

PAPER – 6: FINANCIAL MANAGEMENT AND STRATEGIC MANAGEMENT

PART – I Multiple Choice Questions

Case Scenario - I

XYZ Ltd. wants to establish a shoe manufacturing unit. To setup this unit, it needs a loan. XYZ Ltd, approaches a commercial bank for working capital loan.

Bank has asked the company to present the proposal for such loan. To prepare such proposal, the company has appointed you and provided some information about the plan.

It wants to maintain margin of safety of 10% for contingencies. The company want to keep cash balance of ₹ 90,000.

The product will be sold at gross profit margin of 25% on COGS. Depreciation will be part of cost of production.

Stock of raw material will be held at 1.5 months of its consumption, while finished goods inventory will be maintained at one month's requirement. Finished goods will be valued at manufacturing cost.

The company will sell shoes in domestic as well as in foreign market. Total estimated annual sales will be ₹ 30,00,000. 20% of the sales are foreign sales and there will be a delay of 1/2 month to realise the sales proceed from foreign debtors. All domestic sales will be on credit and allowed a credit period of 2 months.

Raw material consumed will be 25% of estimated sales and the company will get credit period of 2 months of consumption from its supplier of raw material. Wage expenses will be 20% of sales and will be paid in 1/2 month's lag.

Outstanding cash manufacturing overhead expenses at the end of the year will be ₹ 60,000; it will be paid in one month arrear. Estimated total administrative cost (to be paid after one month) will be ₹ 1,80,000. Expected annual sales promotion expenses are ₹ 90,000, which will be paid quarterly in advance. The company want to submit the proposal to bank on cash cost basis.

You are required to answer the following question 1 to 5:

1. What will be the total manufacturing cost and total cost of sales on cash cost basis?
(A) ₹ 20,70,000, ₹ 23,40,000
(B) ₹ 24,00,000, ₹ 30,00,000
(C) ₹ 22,50,000, ₹ 23,40,000
(D) ₹ 16,80,000, ₹ 24,00,000 **(2 Marks)**
2. What will be the total estimated finished goods inventory and total debtors on cash cost basis?
(A) ₹ 2,00,000, ₹ 4,25,000
(B) ₹ 1,72,500, ₹ 3,40,000
(C) ₹ 1,72,500, ₹ 3,31,500
(D) ₹ 1,87,500, ₹ 3,31,500 **(2 Marks)**
3. What will be the total estimated current assets on cash cost basis?
(A) ₹ 8,31,250
(B) ₹ 7,18,750
(C) ₹ 7,25,250
(D) ₹ 7,10,250 **(2 Marks)**
4. What will be the total estimated current liabilities?
(A) ₹ 2,52,500
(B) ₹ 1,90,000
(C) ₹ 2,17,500
(D) ₹ 2,25,000 **(2 Marks)**
5. What will be the estimated working capital to be submitted by you in the proposal?
(A) ₹ 5,33,775
(B) ₹ 4,36,725

(C) ₹ 5,50,275

(D) ₹ 4,50,225

(2 Marks)

6. A company has net worth of ₹ 5,00,000. Its debt to equity ratio is 2. Interest on debt is 10%. The company earns an operating profit of ₹ 4,00,000. Tax rate is 30%.

What will be the financial leverage of the company?

(A) 1.11

(B) 1.33

(C) 1.43

(D) 1.90

(2 Marks)

7. T Ltd. is looking for a capital project in order to replace its existing old machine. It got two proposals to consider; details of which are given below:

	Proposal X	Proposal Y
Initial investment	₹ 6,50,000	₹ 7,80,000
Estimated useful life	5 Years	3 Years
Annual cash inflows	₹ 1,90,000	₹ 3,50,000
Cost of capital	10%	10%

Year	1	2	3	4	5
$PVIF_{0.10, t}$	0.909	0.826	0.751	0.683	0.621
$PVIFA_{0.10, t}$	0.909	1.736	2.487	3.170	3.791

What will be Equivalent Annual NPV for Proposal X and Proposal Y?

