac{726 - 0}{726 + 463} \times 5\%\right]$$

$= 15\% + 3.05\%$

$= 18.05\%$

DISCOUNTED PAYBACK PERIOD METHOD (MEDIUM)

92. QUESTION

Calculate discounted payback period from the information given below:
Cost of Project Rs. 10,00,000
Life 5 years
Annual Cash inflow Rs. 4,00,000
Cut-off Rate 10%.

ANSWER:

Statement showing cumulative discounted Cash Inflows:

Yr. 1	CI	(1) PVF @ 10%	(2) Disc. CI	(3) Cumulative DCF.
1	4,00,000	0.909	= 3,63,600 M+	3,63,600 MRC
2	4,00,000	0.826	= 3,30,400 M+	6,94,000 MRC
3	4,00,000	0.751	= 3,00,400 M+	9,94,400 MRC

4	4,00,000	0.683	= 2,73,200 M+	12,67,600 MRC
5	4,00,000	0.621	= 2,48,400 M+	15,16,000

$$Payback\ Period = E + \frac{B}{C}$$

$$= 3 + \left[\frac{10,00,000 - 9,94,400}{2,73,200} \times 1\right]$$

= 3.0205 yrs.
0.205 × 12 = 0.246 months
0.246 × 30 = 7 days
i. e. 3 yrs. 7 days

NPV & IRR (EVEN CASH FLOWS) (LENGTHY)

93. QUESTION

The management of a company has two alternative projects under consideration. Project A requires a capital outlay of ₹ 1,20,000 but Project B needs ₹ 1,80,000. Both are estimated to provide a cash flow for five years:
A – ₹ 40,000 per year and B – ₹ 58,000 per year. The cost of capital is 10%. Show which of the two projects is preferable from the viewpoint of (i) Net Present Value; and (ii) Internal rate of Return.

ANSWER:

(1) NPV:-

Project A:-

NPV = Sum of PV of CI – Co.
$= (Annual\ CI\ \times AF\ @10\%\ for\ 5\ yrs.) - Co.$
= (40,000 × 3.7908) – 1,20,000
= 1,51,632 – 1,20,000
= + 31,632/-

Project B:-

NPV = Sum of PV of CI – Co.
= (58,000 × 3.7908) – 1,80,000
= 2,19,866.4 – 1,80,000
= + 39,866.4

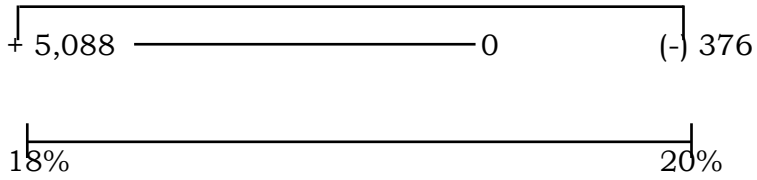
As Project B has higher NPV than Project A; Project B should be selected.

(2) IRR:-

$$A = \frac{1,20,000}{40,000} = 3$$

Project A:-

$NPV@20\% = (40,000 \times 2.9906) - 1,20,000 = -376$
$NPV@18\% = (40,000 \times 3.1272) - 1,20,000$
= 1,25,088 – 1,20,000
= + 5,088



By Interpolation:

$$IRR = 18\% + \left[\frac{5,088 - 0}{5,088 + 376} \times 2\%\right]$$

= 18% + 1.86%

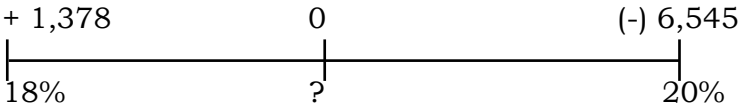
= 19.86%

Project B:-

$$AF = \frac{1,80,000}{58,000} = 3.10$$

$NPV@18\% = (58,000 \times 3.1272) - 1,80,000$
= 1,81,378 – 1,80,000
= + 1,378

$NPV@20\% = (58,000 \times 2.9906) - 1,80,000$
= 1,73,455 – 1,80,000
= 6,545



By Interpolation:

$$IRR = 18\% + \left[\frac{1,378 - 0}{1,378 + 6,545} \times 2\%\right]$$

= 18% + 0.35%
= 18.35%
As IRR of Project A is more than that of Project B; Project B is preferable.

94. QUESTION

Equipment A has a cost of ₹75,000 and net cash flow of ₹20,000 per year for six years. A substitute equipment B would cost ₹50,000 and generate net cash flow of ₹14,000 per year for six years. The required rate of return of both equipments is 11 per cent. Calculate :

— Net Present Value and Profitability Index for the both equipments.
— Which equipment should be accepted and why ?

Present Values of Rupee 1 at 11% are :

Year	1	2	3	4	5	6
PV of 1	0.901	0.812	0.731	0.659	0.593	0.535

SOLUTION

Equipment A :

NPV = 20,000 × (PVAF6, 0.11) – 75,000
= 20,000 × 4.231 – 75,000
= 84,620 – 75,000
= ₹9,620

Profitability Index= Present Value of Cash Inflows/Initial Cost 84,620/75000= 1.128

Equipment B:

NPV = 14,000 × PVAF6, 0.11 – 50,000
= 14,000 × 4.23 1 – 50,000
= 59,234 – 50,000
= ₹9,234

Profitability Index— Present Value of Cash Inflows/Initial Cost.

59234/50000= 1.185

As per NPV project A is to be preferred over project B. But as per PI technique Project B is to be preferred. The NPV decision should be preferred unless there is a capital rationing. If the firm has funds of ₹75,000 to invest, then project A should be adopted. This will result in increase in shareholders wealth to the extent of ₹9,620 against project B which will increase the wealth only by ₹9,234.

95. QUESTION

An investor is considering purchase of a new investment for ₹15,00,000. The Investor has two options – Option M and Option N and their expected cash inflow are as below :

Year	Option M (Amount in ₹)	Option N (Amount in ₹)
1	1,52,000	3,45,000
2	2,36,000	7,25,000
3	7,00,000	8,00,000
4	5,00,000	3,00,000
5	3,57,000	10,00,000

The investor has a target return of 12%. Risk premium rates are 3% for Investment Option M and 7% for Investment Option N.

Discount factors	10.00%	12.50%	15.00%	18.00%	19.00%
1	0.909	0.889	0.870	0.847	0.840
2	0.826	0.790	0.756	0.718	0.706
3	0.751	0.702	0.658	0.609	0.593
4	0.683	0.624	0.572	0.516	0.499
5	0.621	0.555	0.497	0.437	0.419

Which investment should be preferred ?

SOLUTION

Option M				Option N			
Discount Rate	**15.00%**	**Present Value Factor (PVF)**	**Present Value PV (₹)**	**Discount Rate**	**19.00%**	**Present Value Factor (PVF)**	**Present Value PV (₹)**
Year				**Year**			
1	1,52,000	0.870	1,32,240	1	3,45,000	0.840	2,89,800
2	2,36,000	0.756	1,78,416	2	7,25,000	0.706	5,11,850
3	7,00,000	0.658	4,60,600	3	8,00,000	0.593	4,74,400
4	5,00,000	0.572	2,86,000	4	3,00,000	0.499	1,49,700
5	3,57,000	0.497	1,77,429	5	10,00,000	0.419	4,19,000
			12,34,685				18,44,750
		Outflow	-15,00,000				-15,00,000
		NPV	**-2,65,315**				**3,44,750**

Investor will prefer option N for Investment due to higher NPV

CERTAINITY CO-EFFICIENT METHOD (EASY)

96. QUESTION

There are two projects X and Y. each involves an investment of Rs. 40,000. The expected cash inflows and the certainly coefficients are as under:

Year	Project X		Project Y	
	Cash Inflow	Certainty Coefficient	Cash Inflow	Certainty Coefficient
	Rs.		Rs.	
1	25,000	0.8	20,000	0.9
2	20,000	0.7	30,000	0.8
3	20,000	0.9	20,000	0.7

Risk-free cut-off rate is 10%. Suggest which of the two projects should be preferred.

ANSWER:

Calculations of Cash Inflows with Certainty

Year	Project X			Project Y		
	Cash Inflow	Certainty Coefficient	Certain Cash Inflow	Cash Inflow	Certainty Coefficient	Certain Cash Inflow
	Rs.		Rs.	Rs.		Rs.
1	25,000	0.8	20,000	20,000	0.9	18,000
2	20,000	0.7	14,000	30,000	0.8	24,000
3	20,000	0.9	18,000	20,000	0.7	14,000

Calculations of Present Values of Cash Inflows

Year	Discount Factor @ 10%	Project X		Project Y	
		Cash Inflows	Present Values	Cash Inflows	Present Values
1	0.909	20,000	18,180	18,000	16,362
2	0.826	14,000	11,564	24,000	19,824
3	0.751	18,000	13,518	14,000	10,514
			43,262		46,700

	Project x	Project y
Net Present Value	= Rs. 43,262-40,000	46,700-40,000
	= Rs. 3,262	Rs. 6,700

As the net present value of present Y is more than that of Project X, Project Y should be preferred.

PROBABILITY METHOD: (MEDIUM)

97. QUESTION

Two mutually exclusive investment proposals are being considered. The following information is available:

	Project A (Rs.)		Project B (Rs.)	
Cost	6,000		6,000	
	Cash Inflow			
Year	Rs.	Probability	Rs.	Probability
1	4,000	0.2	7,000	0.2
2	8,000	0.6	8,000	0.6
3	12,000	0.2	9,000	0.2

Assuming cost of capital at 10%, advice for the selection of the project.

ANSWER:

Calculation of the Net Present Values of the Two Projects

			Project X	Project Y					

Year	P.V. Factor @ 10%	Cash Inflows Rs.	Probability	Monetary Value Rs.	Present Value Rs.	Cash Inflows Rs.	Probability	Monetary Value Rs.	Present Value Rs.
1	0.909	4,000	0.2	800	727	7,000	0.2	1.400	1,273
2	0.826	8,000	0.6	4,800	3,965	8,000	0.6	4,800	3,965
3	0.751	12,000	0.2	2,400	1,802	9,000	0.2	1,800	1,352

Total Present Value	6,494	6,590
Total Present value	6,494	6,590
Less: Cost of Investment	6,000	6,000
Net Present Value	**494**	**590**

As net present value of Project Y is more than that of Project X after taking into consideration those probabilities of cash inflows, Project Y is more profitable.

RADR METHOD: (EASY)

98. QUESTION

SK & ABC Company Ltd. is considering the purchase of a new investment. Two alternative investments are available (A and B) each costing Rs. 1,00,000. Cash inflows are expected to be as follows:

Cash Inflows	Investments A	Investment B
Years	Rs.	Rs.
1	40,000	50,000
2	35,000	40,000
3	25,000	30,000
4	20,000	30,000

The company has a target return on capital of 10%. Risk premium rates are 2% and 8% respectively for investments A and B. Which investment should be preferred?

ANSWER:

The profitability of the two investments can be compared on the basic of net present values cash inflows adjusted for risk premium rates as follows:

	Investment A			Investment B		
Year	Discount Factor @ 10%+2%=12%	Cash Inflow Rs.	Present Value Rs.	Discount Factor @ 10%+8%=18%	Cash Inflows Rs.	Payment Value Rs.
1	0.893	40,000	35,720	0.847	50,000	42,350
2	0.797	35,000	27,895	0.718	40,000	28,720
3	0.712	25,000	17,800	0.609	30,000	18,270
4	0.635	20,000	12,700	0.516	30,000	15,480
			94,115			1,04,820

Investment A

Net Present value = Rs, 94,115 – 1,00,000
= Rs. (-) 5,885

Investment B
Net Present value = Rs. 1,04,820 – 1,00,000
= Rs. 4,820

As even at a higher discount rate investment B gives a higher net present value, investment B should be preferred.