(A) ₹ 70,290.00, ₹ 90,450.00

(B) ₹ 18,541.28, ₹ 36,369.12

(C) ₹ 1,90,000.00, ₹ 3,50,000.00

(D) ₹ 77,326.73, ₹ 99,504.95

(2 Marks)

8. Q Ltd. is planning to pay dividend of ₹ 2 per share in next year. Growth rate of company is 8% p.a. Current market price per share is ₹ 51. Flotation cost is ₹ 1 per share.

What will be cost of equity?

- (A) 12.23%
- (B) 11.92%
- (C) 12.00%
- (D) 12.32%

(1 Mark)

Case Scenario - II

A team of professionals having expertise in the areas of Artificial Intelligence (AI), Block Chain (BC), Cloud Computing (CC) and Data Mining (DM) formed a company in the name and style of M/s. ABCD Ltd. (the company).

The aim of the company is to position itself as the best service provider in its area of operations with best user experience to its customer. Concentrating on its resources and capabilities, the company wants to target 8% year-on-year growth in revenue and 9% year-on-year growth in net profit in its business plan.

In order to identify right approach to select and implement the strategy, the company has decided to conduct in depth strategic analysis on strategic groups, objectives, performance and cost structure of companies having similar operations in the market.

In the month of March 2025, the Board of Directors of the company thought it proper to be in the business of manufacturing Robots and providing services relating thereto. The company knows that there is no linkage between existing and proposed business with specific reference to product or market or technology.

As per proposed arrangement, majority of the components of Robots will be imported from M/s. Faisla Inc. (FI), an established player in this area. The Robots will be assembled in India specifically for use at homes and in restaurants.

The company will endeavor to provide the above product while using cutting-edge technology with customized features and best of the services. The core intent will be to elevate the same to unprecedented level. In this context, the company would like to offer additional facilities like: better customer interface, online repair service and services on site to its customer.

In addition, company is of a considered view that meticulous analysis of its stakeholders will facilitate to build and maintain strong relationship with each group. As an accepted practice, greatest efforts are in place to satisfy Mr. X, the

Chief Executive Officer of the company by taking his advice and keeping him informed with all related information and developments on a regular basis.

Based on above case scenario, choose the correct option for MCQ number 9 to 13:

9. In order to position itself as the best service provider, stating year-on-year growth, indicates which one of the components of the strategic intent?
- (A) Goals
 - (B) Objectives
 - (C) Mission
 - (D) Vision
- (2 Marks)**
10. Analysis of strategic groups and cost structure can be termed as, which type of strategic analysis?
- (A) Competitor analysis
 - (B) Determinants analysis
 - (C) Environmental analysis
 - (D) Market analysis
- (2 Marks)**
11. Entering into business of manufacturing of Robots can best be described as:
- (A) Backward vertical integration
 - (B) Co-generic diversification
 - (C) Conglomerate diversification
 - (D) Divestment
- (2 Marks)**
12. Elevating customer service to unprecedented level by providing better customer interface, online repair service and service on site is known as:
- (A) Augmented marketing
 - (B) Enlightened marketing
 - (C) Social marketing
 - (D) Synchro marketing
- (2 Marks)**
13. While preparing a Power Interest matrix of stakeholders, the position of Mr. X will be categorized in which one of the following quadrants?

- (A) Key player
- (B) Keep satisfied
- (C) Keep informed
- (D) Low priority

(2 Marks)

14. In response to a scheme of subsidy by the state government, a company started manufacturing E-Vehicles. Some of the customers were not at ease with battery life and time consumed in recharging the battery. Some of the customers were apprehensive about frequent incidents of battery catching fire. All these resulted in half-hearted response from the customers in evolving EV market.

Here, the customers' response is indicating towards which one of the limitations of strategic management?

- (A) Environment is highly complex and turbulent.
- (B) Strategic management is a time-consuming process.
- (C) Strategic management is a costly process.
- (D) It is difficult to estimate the competitive response to the firm's strategy.

(2 Marks)

15. M/s. A is providing mobile phones and Wi-Fi services in the country. M/s. B and M/s. C are other similar service providers already in operation. In competitive landscape, M/s. B and M/s. C decided to merge with each other. Such merger was an unexpected development in the industry. M/s. A decided to cope-up with such eventuality by intense review of its strategy and to form a core group to handle the situation.

The situation where intense review of strategy is needed due to merger between M/s. B and M/s. C, indicates towards which type of strategic control for M/s. A?