MIX QUESTION (TOUGH)

99. Vishal is a Mechanical Engineer with over three decades of experience. After completion of his graduation, he has worked in the global oil and gas industry for various companies as an employee. Given his vast experience in the energy sector; Vishal is often invited to various conferences on the oil and gas industry. One such conference was on "Areas of opportunities common to all include the India growth story" given the demographic dividend and energy independence.

Vishal recognizes the huge potential of the oil and gas sector in India and sets up an engineering and construction company M/s. Mid-Stream & Co., based in Kolkata.
The first bid for the project is a gas pipeline for a Government Company. The initial outlay for the project is ₹ 5,75,00,000.

The duration of the project is five years. The expected cash inflows from the project are given below :

Year	₹
1	1,75,00,000
2	1,95,00,000
3	1,90,00,000
4	2,85,00,000
5	2,40,00,000

The acceptable rate of return for M/s. Mid-Stream & Co. is 15%.
Anuja, CFO of M/s. Mid-Stream & Co. recommends a risk premium of 3% over and above the acceptable rate of 15% given the risky nature of the project.

Vishal estimates duration to recover the initial cost of the project. Anuja mentions that it would be prudent to use discounted cash flows for such calculations. A risk management perspective also would involve a more conservative approach in terms of Cash Flow estimation. Anuja mentions that the firm needs to make more conservative estimates of cash flow using the Certainty Equivalent technique with a discount rate of 15% to be used. Cash Flows from Government project with Certainty Coefficients :

Year	₹	Certainty Coefficients
1	1,75,00,000	0.90
2	1,95,00,000	0.88
3	1,90,00,000	0.85
4	2,85,00,000	0.81
5	2,40,00,000	0.65

Calculate :
(i) NPV of gas pipeline bid for the Government Company. Give your recommendation regarding acceptability of the project.
(ii) Payback period, post payback profitability index and discounted payback period.
(iii) NPV of the Government project, after application of Certainty Coefficients. (JUNE 25)

Present Value Factors are given below :

Years	0	1	2	3	4	5

Discount rate						
15%	1	0.87	0.76	0.66	0.57	0.50
18%	1	0.85	0.72	0.61	0.52	0.44

ANSWER:

Answer(i)

Step 1: Zero year cash outflow:

	(₹)
Initial outlay	5,75,00,000/-
	5,75,00,000-

Step 2: Appropriate Discount rate:

Acceptable return	15%
Risk Premium	3%
Discount rate	18%

Step 3: Calculation of NPV:

Years	**0**	**1**	**2**	**3**	**4**	**5**
Discount rate						
18%	1	0.85	0.72	0.61	0.52	0.44
Cash flows (In ₹)	-	1,75,00,000	1,95,00,000	1,90,00,000	2,85,00,000	2,40,00,000
NPV @ 18% (In ₹)	**-5,75,00,000**	**1,48,75,000**	**1,40,40,000**	**1,15,90,000**	**1,48,20,000**	**1,05,60,000**
Total Present value of inflows (In ₹)	Cash Outflow – Cash Inflow (1+2+3+4+5) – 0 ₹6,58,85,000 – ₹5,75,00,000					**83,85,000**

(Discounted rate rounded off to nearest two decimal)

Since project has generated positive NPV of ₹ 83,85,000/-, project can be accepted.

Answer (ii)

Step 1: Payback Period

Year	**Cash Inflows (In ₹)**	**Cumulative Cash Inflows (In ₹)**
1	1,75,00,000	1,75,00,000
2	1,95,00,000	3,70,00,000
3	1,90,00,000	5,60,00,000
4	2,85,00,000	8,45,00,000
5	2,40,00,000	10,85,00,000

Payback Period	=	(Year preceding final recovery year)	+	(Balance to be recovered)/(Cash Flow during final year of recovery)

Payback Period	=	3	+	(₹5,75,00,000 – ₹5,60,00,000)/ ₹2,85,00,000)
Payback Period	=			3.05 years

Step 2: Post Payback Profitability

Post Payback Profitability	=	Total Cash Inflows	-	Investment Outlays
Post Payback Profitability	=	₹10,85,00,000	-	₹5,75,00,000
Post Payback Profitability	=	₹5,10,00,000		

Step 3: Post Payback Profitability Index

$$Post\ Payback\ Profitability\ Index = \frac{Post\ Payback\ Profitability}{Investment\ Outlay} = \frac{5,10,00,000}{5,75,00,000} = 88.70\%$$

Step 4: Discounted Payback Period

Discounted Cash Inflows (in ₹)	
	Cumulative cash flows
1,48,75,000	1,48,75,000
1,40,40,000	2,89,15,000
1,15,90,000	4,05,05,000
1,48,20,000	5,53,25,000
1,05,60,000	6,58,85,000
Cash outflows	5,75,00,000

Discounted Payback Period	=	(Year preceding final recovery year)	+	(Balance to be recovered)/(Cash Flow during final year of recovery)	
Discounted payback Period	=	4	+	(₹5,75,00,000 – ₹5,53,25,000)/ ₹1,05,60,000	= 4.21 years

Answer (iii)

Year	**Cash inflows (₹)**	**Certainty Coefficients**	**Certain Cash Flows (₹)**	**PVF @ 15%**	**NPV ()**
0	-5,75,00,000	1	-5,75,00,000	1	-5,75,00,000
1	1,75,00,000	0.9	1,57,50,000	0.87	1,37,02,500
2	1,95,00,000	0.88	1,71,60,000	0.76	1,30,41,600
3	1,90,00,000	0.85	1,61,50,000	0.66	1,06,59,000
4	2,85,00,000	0.81	2,30,85,000	0.57	1,31,58,450
5	2,40,00,000	0.65	1,56,00,000	0.50	78,00,000
					8,61,550

As the project NPV is yet positive, project can be accepted.

COST OF CAPITAL

COST OF DEBT CAPITAL (MEDIUM)

100. QUESTION

SK Co. is willing to issue 1,000 7% Debentures of Rs. 100 each and for which the company will have to incur the following expenses:

Underwriting commission 1.5% Brokerage 0.5% Printing and Other Expenses Rs. 500. Assuming tax rate at 50% find out the cost of debt capital.

ANSWER:

$$\text{Kd (After Tax)} = \frac{i\,(1-t)}{NP} \times 100$$

$$= \frac{(100 \times 7\%)(1-0.5)}{100 - (1.5\% \times 100) - (0.5\% \times 100) - \left(\frac{500}{1000}\right)} \times 100$$

$$= \frac{7(1-0.5)}{100 - 1.5 - 0.5 - 0.5} \times 100$$

$$= \frac{3.5}{97.5} \times 100$$

$$= 3.59\%$$

COST OF PREFERENCE SHARES:

101. QUESTION

SK Ltd. has issued 8% 10,000 Preference Shares of Rs. 100 each and has incurred the following expenses:

Underwriting Commission 2%, Brokerage 1%, Other Expenses Rs. 5,000. If the present company tax rate is 50%, what will be the cost of capital after tax and before tax?

Also calculate cost of preference capital, if corporate dividend tax is 10%.

ANSWER:

(1) AFTER TAX

$$NP = 100 - (2\% \times 100) - (1\% \times 100) - \left(\frac{5{,}000}{10{,}000}\right)$$

$$= 100 - 2 - 1 - 0.5$$

$$= 96.5$$

$$KP\ (After\ Tax) = \frac{PD}{NP} \times 100$$

$$= \frac{(100 \times 8\%)}{96.5} \times 100$$

$$= 8.29\%$$

$$(2) KP\ (Before\ Tax) = \frac{Kd\ (After\ Tax)}{(1-t)}$$

$$= \frac{8.29\%}{(1-0.5)}$$

= 16.58%

$$(3) KP\ (After\ Tax) = \frac{PD\ (1 + D_t)}{NP} \times 100$$

$$= \frac{(100 \times 8\%)(1 + 0.1)}{96.5} \times 100$$

$$= \frac{8.8}{96.5} \times 100$$

= 9.12%

COST OF NEW EQUITY SHARE CAPITAL ISSUED:

102. QUESTION

Calculate cost of new equity capital issue from the following information:

Face value of share	= Rs. 100
Market value	= Rs 105
Securities premium	= Rs. 3 per share
After-tax net earnings	= Rs. 10.50 per share
Cost of issue	= Rs. 3 per share
Tax Rate	= 50%

ANSWER:

(1) Issue Price = FV + SP = 100 + 3 = 103

$$(2)\ Earnings\ Price\ Method = \frac{EPS}{NP} \times 100$$

$$= \frac{10.50}{103 - 3} \times 100$$

$$= \frac{10.50}{100} \times 100$$

= 10.5%

COST OF EQUITY (CAPM METHOD)

103. QUESTION

Calculate the cost of equity capital for a company whose Risk-free rate =10%, equity market required return =18% with a beta of 0.5.

ANSWER:

$$Ke = Rf + \beta(Rm - Rf)$$

$$= 10\% + 0.5(18\% - 10\%)$$

$$= 10\% + (0.5 \times 8\%)$$

= 14%

COST OF EQUITY (DIVIDEND METHOD)

104. QUESTION

SK Ltd. has issued 20,000 equity shares of Rs. 100 each as fully paid. The present market price of these shares of Rs. 160 per share. The company has paid a dividend of Rs. 8 per share. Find out the cost of equity capital.

ANSWER:

$$Ke = \frac{DPS}{MP} \times 100$$

$= \frac{8}{160} \times 100$

= 5%

COST OF EQUITY (EARNINGS METHOD)

105. QUESTION

SK Ltd. has issued 1,000 equity shares of Rs. 100 each as fully paid. It has earned a profit of Rs. 10,000 after tax. The market price of these shares is Rs. 160 per share. Find out the cost of equity capital before and after tax assuming a tax rate of 50%.

ANSWER:

$EPS = \frac{PAT}{No.\,of\ ES} = \frac{10{,}000}{1{,}000} = 10/Share$

$Ke\ (After\ Tax) = \frac{EPS}{MP} \times 100$

$= \frac{10}{160} \times 100$

= 6.25%

$Ke\ (Before\ Tax) = \frac{Ke\ (After\ Tax)}{(1-t)}$

$= \frac{6.25\%}{(1-0.5)}$

= 12.5%

WACC (MARKET VALUE WEIGHTS)

106. QUESTION

PQR Ltd. has the following capital structure on October 31, 2015:

Sources of capital	**(₹)**
Equity Share Capital (2,00,000 Shares of ₹ 10 each)	20,00,000
Reserves & Surplus	20,00,000
12% Preference Shares	10,00,000
9% Debentures	30,00,000
	80,00,000

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. Assume 40% income tax rate.

You are required to compute weighted average cost of capital using market value weights.

ANSWER:

Workings:

$(i) Cost\ of\ Equity (K_e) = \frac{D_1}{P_0} + g = \frac{Rs.3}{Rs.30} + 0.07 = 0.1 + 0.07 = 0.17 = 17\%$

(ii) Cost of Debentures (Kd) = I (1 – t) = 0.09 (1 – 0.4) = 0.054 or 5.4%

Computation of Weighted Average Cost of Capital (WACC using market value weights)

Sources of capital	**Market Value of capital (₹)**	**Weight**	**Cost of capital (%)**	**WACC (%)**
9% Debentures	30,00,000	0.30	5.40	1.62
12% Preference Shares	10,00,000	0.10	12.00	1.20

Equity Share Capital (₹ 30 × 2,00,000 shares)	60,00,000	0.60	17.00	10.20
Total	**1,00,00,000**	**1.00**		**13.02**

WACC (BOOK VALUE WEIGHTS)

107. QUESTION

The capital structure of a company and its specific costs are given below. Find out simple and the weighted average cost of capital of the company.