- (A) Premise control
- (B) Implementation control
- (C) Strategic surveillance
- (D) Special alert control

(2 Marks)

16. *M/s. SPG is a multi-product multi-business enterprise. It has four prominent divisions. Each division functions as an independent product center with its own set of activities managed by respective division head, which is responsible for its own performance and profitability. This organizational structure is known as:*

- (A) *Divisional structure*
- (B) *Multi divisional structure*
- (C) *Strategic Business Unit*
- (D) *Network structure*

(1 Mark)

Answer Key

MCQ. No.	Correct Answer
1	A
2	C
3	D
4	D
5	A
6	B
7	B
8	C
9	B
10	A
11	C
12	A
13	A
14	A
15	D
16.	C

PART – II Descriptive Questions

SECTION A: FINANCIAL MANAGEMENT

Question No. **1** is compulsory.

Attempt any **two** questions out of the remaining **three** questions.

In case, any candidate answers extra question(s)/ sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Working notes should form part of the answer.

Question 1

- (a) The following information is available for S Ltd. for the year ended 31st March, 2025:

Raw Material consumed	20% of COGS
Raw Material Inventory turnover ratio	4.00
Finished Goods Inventory holding period	0.75 month
Gross profit (based on COGS)	12.50%
Debtor collection period (all sales are credit sales)	3 months
Proprietary ratio	0.3125
Fixed Assets turnover ratio (based on sales)	3.00
Fixed Assets to Total Assets	40%

You are required to prepare a Balance Sheet as on 31st March, 2025 in the following format:

Liabilities	₹	Assets	₹
Shareholders' Fund (assume no Preference Shares)		Fixed Assets	12,00,000
Long-term Debt	15,00,000	Stock of Raw Material	
Current Liabilities		Stock of Finished Goods	
		Debtors	
		Cash	
Total		Total	

(5 Marks)

- (b) Y Ltd. produces energy drinks in different flavours. Due to high demand of its product, the rate of return on its earnings is 25%. Currently, the company retains 60% of its earnings and distributes the rest. The current P/E ratio is 8 and earnings per share is ₹ 10.

According to Gordon's Model:

- (i) What will be retention ratio if the company wants to maintain its P/E ratio to 12 in current year, given that the expected rate of return for an investor is 20%? **(2 Marks)**
- (ii) What will be the expected price per share after one year if Y Ltd. achieves above-mentioned targeted P/E ratio? **(1 Mark)**
- (iii) Will there be any change in retention ratio if the company wants to maintain its P/E ratio to 10 in current year, given that the expected rate of return for an investor is 17.50%? **(2 Marks)**
- (c) Following information relates to A Ltd. for the year ended 31st March, 2025:

Profit volume ratio	24%
Operating leverage	2.00
Financial leverage	1.50
Interest Expenses	₹ 12,000
Tax rate	30%
Number of Equity Shares	1,000

You are required to:

- (i) Prepare Income Statement for the year ended 31st March, 2025.
- (ii) Calculate EPS.
- (iii) Calculate percentage change in earnings per share, if sales increase by 5%. **(2 + 1 + 2 = 5 Marks)**

Answer

(a) Workings:

(i) Calculation of Sales, Cost of Goods Sold and Gross Profit

$$\text{Fixed Assets Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

$$\begin{aligned}3 &= \frac{\text{Sales}}{12,00,000} \\ \text{So, Sales} &= 12,00,000 \times 3 = ₹ 36,00,000 \\ \text{And Cost of Goods Sold} &= 36,00,000 \times \frac{100}{(100 + 12.5)} = ₹ 32,00,000 \\ \text{Therefore, Gross Profit} &= 32,00,000 \times 12.5\% = ₹ 4,00,000\end{aligned}$$

(ii) Calculation of Stock of Raw Materials

$$\begin{aligned}\text{Raw Material Consumed} &= \text{COGS} \times 20\% \\ &= 32,00,000 \times 20\% \\ &= ₹ 6,40,000 \\ \text{So, stock of raw material} &= \frac{6,40,000}{4} = ₹ 1,60,000\end{aligned}$$