Source	**Amount**	**Specific Cost** (after tax)
Long-term Debts	Rs. 15,00,000	4%
Preference Shares	10,00,000	12%
Equity Shares	20,00,000	15%
Retained Earnings	5,00,000	15%
		50,00,000

ANSWER:

(1)$Simple\ Average\ Cost\ of\ Capital = \frac{4\% + 12\% + 15\% + 15\%}{4}$

= 11.5%

(2) Weighted Average Cost of Capital (Book Value)

Sources	Amount	Weights	Cost (%)	Cost × Weight %)
LTD	15,00,000	0.3	4	1.2%
PSC	10,00,000	0.2	12	2.4%
ESC	20,00,000	0.4	15	6%
RE	5,00,000	0.1	15	1.5%
	50,00,000	1		11.1%

$\therefore WACC = 11.1\%$

WACC (TARGET WEIGHTS)

108. QUESTION

The capital structure of a company and its specific costs are given below.

Source	**Amount**	**Specific Cost** (after tax)
Long-term Debts	Rs. 15,00,000	4%
Preference Shares	10,00,000	12%
Equity Shares	20,00,000	15%
Retained Earnings	5,00,000	15%
		50,00,000

the firm believed that its optimal capital structure is consisting of 40% debt, 10% preference shares, 35% equity shares and 15% retained earnings, calculate weighted average cost ofcapital using target weights.

ANSWER:

Computation of WACC using Target Weights:

Sources	Weights	Costs (%)	Weights × Costs (%)
Debt	0.4	4%	1.6%
PSC	0.1	12%	1.2%
ESC	0.35	15%	5.25%
RE	0.15	15%	2.25%
	1		10.3%

COST OF CAPITAL MIX

109. QUESTION

The following is an extract from the financial statement of XYZ Ltd :

	(₹ in lakh)	(₹ in lakh)
Operating Profit	105	
Less: Interest on debentures	33	72
Less: Income Tax (30%)		21.6
Net Profit		50.4
Equity share capital (shares of 10 each)	200	
Reserves and surplus	100	
15% non-convertible debentures (of ₹100 each)	220	520

The market price per equity share is ₹12 and per debenture ₹93.75. Calculate :
(i) EPS
(ii) Percentage cost of capital to the company for the debenture funds and the equity.

SOLUTION

i) Calculation of earnings per share:

$$Earnings\ per\ share\ (EPS) = \frac{Profit\ after\ tax}{No.\ of\ equity\ shares}$$

5040000/2000000= ₹2.52

ii) Computation of Percentage Cost of Capital:

(a) Cost of Equity Capital = Cost of Equity (Ke) = D / MP

Ke (%) = 2.52/12 × 100 = 21%

(b) Cost of Debenture Funds:	At Book Value (₹ in lakh)	At Market Price (₹ in lakh)
Value of 15% Debentures	220.00	206.25
Interest Cost for the year	33.00	33.00
Less: Tax at 30%	9.90	9.90
Interest cost after tax	23.10	23.10
Cost of Debenture Fund (%)	23.10/220 × 100 = 10.50%	23.10/206.25 × 100 =11.20%

CAPITAL STRUCTURE

CAPITAL STRUCTURE THEORY NI METHOD: (EASY)

110. QUESTION

Ample limited operating income (EBIT) is Rs.5,00,000. The firm's cost of debt is 10% and currently the firm employ Rs.15,00,000 of debt. The overall cost of capital of the firm is 15%. You are required to calculate:
(i) Total value of firm
(ii) Cost of equity

ANSWER:

(1) $Value\ of\ Firm = \frac{EBIT}{k_0}$

$= \frac{5,00,000}{15\%}$

= 33,33,333

(2) Value of Firm = Value of Debt + Value of Equity

$\therefore Value\ of\ Equity = Value\ of\ firm - Value\ of\ debt$

= 33,33,333 – 15,00,000

= 18,33,333/-

(3) $Value\ of\ Equity = \frac{EBT}{k_e}$

$\therefore ke = \frac{EBT}{Value\ of\ Equity}$

$= \frac{5,00,000 - (15,00,000 \times 10\%)}{18,33,333}$

$= \frac{3,50,000}{18,33,333}$

= 0.1909 i. e. 19.09%

CAPITAL STRUCTURE THEORY NOI METHOD: (EASY)

111. QUESTION

Bliss limited has an EBIT of Rs. 4,00,000 and belongs to a risk class of 10% i.e. its overall cost of capital is 10%. What is the value and Cost of equity capital if it employees 5% debt to the extent of 30%, 40% or 50% of the total capital of Rs. 20,00,000? Assume that Net Operating Income approach applies.

ANSWER:

Particulars	30% Debt 70% Equity	40% Debt 60% Equity	50% Debt 50% Equity
(a) Debt	6,00,000	8,00,000	10,00,000
(b) Equity	14,00,000	12,00,000	10,00,000
(c) EBIT	4,00,000	4,00,000	4,00,000
(d) k_0	10%	10%	10%
(e) Value of Firm (c ÷ d)	40,00,000	40,00,000	40,00,000
(f) Value of Equity (e – a)	34,00,000	32,00,000	30,00,000
(g) Interest	30,000	40,000	50,000

(h) EBT (c – g)	3,70,000	3,60,000	3,50,000
(i) $ke[(h \div f) \times 100]$	10.88%	11.25%	11.66%

FINANCIAL BEP (EASY)

112. QUESTION

ABC Limited has the following capital structure and want to know its Financial Break Even Point

Equity shares (FV = ₹ 100)	₹ 5,00,000
12% Preference Shares (FV = ₹ 100)	₹ 5,00,000
10% Debentures (FV = ₹ 100)	₹ 10,00,000
Tax Rate	40%

ANSWER:

$$Financial\ Break-Even\ Point = Interest + \frac{Pref.Dividend}{1-t}$$

$$= (10,00,000 \times 10\%) + \frac{(5,00,000 \times 12\%)}{1-0.4}$$

$$= 1,00,000 + \frac{60,000}{0.6}$$

= 1,00,000 + 1,00,000

= 2,00,000

FINANCIAL LEVERAGE (EASY)

113. QUESTION

A Company has the following capital structure:

Particulars	₹
Equity share capital	1,00,000
10% Preference share capital	1,00,000
8% Debentures	1,25,000

The present EBIT is ₹ 50,000. Calculate the financial leverage assuming that the company is in 50% tax bracket.

ANSWER:

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

$$= \frac{50,000}{50,000 - (1,25,000 \times 8\%)}$$

$$= \frac{50,000}{50,000 - 10,000}$$

$$= \frac{50,000}{40,000}$$

= 1.25 times

OPERATING LEVERAGE (EASY)

114. QUESTION

From the following selected operating data, determine the degree of operating leverage. Which company has the greater amount of business risk? Why?

Amount in ₹

	Company A (₹)	**Company B (₹)**

Sales	25,00,000	30,00,000
Fixed costs	7,50,000	15,00,000

Variable expenses as a percentage of sales are 50% for company A and 25% for company B.

ANSWER:

Particulars	Company A	Company B
Sales	25,00,000	30,00,000
(-) Variable Cost	(12,50,000)	(7,50,000)
	(25,00,000 × 50%)	(30,00,000 × 25%)
Contribution	12,50,000	22,50,000
(-) FC	(7,50,000)	(15,00,000)
EBIT	5,00,000	7,50,000

Operating Leverage $\left(\frac{c}{EBIT}\right)$	2.5 times	3 times
	(12,50,000 ÷ 5,00,000)	(22,50,000 ÷ 7,50,000)

$\therefore$ *Company B has higher business risk, as fixed cost is high as compared to Company A.*

COMBINED LEVERAGE: (EASY)

115. QUESTION

Kumar Company has sales of ₹ 25,00,000. Variable cost of ₹ 15,00,000 and fixed cost of ₹ 5,00,000 and debt of ₹ 12,50,000 at 8% rate of interest. Calculate combined leverage.

ANSWER:

(1) Sales	25,00,000
(-) Variable Cost	(15,00,000)
Contribution	10,00,000
(-) Fixed Cost	(5,00,000)
EBIT	5,00,000
(-) Interest (12,50,000 × 8%)	(1,00,000)
EBT	4,00,000

$$Combined\ Leverage = \frac{Contribution}{EBT}$$

$$= \frac{10,00,000}{4,00,000}$$

= 2.5 times

INDIFFERENT POINT OR EBIT EPS ANLYSIS (MEDIUM)

116. QUESTION

Calculate the level of Earnings Before Interest and Tax (EBIT) at which the EPS indifference point between the following financing alternative will occur:
(a) Equity share capital of ₹12,00,000 and 12% debentures of ₹8,00,000.
(b) Equity share capital of ₹8,00,000, 14% preference share capital of ₹4,00,000 and 12% debentures of ₹8,00,000.

Assume corporate tax is 35% and par value of equity share, preference shares and debentures are ₹100 in each case.

ANSWER:

Calculation of indifference point between Option 1 & 2:

$$\frac{(EBIT - I)(1 - t) - D_p}{N_1} = \frac{(EBIT - I)(1 - t) - D_p}{N_2}$$

Let the EBIT be 'x'.

$$\frac{(x-96{,}000)(1-035)-0}{12{,}000}=\frac{(x-96{,}000)(1-0.35)-56{,}000}{8{,}000}$$

$$\frac{0.65x-62{,}400}{12}=\frac{0.65x-62{,}400-56{,}000}{8{,}000}$$

$$5.2x-4{,}99{,}200=7.8x-14{,}20{,}800$$

$$-2.6x=-9{,}21{,}600$$

$$x=EBIT=3{,}54{,}462$$

117. QUESTION (EASY)

A new project requires outlay of ₹ 800 lakhs. The amount maybe raised through issue of equity shares of ₹ 400 each or by issuing equity shares of value ₹ 600 lakhs and loan of ₹ 200 lakhs at 14% interest.
Assuming income tax rate at 25%, calculate EBIT levels that would keep equity investors indifferent to the two options. (JUNE 25)

ANSWER:

Step 1: Formula for calculation of indifference point

$$\frac{(\boldsymbol{EBIT-Interest})*(\boldsymbol{1-tax\ rate})}{(\boldsymbol{Number\ of\ equity\ shares\ in\ Plan\ 1})}=\frac{(\boldsymbol{EBIT-Interest})*(\boldsymbol{1-tax\ rate})}{(\boldsymbol{Number\ of\ equity\ shares\ in\ Plan\ 2})}$$

Step 2: Calculation of interest and number of equity shares in each plan

	Plan 1 (Equity)	**Plan 2 (Equity + Loan)**
Value of equity shares (in ₹Lakhs)	800	600 + 200
Share price (₹)	400	400
Number of shares (in lakhs)	2	1.5
Loan amount (₹Lakhs)		200
Interest %		14%
Interest amount (₹ Lakhs)		28

Step 3: Calculation of indifference point

Plan 1		**Plan 2**
$\frac{(EBIT-0)*(1-25\%)}{2}$	=	$\frac{(EBIT-28)*(1-25\%)}{1.5}$
$\frac{.75\ EBIT}{2}$	=	$\frac{.75\ EBIT-21}{1.5}$
.5625 EBIT	=	.75 EBIT – 21
EBIT (₹Lakhs)	=	**112/-**

ALL LEVERAGE (EASY BUT LENGTHY)

118. QUESTION

The data relating to two companies are as given below:

	Company A	**Company B**
Equity Capital	6,00,000	3,50,000
12% Debentures	4,00,000	6,50,000

Output per annum (Units)	60,000	15,000
Selling Price per unit	30	250
Fixed Costs per annum	7,00,000	14,00,000
Variable Cost per unit	10	75

You are required to calculate the operating leverage, financing leverage & combined leverage.

ANSWER:

Computation of Operating Leverage, Financial Leverage & Combined Leverage of two companies:

	Company A	**Company B**
Output (units) per annum	60,000	15,000
	Rs.	Rs.
Selling Price per unit	30	250
Sales Revenue	18,00,000 (60,000 × 30)	37,50,000 (15,000 ×250)
Less: Variable Costs	6,00,000 (60,000 × 10)	11,25,000 (15,000 × 75)
Contribution	12,00,000	26,25,000
Less: Fixed Costs	7,00,000	14,00,000
EBIT	5,00,000	12,25,000
Less: Interest @ 12%	48,000 (4,00,000 × 12%)	78,000 (6,50,000 × 12%)
PBT	4,52,000	11,47,000
Operating Leverage (Contribution/EBIT)	2.4 (12,00,000/5,00,000)	2.14 (26,25,000/12,25,000)
Financial Leverage (EBIT/PBT)	1.11 (5,00,000/4,52,000)	1.07 (12,25,000/11,47,000)
Combined Leverage (Operating × Financial)	2.66	2.29

WORKING CAPITAL LEVERAGE

119. QUESTION

The following information is available for two companies.

	X Ltd	**Y Ltd**
Fixed Assets	₹ 4,00,000	₹ 10,00,000
Current Assets	₹ 10,00,000	₹ 4,00,000
Total Assets	₹ 14,00,000	₹ 14,00,000
EBIT	₹ 1,50,000	₹ 1,50,000

You are required to compare the sensitivity earnings of the two companies for 30% change in the level of their current assets.

ANSWER:

Increase:-

$$WCL = \frac{CA}{TA + \Delta CA}$$

	X	**Y**
CA	10,00,000	4,00,000
TA	14,00,000	14,00,000
ΔCA	3,00,000	1,20,000
WCL	0.59 $\left(\frac{10,00,000}{14,00,000 + 3,00,000}\right)$	0.26 $\left(\frac{4,00,000}{14,00,000 + 1,20,000}\right)$

HUMADA CO-EFFICIENT

120. QUESTION

A company has a debt to equity ratio of 0.70:1.00, a tax rate of 34%, and an unlevered beta of 0.75. Calculate Hamada coefficient or leveraged beta.

ANSWER:

$$B_L = B_u\left[1 + (1 - t)\frac{D}{E}\right]$$
$$= 0.75\left[1 + (1 - 0.34)\frac{0.7}{1}\right]$$
$$= 0.75[1 + (0.66 \times 0.7)]$$
$$= 0.75(1 + 0.462)$$
$$= 0.75 \times 1.462$$
$$= 1.0965$$
$$B_L = 1.0965$$

WORKING CAPITAL MANAGEMENT

RECEIVABLES MANAGEMENT (CREDIT POLICY EVALUATION) (TOUGH)

121. QUESTION

JKL Ltd. is considering the revision of its credit policy with a view to increasing its sales and profit. Currently all its sales are on credit and the customers are given one month's time to settle the dues. It has a contribution of 40% on sales and it can raise additional funds at a cost of 20% per annum. The marketing manager of the company has given the following options along with estimates for considerations:

Particulars	Current Position	I Option	II Option	III Option
Sales (₹ in lakhs)	200	210	220	250
Credit period (in months)	1	1 ½	2	3
Bad debts (% of sales)	2	2 ½	3	5
Cost of Credit administration (₹ in lakhs)	1.20	1.30	1.50	3.00

You are required to advise the company for the best option.

ANSWER:

Statement Showing Evaluation of Credit Policies

(₹in lakhs)

Particulars	Current position (1 month)	Option I (1.5 months)	Option II (2 months)	Option III (3 months)
Sales	200	210	220	250
Contribution @ 40%	80	84	88	100
Increase in contribution over current level	-	4	8	20 (A)
Debtors = $= \left(\frac{Average\ Collection\ period \times Credit\ Sale}{12}\right)$	$\frac{1 \times 200}{12}$ = 16.67	$\frac{1.5 \times 210}{12}$ = 26.25	$\frac{2 \times 220}{12}$ = 36.67	$\frac{3 \times 250}{12}$ = 62.50
Increase in debtors over current level	-	9.58	20.00	45.83
Cost of funds for additional amount of debtors @ 20%	-	1.92	4.00	9.17 (B)
Credit administrative cost	1.20	1.30	1.50	3.00
Increase in credit administration cost over present level	-	0.10	0.30	1.80 (C)
Bad debts	4.00	5.25.	6.60	12.50
Increase in bad debts over current levels	-	1.25	2.60	8.50 (D)
Net gain/loss A – (B + C + D)	-	0.73	1.10	0.53

Advise: It is suggested that the company JKL Ltd. should implement Option II with a net gain of ₹1.10 lakhs which has a credit period of 2 months.

RECEIVABLES MANAGEMENT (CREDIT POLICY EVALUATION) (TOUGH)

122. QUESTION

ABC & XYZ Food Products Ltd. is considering the revision of its credit policy with a view to increasing its sales and profits. Currently all its sales are on credit and the customers are given one month's time to settle the dues. It has a contribution of 40% on sales and it can raise additional funds at a cost of 20% per annum.

The marketing director of the company has given the following options with draft estimates for consideration:

Particulars		Current Position	Option I	Option II
Sales	Rs. In lakhs	200	220	250
Credit Period	Months	1	2	3
Bad Debts	% of Sales	2	3	5
Cost of Credit Administration	Rs. In lakhs	1.20	1.50	3.00

Advise the company to take the right decision. (Working should for part of the answer).

ANSWER:

Evaluation of Different Options in Credit Policy of Asmit Food Products Ltd.

Particulars Credit Period(months)	Current Position 1	Option I 2	Option II 3
Sales	200	220	250
Less: Variable Cost (60 %)	120	132	150
Contribution (40%)	80	88	100
Investment in Debtors (Sales x Credit period/12 months)	16.67	36.37	62.50
Cost of funds invested in debtors balances @ 20%	3.33	7.33	12.50
Sales	200	220	250
Bad Debts (% of sales)	2%	3%	5%
Bad Debts	4	6.6	12.5
(A)	80.00	88.00	100.00
Contribution			
Less: Costs:	3.33	7.33	12.50
Cost of funds invested in debtors balances	4.00	6.60	12.50
Bad Debts	1.20	1.50	3.00
Cost of credit administration			
(B)	8.53	15.43	28.00
Net Contribution (A-B)	71.47	72.57	72.00

Decision:- Since the net contribution is highest in option I, it is suggested to extend 2 months credit period to the customers.

INVENTORY MANAGEMENT (VARIOUS LEVELS METHOD) (MEDIUM)

123. QUESTION

M/s Tubes Ltd. are the manufactures of picture tubes for TV. The following are the details of their operation during 2009:

Average monthly market demand	2,000 tubes
Ordering cost	₹100 per order
Inventory carrying cost	20% per annum
Cost of tubes	₹500 per tube
Normal usage	100 tubes per week
Minimum usage	50 tubes per week
Maximum usage	200 tubes per week
Lead time to supply	6 – 8 weeks

Compute from the above:

(1) Economic order quantity. It the supplier is willing to supply quarterly 1,500 units at a discount of 5%, is it worth accepting?
(2) Maximum level stock
(3) Minimum level stock
(4) Reorder level

ANSWER:

Annual consumption = Normal usage × No. weeks in year
= 100 tubes × 52 weeks
= 5,200 tubes

$$EOQ = \sqrt{\frac{2 \times Annual\ consumption \times Ordering\ cost}{Carrying\ cost\ p.u.p.a}}$$

$$= \sqrt{\frac{2 \times 5{,}200\ tubes \times R100}{R500 \times 20\%}}$$

$$= \sqrt{\frac{10{,}40{,}000}{100}}$$

EOQ = 101.98 tubes (say 102 tubes)

Total cost at EOQ level

		₹
Material cost	(5,200 tubes × ₹500)	26,00,000
(+) Ordering	$\left[\frac{5{,}200\ tubes}{102\ tubes} \times R100\right]$	5,098
(+) Carrying cost	$\left[\frac{102\ tubes}{2} \times R500 \times 20\%\right]$	5,100
		26,10,198

Total cost, at quarterly supply of 1,500 tubes at 5% discount

		₹
Material cost	(5,200 tubes × ₹475)	24,70,000
(+) Ordering	$\left[\frac{5{,}200\ tubes}{1{,}500\ tubes} \times R100\right]$	347
(+) Carrying cost	$\left[\frac{1{,}500\ tubes}{2} \times R475 \times 20\%\right]$	71,250
		25,41,597

Analysis: Accept offer of quarterly supply of 1,500 tubes at 5% discount as it will save ₹ 68,601 (26,10,198 – 25,41,597)

Re-order level	(Maximum usage × Maximum delivery period)
	(200 tubes × 8 weeks)
	1,600 tubes
Minimum level	Re-order level - (Normal usage × Average delivery period)
	1,600 tubes – (100 tubes × 7 weeks)
	900 tubes
Maximum level	(Re-order level + Re-ordering qty) - (Maximum usage × Maximum delivery period)
	(1,600 tubes + 102 tubes) – (50 tubes × 6 weeks)
	1,402 tubes

124. <u>QUESTION</u>

Two components A and B are used as follows :

Normal usage	3,000 units
Maximum usage	4,500 units
Minimum usage	1,500 units

Units	**A**	**B**
Re-order Quantity (units)	20,000	40,000
Re-order Period	4 to 6 weeks	2 to 4 weeks

Calculate :
(i) Re-order Level
(ii) Maximum Level
(iii) Minimum Leval
(iv) Average Inventory.

SOLUTION

Inventory Level Calculations

Re-order Level	**Maximum Usage x Maximum Re-order Period**	
	A	B
Units	4,500 × 6 = 27,000	4,500 × 4 = 18,000

Maximum Level	**Re-order Level + Re-order Quantity – (Minimum Usage × Minimum Re-order Period)**	
	A	**B**
Units	27,000 + 20,000 - (1,500 × 4) = 41,000	18,000 + 40,000 – (1,500 × 2) = 55,000

Manimum Level	**Re-order Level – (Normal Usage × Normal Re-order Period)**	
	A	**B**
Units	27,000 - (3,000 × 5) = 12,000	18,000 - (3,000 × 3) = 9,000

Average Inventory	**Minimum Level + ½ Re-order Quantity**	
	A	**B**
Units	12,000 + ½ of 20,000 = 22,000	9,000 + ½ of 40,000 = 29,000

Average Inventory	**(Minimum Level + Maximum Level)/2**	
	A	**B**
Units	(12,000+41,000)/2 = 26,500	(9,000+55,000)/2 =32,000

ECONOMIC ORDER QUANTITY (EASY)

125. QUESTION

A manufacturer requires 9,600 units of a certain component annually. This is currently purchased from a regular supplier at ₹ 50 per unit. The cost of placing an order is ₹60 per order and the annual carrying cost is ₹5 per price. What is the economic order quantity (EOQ) for placing order?

Recently the supplier has expressed his willingness to reduce the price to ₹48, if the total requirements are obtained from him in two equal orders and to ₹47, if the entire quantity required is purchased in one lot. Analyze the cost of the three options and recommend the best course.

ANSWER:

$$EOQ = \sqrt{\frac{2 \times Annual\ consumption \times Ordering\ cost}{Carrying\ cost\ p.u\ .p.a}}$$

$$= \sqrt{\frac{2 \times 9{,}600\ units \times 60}{5}}$$

$$= \sqrt{\frac{11{,}52{,}000}{5}}$$

EOQ = 480 units

Total cost at EOQ level

		Rs.

Material cost	(9,600 units × 50)	4,80,000
(+) Ordering cost	$\left\{\frac{9{,}600\ units}{480\ units} \times 60\right\}$	1,200
(+) Carrying cost	$\left\{\frac{480\ units}{2} \times 5\right\}$	1,200
		4,82,400

Total cost, it entire quantity is purchased in two lot:

		Rs.
Material cost	(9,600 units × 48)	4,60,800
(+) Ordering cost	$\left\{\frac{9{,}600\ units}{4800\ units} \times 60\right\}$	120
(+) Carrying cost	$\left\{\frac{4800\ units}{2} \times 5\right\}$	12,000
		4,72,920

Total cost, when two orders are placed in one lot:

		Rs.
Material cost	(9,600 units × 47)	4,51,200
(+) Ordering cost	$\left\{\frac{9{,}600\ units}{9{,}600\ units} \times 60\right\}$	60
(+) Carrying cost	$\left\{\frac{9{,}600\ units}{2} \times 5\right\}$	24,000
		4,75,260

Analysis : It advised to place 2 orders in lot size of 4,800 units, as total cost is minimum.