(iii) Calculation of Debtors

$$\begin{aligned}\text{Debtor Collection Period} &= \frac{12}{\text{Receivable Turnover Ratio}} = 3 \text{ months} \\ \text{Or Debtors} &= 36,00,000 \times \frac{3}{12} \\ &= ₹ 9,00,000\end{aligned}$$

(iv) Calculation of Total Assets

$$\begin{aligned}\text{Total Asset} &= \frac{\text{Fixed Assets}}{40\%} \\ &= 12,00,000 \times \frac{100}{40} = ₹ 30,00,000 \\ \text{So Total Liabilities including shareholder's fund} &= ₹ 30,00,000\end{aligned}$$

(v) Calculation of Stock of Finished Goods

$$\text{Stock of Finished Goods} = 32,00,000 \times \frac{0.75}{12} = ₹ 2,00,000$$

(vi) Calculation of Current Assets and Fixed Assets

$$\begin{aligned}\text{Current Assets} &= \text{Total Assets} - \text{Fixed Assets} \\ &= 30,00,000 - 12,00,000 = ₹ 18,00,000\end{aligned}$$

$$\begin{aligned}
 \text{And Cash Balance} &= \text{Current Assets} - (\text{Raw Material} + \text{Finished Goods} + \text{Debtors}) \\
 &= 18,00,000 - (1,60,000 + 2,00,000 + 9,00,000) \\
 &= ₹ 5,40,000
 \end{aligned}$$

(vii) Calculation of Shareholder's Fund

$$\begin{aligned}
 \text{Proprietary Ratio} &= \frac{\text{Shareholders Fund}}{\text{Total Assets}} \\
 0.3125 &= \frac{\text{Shareholders Fund}}{30,00,000} \\
 \text{Shareholders Fund} &= ₹ 9,37,500
 \end{aligned}$$

Balance Sheet as on 31st March 2025

Liabilities	(₹)	Assets	(₹)
Shareholders' Fund	9,37,500	Fixed Assets	12,00,000
Long-term Debt	15,00,000	Stock of Raw Material	1,60,000
Current Liabilities	5,62,500	Stock of Finished Goods	2,00,000
(Balancing Figure)		Debtors	9,00,000
		Cash	5,40,000
	30,00,000		30,00,000

- (b)** The question can be solved with the help of Justified P/E Ratio linked to Gordon Growth Model.

(i) Calculation of Retention Ratio

$$\begin{aligned}
 P/E &= \frac{1-b}{K_e - br} \\
 12 &= \frac{1-b}{0.20 - 0.25b} \\
 \text{Or } 2.4 - 3b &= 1 - b \\
 \text{Or } 2.4 - 1 &= 3b - b \\
 \text{Or } 2b &= 1.4
 \end{aligned}$$

Or $b = 0.70$ or 70%

So, Retention Ratio is 70%, if the company wants to maintain its P/E ratio to 12 in the current year.

(ii) Calculation of Expected Price Per Share

$$P/E = \frac{\text{Market Price Share}}{\text{Earning Per Share}}$$

P/E Ratio is 12 and EPS is ₹ 10

$$\begin{aligned}\text{So, Market Price Share} &= P/E \text{ Ratio} \times \text{Earning Per Share} \\ &= 12 \times 10 = ₹ 120\end{aligned}$$

Retention Ratio is 70%, when P/E ratio is 12, Return on Earnings is 25%

$$\text{So, New growth rate} = 0.70 \times 0.25 = 0.175 = 17.5\%$$

$$\text{Expected price after one year} = ₹ 120 \times (1 + 17.5\%) = ₹ 141$$

Therefore, the expected price per share after one year is ₹ 141 if Y Ltd. achieves the targeted P/E ratio of 12.

(iii) Calculation of change in Retention Ratio

$$P/E = \frac{1-b}{K_e - br}$$

$$10 = \frac{1-b}{0.175 - 0.25b}$$

$$1.75 - 2.5b = 1 - b$$

$$1.75 - 1 = 2.5b - b$$

$$1.5b = 0.75$$

$$b = \frac{0.75}{1.5} = 0.5 \text{ or } 50\%$$

So, Retention Ratio is 50%, if the company wants to maintain its P/E ratio to 10 in the current year.