126. QUESTION

Calculate Economic Order Quantity from the following details and also state the number of orders to be placed in a year :

Consumption of materials per annum	50,000 kg
Order placing cost per order	125/-
Cost per unit of raw material	10/-
Storage Costs	5% on average inventory

SOLUTION

Economic Order Quantity	$\sqrt{(2 \times R \times C_\rho)/C_h}$
Economic Order Quantity	$\frac{\sqrt{2 \times 50{,}000 \times 125}}{5\% \times 10} = 5{,}000\ units$
Number of Orders per annum	$\frac{\boldsymbol{Annual\ Requirement}}{\boldsymbol{Economic\ Order\ Quantity}} = 50{,}000/5{,}000 = 10\ order$

Consumption of materials per annum	R
Ordering Cost per order	C_ρ
Holding Costs/Storage Cost	C_h

OPERATING CYCLE METHOD WORKING CAPITAL ESTIMATION (TOUGH)

127. QUESTION

XYZ Co. Ltd. is a pipe manufacturing company. Its production cycle indicates that materials, are introduced in the beginning of the production cycle; wages and overhead accrue evenly throughout the period of the cycle. Wages are paid in the next month following the month of accrual. (Time Lag = 1 month). Work in process includes full units of raw materials used in the beginning of the production process and 50% of wages and overheads are supposed to be conversion costs.

Details of production process and the components of working capital are as follows:

Production of pipes	12,00,000 units
Duration of the production cycle	One month
Raw material inventory help	One month consumption
Finished goods inventory help for	Two month
Credit allowed by creditors	One month
Credit given to debtors	Two month
Cost price of raw materials	₹60 per unit
Direct wages	₹10 per unit
Overheads	₹20 per unit
Selling price of finished pipes	₹100 per unit

Required to calculate the amount of working capital required for the company.

ANSWER:

Statement showing working capital estimation:

Particulars	Norms	Calculations	₹
Current Assets:			
Raw Material Stock	1 month	$\left[7{,}20{,}00{,}000 \times \frac{1}{12}\right]$	60,00,000
WIP Stock	1 month	$\left[9{,}00{,}00{,}000 \times \frac{1}{12}\right]$	75,00,000
Finished Goods Stock	2 month	$\left[10{,}80{,}00{,}000 \times \frac{2}{12}\right]$	1,80,00,000
Debtors (on cost)	2 month	$\left[10{,}80{,}00{,}000 \times \frac{2}{12}\right]$	1,80,00,000
			4,95,00,000

Particulars	Norms	Calculations	₹
Current Liabilities;			
Creditors	1 month	$\left[7{,}20{,}00{,}000 \times \frac{1}{12}\right]$	60,00,000
Outstanding Wages	1 month	$\left[1{,}20{,}00{,}000 \times \frac{1}{12}\right]$	10,00,000
			70,00,000
Working Capital (A) – (B)			4,25,00,000

OPTIMAL CASH HOLDING (EASY)

128. QUESTION

Z Ltd. has an estimated cash payments of Rs. 8,00,000 for a one month period and the payments are expected to steady over the period. The fixed cost per transaction is Rs. 250 and interest rate on marketable securities is 12% p.a.

Calculate:

(1) Optimal cash balance

(2) The optimal transaction size

ANSWER:

$$\text{Optimal cash balance} = \sqrt{\frac{2 \times Annual\ Cash\ disbursements \times Transaction\ cost}{Opportunity\ cost\ noe\ rupee\ per\ annum}}$$

$$\text{Optimal cash balance} = \sqrt{\frac{2 \times 96{,}00{,}000 \times 250}{1 \times 12\%}}$$

$$= \sqrt{\frac{4,80,00,00,000}{0.12}}$$

$$= \text{Rs. } 2,00,000$$

$$\text{No. of transaction} = \sqrt{\frac{\textit{Annual Cash disbursements}}{\textit{Optimal cash balance}} = \frac{96,00,000}{2,00,000} = 48 \textit{ in a year}}$$

MIX QUESTION (TOUGHEST)

129. QUESTION

XYZ Ltd. is a company manufacturing standardized chandeliers. The segment they deal in is more or less an oligopolistic kind of market with mediocre market potential. The demand of their product had been wavering in past, but owing to increasing economic level of middle class in India, the board of directors is confident of brighter days in future. On 1st April, 2023, the board of directors of the company is desirous of knowing the amount of working capital that will be required to meet the planned level of operations during the year 2023-24. Following details have been provided in this regard :

Issued share capital:	₹2 Crore
10% Debentures:	₹50 Lakh
Fixed Assets (1st April, 2023)	₹1.25 Crore

Production and sales during the year 2023-24 is expected to average out to 500 units per month. During the previous year, the ratios of cost to selling price, which are also likely to be maintained in current year as well, were as follows :

Raw Materials:	60%
Direct Wages	10%
Overheads:	20%

Following additional information has been provided in this regard :
(1) Raw materials and components are expected to remain in store for an average period of two months before being issued to assembly and production.

(2) Each unit of product is expected to be in process for 15 days.

(3) Finished goods stay in warehouse for an average period of 1 month before being dispatches to customers.

(4) Suppliers of raw material components extend an average credit of 1.5 month.

(5) 80% sales are credit and though credit extended to customers is two months, average credit collection period is 75 days.

(6) On an average, overheads of 2 weeks remain outstanding.

(7) Selling price per unit is ₹5,000.

(8) Work-in-progress, cost involves 100% of material and 50% of labour and overheads.

(9) Sundry debtors to be valued at cash cost. Entire overhead cost is assumed to be cash cost. (10) One year is equal to 360 days or 52 weeks.

(11) Assuming production and sales follow a constant pattern. You are required to :
(a) Prepare an estimate of working capital required by the company for the ensuing year. Add 10% of your calculated figure for contingencies. (10 marks)

(b) Prepare a forecast of Profit/Loss account for the ensuing year. (5 marks)
(c) Prepare a forecasted Balance Sheet at the end of ensuing year. (5 marks)

Answer (a):

Statement of Estimated Working Capital by XYZ Ltd.			
Particulars			**Amount (₹)**
Current Assets:			
Inventory			
Raw material	6000*3000*2/12	30,00,000	
Work-in-Process	6000*(3000+250+500)*15/360	9,37,500	
Finished Goods	6000*(3000+500+1000)*1/12	22,50,000	61,87,500
Sundry Debtor	(6000*80%)*(3000+500+1000)*75/360	45,00,000	45,00,000
	Total Current Assets		**1,06,87,500**
Less: Current Liabilities			
Sundry Creditors	6000*3000*1.5/12	22,50,000	(22,50,000)
Outstanding Overheads	6000*1000*2/52	2,30,769	(2,30,769)
	Balance		**82,06,731**
Add: 10% for contingencies			8,20,673
ESTIMATED WORKING CAPITAL REQUIRED			**90,27,404**

Working Notes
(i) Annual Production= 500 × 12=6000 Units

(ii) Per unit costs: Raw material= ₹5000 × 60%= ₹3000: Direct Wages= 5000 × 10%= ₹500 and Overhead= 5000 × 20%= ₹1000.

Answer (b)

Forecasted Profit/Loss account of XYZ Ltd.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Material and Components	1,80,00,000	By Sales	3,00,00,000
To Direct Labour	30,00,000		
To Overheads	60,00,000		
To Gross Profit c/d.	30,00,000		
Total	**3,00,00,000**	**Total**	**3,00,00,000**
To Interest on debentures	5,00,000	By Gross Profit b/d.	30,00,000
To Net Profit c/d.	25,00,000		
Total	**3,00,00,000**	**Total**	**3,00,00,000**

Answer (c)

Forecasted Balance Sheet of XYZ Ltd.

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital	2,00,00,000	Fixed Assets	1,25,00,000
Profit/Loss a/c.	25,00,000	**Net Current Assets**	1,50,00,000
10% Debenture	**50,00,000**	Inventory:	
		Raw Material – 30,00,000	
		WIP – 9,37,500	
		Finish Goods – 22,50,000	
		Total Inventory – 61,87,500	
		Add: Debtors – 50,00,000	
		Add:	
		Cash/Bank – 62,93,269#	
		Total CA: 1,74,80,769	
		Less CL:	

		Creditors – (22,50,000)	
		O/S Overheads – (2,30,769)	
Total	**2,75,00,000**	**Total**	**2,75,00,000**

1. Debtors on selling price = (6000*80 %)*5,000*75/360 = 50, 00,000

2. # Balancing figure
Cash / Bank Balance = Total Current Assets – Total Inventory – Debtors
Cash / Bank Balance = 1,74,80,769 - 61,87,500 - 50,00,000 = ₹62,93,269

3. In case if student show creditors and O/S overheads in liability side in that case total of balance sheet will be **₹2,99,80,769.**

4. Candidates solving the above question by any format, i.e., vertical or horizontal may be awarded marks.

130. QUESTION (TOUGHEST)

Magma Ltd. is a manufacturing industry which has a mix of equity and debt to finance its business. The company is growing at a considerable rate prompting the management to go for expansion. The company is considering various alternatives to raise funds for the same.

The capital structure of Magma Ltd. is as follows :

Particulars	**Amount (₹)**
12% Debentures (first issue)	3,00,000
13% Debentures (second issue)	2,00,000
10% Cumulative Preference Shares	2,50,000
Equity Shares (Face Value of ₹10 per share)	6,00,000
Retained Earnings	1,50,000

Additional Information :
(1) Equity shares are sold in the market at ₹25 per share. The company is contemplating the declaration of dividend of ₹3 per share at the end of the current financial year. The company has a practice of paying all earnings in the form of dividend.

(2) ₹100 per debenture (first issue) redeemable at par has 2% floatation cost and 8 years of maturity. The market price per debenture is ₹120.

(3) The second issue of debentures (₹100 each) is redeemable after 5 years and are currently selling at ₹90 per debenture.

(4) ₹100 per preference share redeemable at par has 3% floatation cost and 10 years of maturity. The market price per preference share is ₹108.

(5) The tax rate applicable to the company is 30%.

(6) The shareholder's tax liability may be assumed as 25% whereas the capital gain tax is 20%.

The CFO of the company is keen at understanding the cost of capital. Accordingly, you are appointed to complete the following tasks :
(1) Find out the weighted average cost of capital using :
(a) Book value weights.
(b) Market value weights.

(2) Further the company also intends to know the market price of the equity shares at the end of the current year using MM approach along with citing the assumptions of the theory.

(3) Assuming the company has sales of ₹20 lakh, variable cost of ₹12 lakh and fixed cost of ₹5 lakh (excluding of interest), calculate operating leverage, financial leverage and combined leverage. (10+5+5=20 marks)

Answer

1. Weighted Average Cost of Capital (WACC)

$Cost\ of\ Debentures = C_d = \frac{i(l+t)+(MV-NP)/n)}{(MV+NP)/2)}$ i = annual interest payment MV = maturity value NP= net proceeds t = corporate tax rate n = number of years to maturity			
$(i) Cd\_(First\ Issue) = \frac{i(l+t)+(MV-NP)/n}{(MV+NP)/2}$	$\frac{12(1-0.3)+(100-98)/8}{(100+98)/2}$	$\frac{8.4+0.25}{99}=\frac{8.65}{99}$	= 0.087
$(ii) Cd\_(Second\ Issue) = \frac{i(l+t)+(MV-NP)/n}{(MV+NP)/2}$	$\frac{13(1-0.3)+(100-100)/5}{(100+100)/2}$	$\frac{9.1+0}{100}=\frac{9.1}{100}$	= 0.091
Cost of Preference Shares (Cp) $= \frac{\text{PD}+(\text{MV}-\text{NP})/\text{n}}{(\text{MV}+\text{NP})/2}$ PD= amount of annual preference dividend			
$(iii)\boldsymbol{C_p} = \frac{PD+(MV-NP)/n}{(MV+NP)/2} = \frac{10+(100-97)/10}{(100+97)/2}$	$\frac{10+0.3}{98.5}=\frac{10.3}{98.5}$	= 0.1046	
$\boldsymbol{Cost\ of\ Equity\ Shares\ Capital\ (Ce) = \frac{DPS}{MP\ (or\ NP)}}$ DPS= Expected Dividend per share MP= Current Market Price per share NP= Net proceeds per share			
$(iv) C_e = \frac{3}{25} = 0.12$			
$\boldsymbol{Cost\ of\ Retained\ Earnings (C_r) = \frac{DPS(l+tl_l)(l-b)}{MP(l-T_2)}}$ $T_1 = marginal\ tax\ rate\ applicable\ to\ individual\ shareholder$			

$T_2 = capital\ gains\ tax$
$(iv) C_r = 3(1-0.25)/25(1-0.2) = 2.25/20 = 0.1125$

Weighted Average Cost (Book Value Weights)

Source	Amount in ₹	Weights	Cost	Weighted Average
Equity Shares	600000	0.4	0.12	0.048
10% Cumulative Preference Shares	250000	0.167	0.1046	0.0175
12% Debentures (first issue)	300000	0.2	0.087	0.0174
13% Debentures (second issue)	200000	0.133	0.091	0.0121
Retained Earnings	150000	0.1	0.1125	0.0113
Total	**1500000**	**1.000**		**0.1063 or 10.63%**

Weighted Average Cost (Market Value Weights)

Source	Amount in ₹	Weights	Cost	Weighted Average
Equity Shares	15,00,000	0.61	0.12	0.0732
10% Cumulative Preference Shares	2,70,000	0.11	0.1046	0.0115
12% Debentures (first issue)	3,60,000	0.146	0.087	0.0127
13% Debentures (second issue)	1,80,000	0.073	0.091	0.0066
Retained Earnings	1,50,000	0.061	0.1125	0.0069
Total	24,60,000	1.000		0.1109 or 11.09%

2. Market Price of equity shares at the end of the current year

$$Po = \frac{D_1 + P_1}{1 + K_e}$$

Where,
K_e = Cost of Equity
D_1= Dividend to be received at the end of the period
P_1= Market Price of equity shares at the end of the current year
$P_1=P_0(1+k_e)-D_1=25(1+0.12)-3=28-3=₹25$

Assumptions of M-M Hypothesis

1. The capital markets are perfect. Perfect capital markets imply that
a) Information is freely available to all,
b) Transaction and floatation costs do not exist and
c) No Investor is large enough to affect the market price of a share.

2. Investors behave rationally.

3. There are either no taxes or there are no differences in the tax rates applicable to dividends and capital gains. This means that investors value a rupee of dividend as much as a rupee of capital gains.

4. The firm has a fixed Investment policy.

5. Risk or uncertainty does not exist, (e., Investors are able to forecast future prices and dividends with certainty and one discount rate is appropriate for all securities at time periods.

3. Calculation of Leverage

	Amount in ₹
Sales	20,00,000
Less: Variable Cost	12,00,000
Contribution	8,00,000
Less: Fixed Cost	5,00,000

Earnings before Interest and Tax (EBIT)	3,00,000
Interest: (36,000 + 26,000)	62,000
Profit before Tax (PBT)	2,38,000
Tax	71,400
Profit after tax (PAT)	1,66,600

Operating Leverage (OL) = Contribution/EBIT
= ₹8,00,000/₹3,00,000
= 2.67

Financial Leverage (FL) = EBIT/EBT
= ₹3,00,000/(₹3,00,000 – ₹62,000)
= ₹3,00,000/₹2,38,000
= 1.26

Combined Leverage = OL × FL
= 2.67 × 1.26 =3.36

131. QUESTION (TOUGHEST)

Metadex Ltd. is a clean-tech start-up focused on affordable solar energy solutions for urban households. Founded by two engineers, Amit and Sumit, in 2021, the company developed a new solar panel design that is highly efficient and affordable. The journey begins with Amit, an engineer working in a traditional energy company. For years, Amit had seen the damaging environmental impact of fossil fuels and the inefficiency of the power grid. Concerned about climate change and driven by the desire to make a difference, he started researching alternative energy solutions. Solar energy stood out as an abundant and clean source of power that remained underutilized, especially in underserved communities. In 2020, Amit quit his job and partnered with his college friend—Sumit, an expert in renewable energy policy and a software engineer. Their vision is to revolutionize the energy industry by making solar power accessible to middle-income families across the globe.

Starting the company was tough. The team faced numerous challenges, including high upfront costs for solar panels, stiff competition from larger energy companies, and difficulties in navigating government regulations. They initially struggled to secure funding, as many investors were sceptical of renewable energy start-up, thinking the market was oversaturated or too slow to provide returns. Early-stage solar hardware companies often require significant capital for research, development, and manufacturing, making it a tough sell to investors looking for faster returns. The company navigated through the initial stages of challenges. They developed a robust marketing plan to target eco-conscious communities, partnering with influencers in the sustainability space and running ads on social media. The team scaled their operations by working with local solar panel manufacturers, reducing costs, and creating jobs in the communities they served.

Currently in the expansion process, Metadex needed around ₹ 15 lacs to scale up production and penetrate further in the market. Amit and Sumit decided to explore alternative fundraising options that would allow them to keep control of their company and align with their long-term vision.
The firm's condensed Balance sheet for the current year is as follows :

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital (₹10)	8,00,000	Fixed Assets	9,00,000
Reserves & surplus	2,00,000	Current Assets	6,00,000
10% Debentures of ₹100 each	4,00,000		
Current Liabilities	1,00,000		
Total	15,00,000	Total	15,00,000

Currently Earnings Before Interest and Tax (EBIT) = ₹ 8,00,000. Tax Rate 50%. Current Market Price per equity share ₹ 25, market value of debt equals its book value and cost of equity is 14%.

The financial advisors of Metadex Ltd. is assigned the task to calculate :

(i) the value of the firm and overall cost of capital before infusion of funds.
(ii) the Economic Value Added and Market Value Added.
The company has proposed to issue 8% 5000 Preference shares of ₹ 100 each and for the balance ₹ 10 lacs, it is considering two alternatives.

Alternative 1 : Raise 90% of funds required by issuing equity shares at current market price and the remaining by issuing 8% redeemable Debentures of ₹ 100 at par.

Alternative 2 : Raise 80% of the funds by issuing 9% Debentures of ₹ 100 at par and redeemable at a premium of 10% after 10 years and the balance by issuing Equity shares at 33.3333% premium.
Again, the financial advisor is asked to :
(i) Draft the final Capital Structure
(ii) Calculate the Earnings Per Share and Financial Leverage.

(*4+4+8+4=20 marks*)

Answer (i)

(Amount in ₹)

Earnings before Interest and Tax (EBIT)	8,00,000
Less: Interest	40,000
PBT	7,60,000
Less: Tax @50%	3,80,000
Shareholders' Earnings (PAT)	3,80,000
Market value of Equity (₹ 3,80,000/14%)	27,14,286
Market value of Debt	4,00,000
Market Value of the Firm	31,14,286
Overall cost of capital = EBIT/Market Value of Firm = ₹ 8,00,000/₹ 31,14,286	**25.69%**

Note: Rounded off to nearest rupee and Fraction

Answer (ii)
Economic Value Added (EVA) = Net operating Profit after Tax - (Weighted Average Cost of Capital x Capital employed)
Where, Capital Employed = Fixed Assets + Working Capital
= ₹ 3,80,000 - (25.69% x ₹14,00,000)
= ₹ 3,80,000 - ₹ 3,59,660 = ₹ 20,340

Market Value Added (MVA) = MV of Equity Shares - Total Shareholders' equity + (Market Value of Debt – Book Value of debt)
= (80,000 shares x ₹25) - (₹ 8,00,000 + ₹ 2,00,000) + (₹ 4,00,000 – ₹ 4,00,000)
= ₹ 20,00,000 - ₹10,00,000
= ₹10,00,000

Answer (iii)

Capital Structure Plans

Amount in ₹

Capital	**Alternative 1**	**Alternative 2**
Equity Share Capital (WN 1)	11,60,000	9,50,000
8% Preference shares (₹100)	5,00,000	5,00,000
Reserves & Surplus (WN 1)	7,40,000	2,50,000
10% Redeemable Debentures (₹100)	4,00,000	4,00,000
8% Debentures (₹100)	1,00,000	-
9% Debentures (₹100)	-	8,00,000
Total	**29,00,000**	**29,00,000**

Working Notes
***WN1* - Equity Share Capital for both Alternatives**
Equity Share Capital = 8,00,000 + 900000 x 10/25 = 8,00,000 + ₹ 3,60,000 = ₹ 11,60,000

Equity Share Capital = ₹ 8,00,000 + ₹ 200000 x 10/13.3333 = ₹ 8,00,000 + ₹ 1,50,000 = ₹ 9,50,000

***WN2*- Reserve and Surplus for both Alternatives**

Reserves & Surplus = ₹ 2,00,000 + ₹ 900000 x 15/25 = ₹ 2,00,000 + ₹ 5,40,000 = ₹ 7,40,000

Reserves & Surplus = ₹ 2,00,000 + ₹ 200000 x 3.3333/13.3333 = ₹ 2,00,000 + ₹ 50,000 = ₹ 2,50,000

Answer (iv)

Financial Leverage

Particulars	**Alternative 1**	**Alternative 2**
Earnings before Interest and Tax (EBIT)	8,00,000	8,00,000
Less: Interest	48,000	1,12,000
Profit before Tax (PBT)	7,52,000	6,88,000
Tax @50%	3,76,000	3,44,000
Profit after Tax (PAT)	3,76,000	3,44,000
Preference dividend	40,000	40,000
Earnings available for Equity Shareholders (A)	3,36,000	3,04,000
Number of Equity Shares (B)	1,16,000	95,000
EPS= (A/B)	2.90	3.2
Financial Leverage = EBIT/PBT (Ignoring the Preference Dividend)	1.06	1.16

Alternative Answer

$Financial\ Leverage = \frac{EBIT}{EBT} = \frac{Preference\ Dividend}{(1-t)}$ Considering Preference Dividend	1.19	1.32

DIVIDEND POLICY

MM APPROACH DIVIDEND POLICY

132. QUESTION

X Ltd., has 8 lakhs equity share outstanding at the beginning of the year. The current market price per share is ₹120. The Board of Directors of the company is contemplating ₹6.4 per share as dividend. The rate of capitalization, appropriate to the risk-class to which the company belongs, is 9.6%:
(i) Based on M-M Approach, calculate the market price of the share of the company, when the dividend is – (a) declared; and (b) not declared.
(ii) How many new shares are to be issued by the company, if the company desires to fund an investment budget of 3.20 crores by the end of the year assuming net income for the year will be ₹1.60 crores?

ANSWER:

(1)P_1 ; *if dividend is declared* ($D_1 = 6.4$)

$$P_0 = \frac{D_1 + P_1}{1 + ke}$$

$$120 = \frac{6.4 + P_1}{1 + 0.096}$$

$$120 \times 1.096 = 6.4 + P_1$$

$$131.52 = 6.4 + P_1$$

$$\therefore P_1 = 125.12$$

(2)P_1 if dividend is not declared

$D_1 = 0$

$$P_0 = \frac{D_1 + P_1}{1 + ke}$$

$$120 = \frac{0 + P_1}{1 + 0.096}$$

$$131.52 = P_1$$

(3) Number of shares to be issued.

	Dividend Declared	Dividend not declared
Profits available	1.6	1.6
(-) Dividend paid	(0.512) $\left[\frac{(8 \times 6.4}{100}\right]$	-
Profits available for Investment	1.088	1.6
Investment	3.2	3.2
Funds req. to be raised by issue	2.112 (3.2 – 1.088)	1.6 (3.2 -1.6)
No. of Shares to be issued	1,68,797.95 Shares $\left[\frac{2.112}{125.12} \times 1{,}00{,}00{,}000\right]$	1,21,654.5 Shares $\left[\frac{1.6}{131.52} \times 1{,}00{,}00{,}000\right]$
Total Shares	9,68,797.95	9,21,954.5
Price	125.12	131.52
Total MV	12,12,16,000	12,12,16,000

133. QUESTION (EASY)

Win Some Ltd. is contemplating issue of shares for an expansion project :

Market Capitalization Rate	15%
Number of shares outstanding at the beginning of FY	1,00,000
Share price at the beginning of FY	₹120
Dividend expected to be declared	₹2 per share
Expected net income	₹50,00,000
New investment	₹1,00,00,000

Assuming that Modigliani Miller's approach (theory of irrelevance of dividend to market value) is followed, you are required to calculate :
(i) Total number of shares at the end of FY.
(ii) The market value of the shares at the end of FY. (JUNE 25)

ANSWER:
Calculation of share price at end of the FY:

$$P_0 = \frac{(D_1 + P_1)}{(1 + K_e)}$$

$$120 = \frac{(2 + P_1)}{(1 + .15)}$$

$$\boldsymbol{P_1 = Rs.136/-}$$

Amount to be raised from new shares

		(₹)
A	Expected Net Income	50,00,000
B	Total Dividend (₹1,00,000×2)	(2,00,000)
C	Retained earnings (A-B)	48,00,000
D	Investment required	1,00,00,000
E	Amount to be raised from new shares (D-C)	52,00,000

(i) Total number of shares at the end of year

A	Amount to be raised from new shares	₹52,00,000
B	Market price	₹136/-
C	New shares (A/B) [Rounded off to nearest whole number]	38,235
D	Number of shares at beginning of the year	1,00,000
E	Total shares at end of the FY (C+D)	1,38,235

(ii) Total market value at the end of the year:

Total shares	1,38,235
Market price at end of year	₹136/-
Market value at the end of the FY	₹1,87,99,960/-

GORDON MODEL DIVIDEND POLICY

134. QUESTION
The following information is collected from the annual reports of J Ltd.:

Profit before tax	₹2.50 crore
Tax rate	40 percent
Retention ratio	40 percent
Number of outstanding shares	50,00,000
Equity capitalization rate	12 percent
Rate of return on investment	15 percent

What should be the market price per share according to Gordon's model of dividend policy?

ANSWER:

$$(1) EPS = \frac{2.50\ (1 - 0.4)}{0.5} = 3/Shares$$

$$(2) g = b \times r = 0.4 \times 15\% = 6\%$$

$$(3) P = \frac{E(1-b)}{ke-g}$$
$$= \frac{3(1-0.4)}{0.12-0.06}$$
$$= \frac{1.8}{0.06}$$
P = 30

WALTER APPROACH DIVIDEND POLICY

135. QUESTION

The following information pertains to M/s XY Ltd.

Earnings of the Company	₹5,00,000
Dividend Payout ratio	60%
No. of shares outstanding	₹1,00,000
Equity capitalization rate	12%
Rate of return on investment	15%

(i) What would be the market value per share as per Walter's model?
(ii) What is the optimum dividend payout ratio according to Walter's model and the market value of Company's share at that payout ratio?

ANSWER:

$$(1) EPS = \frac{5,00,000}{1,00,000} = 5\ Shares$$
$$(2) DPS = EPS \times Payout\ ratio = 5 \times 60\% = 3/Share$$
$$(3) P = \frac{D + \frac{r}{ke}(E - D\_}{ke}$$
$$= \frac{3 + \frac{0.15}{0.12}(5-3)}{0.12}$$
$$= \frac{3 + (1.25 \times 2)}{0.12}$$
$$= \frac{5.5}{0.12}$$
P = ₹45.83/Share

(4) As r (15%) > ke (12%); it is a growth firm. Hence; it should retain all its profits & hence, Optimum Dividend payout should be 0%.

$$(5) P = \frac{D + \frac{r}{ke}(E - D)}{ke}$$
$$= \frac{0 + \frac{0.15}{0.12}(5-0)}{0.12}$$
$$= \frac{0 + (1.25 \times 5))}{0.12}$$
= ₹52.08/Share

MIX

136. QUESTION

ABD Limited has provided the following information :

Earnings per share = ₹25
Dividend per share = ₹9
Cost of capital = 12%
Internal rate of return (IRR) on investment = 16%.

You are required to compute the market price per share using :

(a) Gorden's formula
(b) Walter's formula.

SOLUTION
a) Gordon's approach

$$P_0=\frac{E(1l-b))}{ke-g}-\frac{9}{0.12-0.1024}=9/0.0176=₹511.36$$

Where
P_0 = Price of equity share
E = Earnings per share
b = Retention Ratio or percentage of earnings retained
1 – b = D/P Ratio, i.e., percentage of earnings distributed as dividends
CR or Ke = Capitalization rate of the firm or Cost of equity capital
br = Growth rate in r = g, i.e., rate of return on investment on an all-equity firm
E (1-b) = D = Dividend per share
where growth (g) = br
b = retention ratio= EPS- DPS /EPS = 25-9 / 25 = 0.64
Growth= b × r = 0.64 * 0.16 = 0.1024

b) Walter's Approach

$$P=\frac{D+(R/Ke)(E-D)}{Ke}-\frac{9+\frac{0.16}{0.12(25-9)}}{\mathbf{0.12}}-\frac{9+\frac{0.16}{0.12(25-9)}}{\mathbf{0.12}}-\frac{30.33}{\mathbf{0.12}}₹252.78$$

Where, P = Market price per share
D = Dividend per share
R=Internal rate of return
E= Earnings per share
k = Cost of equity capitalization rate.

SECURITY ANALYSIS

EXPECTED RETURN

138. QUESTION

Using the following information calculate expected return:
Current yield on a U.S. 10-year treasury is 2.5%
The average excess historical annual return for U.S. stocks is 7.5%
The beta of the stock is 1.25

ANSWER:

$E(R) = R_f + \beta(R_m - R_f)$
$= 2.5\% + (1.25 \times 7.5\%)$
= 2.5% + 9.375%
= 11.875%

$Market\ Premium\ (R_m - R_f)$

HOLDING PERIOD RETURN

139. QUESTION

Three years ago, Fred invested $10,000 in the shares of ABC Corp. Each year, the company distributed dividends to its shareholders. Each year, Fred received $100 in dividends. Note that since Fred received $100 in dividends each year, his total income is $300. Today, Fred sold his shares for $12,000, and he wants to determine the HPR of his investment.

ANSWER:

$$HPR = \frac{Income + (Selling\ Price - Purchase\ Price)}{Purchase\ Price} \times 100$$
$$= \frac{300 + (12{,}000 - 10{,}000)}{10{,}000} \times 100$$
$$= \frac{2{,}300}{10{,}000} \times 100$$
= 23%

140. QUESTION

Calculate Holding period returns for the following security :

Particulars	**(₹)**
Investment made on April 1,2022	50,000/-
Dividends received during the year	2,500/-
Investment sold on March 31,2023	75,000/-
Income Tax Rate on Dividends	30%
Income Tax Rate on Capital Gains	20%

SOLUTION

Calculation of Holding Period Return

	Gross Receipt (₹)	**Income Tax Rate**	**Income Tax (₹)**	**Net Receipt (₹)**
Dividends	2,500	30%	750	**1,750**
Capital Gains (₹ 75,000 – ₹ 50,000/-)	25,000	20%	5,000	**20,000**
Total Return				**21,750**

Total Investment = ₹50,000/-
Holding Period Return = Net Receipt/Total Investment
= ₹ 21,750/₹ 50,000 = 0.435= 43.50%

Alternative Answer:
[(₹ 50,000 + ₹ 1,750 + ₹ 20,000)/ ₹ 50,000] -1 = .435 or 43.50%

COMPARATIVE BALANCE SHEET

141. QUESTION

From the following Balance Sheet, prepare Comparative Balance Sheet of Beta Ltd.:

Particulars	Note No.	31st March, 2022 (₹)	31st March, 2021 (1)
I. EQUITY AND LIABILITIES			
1. Shareholder's Funds			
(a) Share Capital		3,50,000	3,00,000
2. Non-Current Liabilities			
Long-term Borrowings		1,00,000	2,00,000
3. Current Liabilities :			
Trade Payables		1,50,000	1,00,000
Total		6,00,000	6,00,000
II. ASSETS			
1. Non-Current Assets			
Fixed Assets (Tangible)		4,00,000	3,00,000
2. Current Assets			
Trade Receivables		2,00,000	3,00,000
Total		6,00,000	6,00,000

ANSWER:

Comparative Balance Sheet of Beta Ltd.

E & L	31.3.22	31.3.21	Change	Change (%)
Shareholders Fund Share Capital	3,50,000	3,00,000	50,000	16.67%
NCL LTB	1,00,000	2,00,000	(-) 1,00,000	(-) 50%
CL T/P	1,50,000	1,00,000	50,000	50%
	6,00,000	6,00,000		
Assets				
NCA R. A. (Tangible)	4,00,000	3,00,000	1,00,000	33.33%
CA T/R	2,00,000	3,00,000	(-) 1,00,000	(-) 33.33%
	6,00,000	6,00,000		

FUND FLOW STATEMENT

142. QUESTION

The Balance Sheets of United Corporation as on 31st December, 2020 and 31st December, 2021 are as follows:

Liabilities	2020 (Rs.)	2021 (Rs.)	Assets	2020 (Rs.)	2021 (Rs.)
Share Capital	500000	700000	Land and Buildings	80000	120000
Profit & Loss	100000	160000	Plant and Machinery	500000	800000
General Reserve	50000	70000	Stock	100000	75000
Sundry Creditors	153000	190000	Debtors	150000	160000
Bills Payable	40000	50000	Cash	20000	20000
Outstanding Expenses	7000	5000			
	850000	1175000		850000	1175000

Additional information:
1. Rs.50000 depreciation has been charged on plant and machinery during 2021.
2. A piece of machinery was sold for Rs.8000 during 2021. It had cost Rs.12000, depreciation of Rs.7000 had been provided on it.

Prepare a Schedule of Changes in Working Capital and a Statement showing the Sources and Application of Funds for 2021.

ANSWER:

Fund Flow Statement

Sources	₹	Application	₹
Sale of P & M	8,000	Purchase of L & B	40,000
Issue of share capital	2,00,000	Purchase of P & M	3,55,000
Decrease in WC	60,000		
Funds flow from operations	1,27,000		
	3,95,000		3,95,000

P & M

Op.	5,00,000	Dep.	50,000
Pur.	3,55,000	Sale	8,000
Pr.	3,000	Cl.	8,00,000

(2) WORKING CAPITAL CHANGES:

CA	**2020**	**2021**
Stock	1,00,000	75,000
Debtor	1,50,000	1,60,000
Cash	20,000	20,000
	2,70,000	2,55,000
CL		
S/C	1,53,000	1,90,000
B/P	40,000	50,000
O/E	7,000	5,000
WC (CA – CL)	2,00,000	2,45,000
	70,000	10,000

WC = 60,000

(3) Funds from operations:-

Profit (1,60,000 – 1,00,000)	60,000
(+) Dep.	50,000
(-) Profit on Sale of P & M	(3,000)
(+) Transfer to G/R	20,000
	1,27,000

RELATIVE STRENGTH INDEX (RSI)

143. QUESTION

Share price of P Limited was trading at the following prices at NSE on various trading sessions :

Trading Session	Share Price of P Limited (₹)
1	4344
2	4254
3	4211
4	4308
5	4487
6	4213
7	4240

8	4112
9	4061
10	4414
11	4030
12	4336
13	4230
14	4392

Calculate RSI from the above data. Comment if share is overbought. (5 marks)

SOLUTION

Relative Strength Index (RSI)

Trading Session	Share Price in ₹	Gain in ₹	Loss in ₹
1.	4344	-	-
2.	4254	-	90
3.	4211	-	43
4.	4308	97	-
5.	4487	179	-
6.	4213	-	274
7.	4240	27	-
8.	4112	-	128
9.	4061	-	51
10.	4414	353	-
11.	4030	-	384
12.	4336	306	-
13.	4230	-	106
14.	4392	162	-
		1124/6 **₹187.33**	1076/7 **₹153.71**

$$RS = \frac{Average\ Gain\ in\ Per\ Day}{Average\ Loss\ in\ Per\ Day} = \frac{187.33}{153.71} = 1.219$$

RSI = 100 - (100/1+RS) = 100 - (100/1+1.219) = 54.93

An RSI reading of 70 or above indicates an overbought situation whereas a reading of 30 or below indicates an oversold condition. Hence, the share is not overbought as RSI is below 70.

144. <u>QUESTION</u>

Sun Star Ltd. is a listed company whose share prices for last 14 trading session are given below. Calculate Relative Strength Index : (JUNE 25)

Trading session number	Share price (₹)
1	334
2	344
3	335
4	312
5	334
6	348
7	314
8	309
9	316

10	339
11	347
12	317
13	333
14	340

ANSWER:

Step 1: Calculation of Average Gain and Average Loss

Trading session number	Share price (₹)	Gain in ₹	Loss in ₹
1	334	-	-
2	344	10	
3	335		9
4	312		23
5	334	22	
6	348	14	
7	314		34
8	309		5
9	316	7	
10	339	23	
11	347	8	
12	317		30
13	333	16	
14	340	7	
Total		107	101
Number of sessions		8	5
Average Gain/Loss		13.375	20.2

Step 2: Calculation of Relative Strength

$$RS = \frac{Average\ Gain\ Per\ Day}{Average\ Loss\ Per\ Day} = \frac{13.375}{20.2} = 0.66$$

Step 3: Calculation of Relative Strength Index

$$RSI = 100 - \frac{100}{(1 + RS)} = 39.76\ or\ 40\ Approx.$$

OPERATIONAL ASPECT

BREAK EVEN POINT

145. QUESTION

Mahindra Ltd. sells two products, J and K. The sales mix is 4 units of J and 3 units of K. The contribution margins per unit are ₹ 40 for J and ₹ 20 for K. Fixed costs are ₹ 6, 16,000 per month.

Compute Break even units of Product J & K

ANSWER:

Base = Lot of J & K in ratio 4:3

$$BEP(Lots) = \frac{FC}{Contribution\ Per\ Lot}$$

$$= \frac{6,16,000}{(4 \times 40) + (3 \times 20)}$$

$$= \frac{6,16,000}{160 + 60}$$

$$= \frac{6,16,000}{220}$$

= 2800 Lots

BEP (Units):-

$J = 2{,}800\ Lots \times 4 = 11{,}200\ Units$

$K = 2{,}800\ Lots \times 3 = 8{,}400\ Units$

CHANGE IN LEVEL QUESTION

146. QUESTION

From the following particulars calculate:

a. P/V Ratio b. Fixed Cost

b. I year sales Rs. 1, 95,000 profit Rs. 9,000

c. II Year sales Rs. 2, 25,000 profit Rs. 15,000

ANSWER:

$$(1) P/V\% = \frac{Change\ in\ Profit}{Change\ in\ Sales} \times 100$$

$$= \frac{15,000 - 9,000}{2,25,000 - 1,95,000} \times 100$$

$$= \frac{6,000}{30,000} \times 100$$

= 20%

(2) Contribution – FC = Profit

Contribution – Profit = FC

(1,95,000 × 20%) – 9,000 = FC

39,000 – 9,000 = FC

$\therefore FC = 30{,}000$

MARGIN OF SAFETY

147. QUESTION

You have access to XYZ Ltd.'s data for the fiscal year that concluded on March 31, 2009,sales of 100,000 units at Rs. 10 p.u. for variable costs: Rs. 6. 3,00,000 rupees per year in fixed costs. Determine the safety margin.

ANSWER:

(1) Particulars	₹
Sales (1,00,000 × 10)	10,00,000
(-) VC (6 ×1,00,000)	(6,00,000)

Contribution	4,00,000
(-) F. C.	(3,00,000)
Net Profit	1,00,000

$$(2) P/V\% = \frac{Contribution}{Sales} \times 100$$
$$= \frac{4,00,000}{10,00,000} \times 100$$
$$= 40\%$$

$$(3) MOS = \frac{Net\ Profit}{P/V\%}$$
$$= \frac{1,00,000}{40\%}$$
$$= ₹2,50,000/-$$

148. QUESTION

The profit volume ratio of X Ltd. is 50% and the margin of safety is 40%. You are required to calculate the net profit if the sales volume is ₹1,00,000

ANSWER:

$$MOS(\%) \underset{\longrightarrow}{\longleftarrow} \frac{MOS(₹)}{Sales}$$

$$(1) MOS\ (₹) = Sales \times MOS\ (\%)$$
$$= 1,00,000 \times 40\%$$
$$= 40,000$$

$$(2) MOS(₹) = \frac{Net\ Profit}{P/V\%}$$
$$40,000 = \frac{Net\ Profit}{50\%}$$
$$Net\ Profit = 40,000 \times 50\%$$
$$\therefore Net\ Profit = 20,000$$

MIX QUESTION

149. QUESTION

DB Ltd furnished the following information

Particulars	**2005-2006**	**2006-2007**
Sales (Rs 10/unit)	200,000	2,50,000
Profit	30,000	50,000

You are required to compute:
(a) P/V Ratio.
(b) Break-even point.
(c) Total variable cost for 2005-2006 & 2006-2007.
(d) Sales required to earn a profit of Rs. 60,000.
(e) Profit/Loss when sales are Rs. 1,00,000

ANSWER:

$$(1) P/V\ \% = \frac{Change\ in\ Profit}{Change\ in\ Sales} \times 100$$
$$= \frac{50,000 - 30,000}{2,50,000 - 2,00,000} \times 100$$
$$= \frac{20,000}{50,000} \times 100$$

= 40%

(2) Fixed Cost = Contribution – Profit
= (Sales × P/V %) – Profit
= (2,00,000 × 40%) – 30,000
= 80,000 – 30,000
= 50,000/-

$$\text{Break-Even Sales (₹)} = \frac{\text{FC}}{\text{P/V\%}}$$
$$= \frac{50{,}000}{40\%}$$
= ₹1,25,000/-

(3) VC % = 100% – P/V %
= 100% – 40%
= 60%
$VC(2005-06) = 2{,}00{,}000 \times 60\% = 1{,}20{,}000$
$VC(2006-07) = 2{,}50{,}000 \times 60\% = 1{,}50{,}000$

$$(4) Desired\ Sales = \frac{FC + Desired\ Profit}{P/V\%}$$
$$= \frac{50{,}000 + 60{,}000}{40\%}$$
= ₹2,75,000/-

(5) Profit = Contribution – Fixed Cost
= (Sales × P/V%) – Fixed Cost
= (1,00,000 × 40%) – 50,000
Profit (Loss) = (-) 10,000

MIX QUESTION

150. QUESTION

A company produces a single product and sells it at ₹200 each. The variable cost of the product is ₹120 per unit and the fixed cost for the year is ₹96,000.

Calculate:
(i) P/V ratio
(ii) Sales at break-even point
(iii) Sales units required to earn a target net profit of ₹1,20,000.
(iv) Profit at sales of ₹7,00,000.

ANSWER:

Sales – Variable cost = Contribution p. u.
200 – 120 = 80

$$(i) P/V\ ratio = \frac{Contribution}{Sales} \times 100 = \frac{80}{200} \times 100 = 40\%$$

$$(ii) BEP\ (in\ value) = \frac{Fixed\ cost}{\frac{P}{V}ratio} = \frac{96{,}000}{40\%} = 2{,}40{,}000$$

(iii) Sales units required to earn a target net profit of ₹1,20,000.

Particulars	₹
Sales	5,40,000
Less: Variable cost	(3,24,000)
Contribution	2,16,000

Less: Fixed cost	(96,000)
Profit	1,20,000

$$Sales = \frac{2,16,000}{40\%} = 5,40,000$$

$$Sales\ units = \frac{5,40,000}{200} = 2,700$$

(iv) Profit at sales of ₹7,00,000:

Particulars	₹
Sales	7,00,000
Less: Variable cost	(4,20,000)
Contribution	2,80,000
Less: Fixed cost	(96,000)
Profit	1,84,000

151. QUESTION

ABC Ltd. provides the following information regarding the cost of the product. Direct materials ₹20,000 Direct Wages ₹16,000 Variable Factory Overhead : 25% of wages Variable Administration Overhead : 10% of the factory cost Variable Selling and Distribution Overhead : ₹4 per unit Fixed Overhead : ₹8,000 Units sold 1,000 @ ₹64 per unit From the above data of ABC Ltd., you are required to calculate :

(i) Profit-Volume Ratio
(ii) Break-Even Point
(iii) Margin of Safety
(iv) Profit.

SOLUTION

Statement of Marginal Cost

Direct Material	20,000
Direct Wages	16,000
Prime Cost	36,000
Variable Factory Overhead (25% of wages)	4,000
Marginal Factory Cost	40,000
Variable Administrative Overhead (10% of 40,000)	4,000
Marginal Cost of Production	44,000
Variable Selling & Distribution Overhead (1,000 × 4)	4,000
Total Marginal Cost	48,000
Sales (1,000 × 64)	64,000

Calculation of Ratio

(i) P/V Ratio = S-V /S * 100 = 64,000-48,000 /64,000 = 25%
(ii) B.E.P. = Fixed Costs / P/V Ratio = 8,000 / 25% = ₹32000

(iii) Margin of Safety = Sales – B E.P. = 64,000 – 32,000 = ₹32,000

(iv) Profit= (S* P/V)-F = (64000*25%)-8000 = ₹8000

152. QUESTION

Zen & Co made sales for a certain period for ₹ 25,00,000/-. The net profit for the same period was ₹ 2,50,000/-. Fixed overheads were ₹ 3,75,000/-.
Calculate :
(i) P/V Ratio
(ii) Sales needed to generate a profit of ₹ 3,75,000/-

(iii) Net profit when sales are ₹ 37,50,000/-
(iv) Break Even Point.

SOLUTION

(i) Calculation of P/V Ratio

Contribution = Fixed Cost + Profit

= 3,75,000 +2,50,000

= 6,25,000

$$P/V\ Ratio = \frac{\boldsymbol{Contribution}}{\boldsymbol{Sales}} = \frac{\boldsymbol{Rs.6,25,000}}{\boldsymbol{Rs.25,00,00}} = 25\%$$

(ii) Sales needed to generate a profit of 3,75,000/-

$$Required\ Sales = \frac{\boldsymbol{Fixed\ Cost + Profit}}{\boldsymbol{P/V\ Ratio}} = \frac{\boldsymbol{Rs.3,75,000 + Rs.3,75,000}}{\boldsymbol{25\%}} = Rs.30{,}00{,}000$$

(iii) Net profit when sales are ₹ 37,50,000

Sales	₹ 37,50,000
PV Ratio	25.00%
Contribution = Sales x P/V Ratio	₹ 9,37,500
Fixed Cost	₹ 3,75,000
Profit = Contribution - Fixed Cost	₹ 5,62,500
Sales	₹ 37,50,000

$$(\boldsymbol{iv})Break\ Even\ Point = \frac{\boldsymbol{Fixed\ Cost}}{\boldsymbol{P/V\ Ratio}} = \frac{\boldsymbol{Rs.3,75,000}}{\boldsymbol{25\%}} = Rs.15{,}00{,}000$$