(c) Workings:

$$\begin{aligned}
 \text{(a) Financial Leverage} &= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}} \\
 \text{So, } 1.5 &= \frac{\text{EBIT}}{\text{EBIT} - 12,000} \\
 \text{Or, } 1.5 (\text{EBIT} - 12,000) &= \text{EBIT} \\
 \text{Or, } 0.5 \text{ EBIT} &= 18,000 \\
 \text{Or, EBIT} &= ₹ 36,000 \\
 \text{(b) Operating Leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \quad \text{Or, } 2 = \frac{\text{Contribution}}{₹ 36,000} \\
 \text{Or, Contribution} &= ₹ 72,000 \\
 \text{Sales} &= \frac{\text{Contribution}}{\text{P/V Ratio}} \\
 &= \frac{₹ 72,000}{0.24} = ₹ 3,00,000 \\
 \text{(c) Fixed Cost} &= \text{Contribution} - \text{EBIT} \\
 &= 72,000 - 36,000 \\
 \text{Or, Fixed cost} &= ₹ 36,000
 \end{aligned}$$

(i) Income Statements for the year ended 31st March 2025

Particulars	A Ltd. (₹)
Sales	3,00,000
Less: Variable cost (76%)	2,28,000
Contribution	72,000
Less: Fixed Cost	36,000
Earnings before interest and tax (EBIT)	36,000
Less: Interest	12,000
Earnings before tax (EBT)	24,000
Less: Tax @ 30%	7,200
Earnings after tax (EAT)	16,800

(ii) Calculation of EPS

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of Equity Shares}} = \frac{16,800}{1,000} = ₹16.8$$

(iii) Calculation of % change in EPS if Sales increase by 5%

Degree of Combined Leverage (DCL) = Operating Leverage x Financial Leverage

$$= 2 \times 1.5 = 3$$

Alternatively, solution can be presented in following way:

$$\text{DCL} = \frac{\text{Contribution}}{\text{EBT}} = \frac{72,000}{24,000} = 3$$

$$\text{So, } \frac{\% \text{ change in EPS}}{\% \text{ change in Sales}} = 3$$

Or % change in EPS = DCL x % change in Sales

$$= 3 \times 0.05 = 0.15 \text{ or } 15\%$$

Question 2

(a) Capital structure of B Ltd. for the year ended 31st March, 2025 are as follows:

Particulars	Amount (₹)
Equity share capital @ ₹10 each	14,00,000
10% Preference share capital @ ₹1,000 each	10,00,000
Debenture @ ₹100 each	9,60,000
Bank Loan	6,40,000

- Risk-free rate of return is 14%, Market rate of return is 19% and beta of company is 1.20.
- 10% Preference shares are redeemable at ₹ 1,065.40 after 3 years.
- Interest on bank loan is 1.30 times of interest on debentures.
- Debentures are redeemable at par after 5 years. Floatation cost is ₹ 4 per debenture.
- Tax rate is 30%.

- Cost of capital is 14%.

You are required to calculate the following:

- Cost of Equity.
- Cost of preference share using YTM method.
- Post-tax cost of debenture using approximation method.
- Interest rate of bank loan.

PV factors @ 10% and 14%

Year	1	2	3	4
$PVIF_{0.10, t}$	0.909	0.826	0.751	0.683
$PVIF_{0.14, t}$	0.877	0.769	0.675	0.592

(1 + 2 + 3 + 2 = 8 Marks)

- (b) Following details are related to H Ltd.:

EPS	₹ 3.00
Return on investment	20%
Cost of equity	15%

As per Walter's Model, what would be the maximum and minimum price of share?
(2 Marks)

Answer

(a) (i) Calculation of Cost of Equity

$$K_e = R_f + \beta (R_m - R_f) = 14\% + 1.2 (19\% - 14\%) = 20\%$$

(ii) Calculation of Cost of Preference Shares:

Current Market Price P_0

$$= \text{Preference Dividend (PD)} \times PVAF(r, 14) + \text{Redeemable Value (RV)} \times PVIF(r, 14)$$

$$\text{Or } 1000 = 100 \times PVAF(r, 14) + 1065.4 \times (r, 14)$$

Calculation of NPV at discount rate of 10% and 14%

Year	Cash Flows (₹)	PVF @ 10%	PV (₹)	PVF @ 14%	PV (₹)
0	(1000)	1	(1000)	1	(1000)
1-3	100	2.487	248.70	2.322	232.20
3	1065.4	0.751	800.12	0.675	719.14
			+48.82		-48.66

$$\begin{aligned}
 \text{IRR} &= 10\% + \frac{48.82}{48.82 - (-48.66)} \times (14\% - 10\%) \\
 &= 10\% + \frac{48.82}{97.48} \times 4\% \\
 &= 10\% + 2\% = 12\%
 \end{aligned}$$

(iii) Calculation of Post-tax Cost of Convertible Debentures:**Working Note:**

Calculation of Interest rate on Bank term Loan & Debentures

Let the rate of interest on debentures be 'X'

Therefore, Rate of Interest on bank loan = $1.3X \times (0.7) = 0.91X$

$$\begin{aligned}
 \text{Kd (Debentures)} &= \frac{I(1-t) + \frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}} \\
 &= \frac{100X(1-0.3) + \frac{(100-96)}{5}}{\frac{(100+96)}{2}} \\
 &= \frac{70X+0.8}{98}
 \end{aligned}$$

Sources of capital	Amount of capital	Weights (W)	Cost (K)	W x K
Equity share capital	14,00,000	0.35	0.20	0.07
Preference share capital	10,00,000	0.25	0.12	0.03

Debentures	9,60,000	0.24	$\frac{70X + 0.8}{98}$	$\frac{16.8X + 0.192}{98}$
Bank Loan	6,40,000	0.16	0.91X	$0.16 \times 0.91X$
	40,00,000	1.00		0.14

$$0.14 = 0.07 + 0.03 + \frac{16.8X + 0.192}{98} + 0.16 \times (0.91X)$$

$$0.04 \times 98 = 16.8X + 0.192 + 14.2688X$$

$$3.728 = 31.0688X$$

$$X = 0.1199 \text{ or } 12\%$$

So, interest on debentures = 12 %

$$\begin{aligned} K_d (\text{Debentures}) &= \frac{I(1-t) + \frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}} \\ &= \frac{12(1-0.3) + \frac{(100-96)}{5}}{\frac{(100+96)}{2}} \\ &= \frac{8.4 + 0.8}{98} = 9.387\% \text{ or } 9.39\% \end{aligned}$$

(iv) Interest Rate of bank loan

$$= 12 \times 1.3 = 15.60\%$$

- (b)** In this question, since $r > K_e$, as per the Walter's Model, the price will be maximum when the company retains all the earnings. Detailed calculations are as follows:

(i) Maximum Price when company retains all the earnings i.e. $D = 0$

$$\begin{aligned} P_0 &= \frac{D + \frac{r}{K_e}(E-D)}{K_e} \\ &= \frac{0 + \frac{0.20}{0.15}(3-0)}{0.15} = \frac{(1.333) \times 3}{0.15} = \frac{4}{0.15} \\ &= ₹ 26.67 \end{aligned}$$

(ii) Minimum Price is when company distributes all its earnings

$$P_0 = \frac{3 + \frac{0.20}{0.15}(3-3)}{0.15} = \frac{3+0}{0.15} = \frac{3}{0.15} = ₹ 20$$

Question 3

(a) Following data are given for a capital project:

Annual interim cash inflows for first two years	₹ 1,00,000
Annual interim cash inflows for next two years	₹ 80,000
Useful life	4 Years
Salvage value at end of the project	₹ 50,000
Internal rate of return	12%
Cost of capital	10%

You are required to calculate the following:

- (i) Initial investment
- (ii) Net present value
- (iii) Profitability Index
- (iv) Discounted payback period
- (v) MIRR

Year	1	2	3	4
$PVIF_{0.09, t}$	0.917	0.842	0.772	0.708
$PVIF_{0.10, t}$	0.909	0.826	0.751	0.683
$PVIF_{0.11, t}$	0.901	0.812	0.731	0.659
$PVIF_{0.12, t}$	0.893	0.797	0.712	0.636
$PVIF_{0.10, t}$	1.100	1.210	1.331	1.464
$PVIF_{0.12, t}$	1.120	1.254	1.405	1.574

(1 + 1 + 1 + 1 + 2 = 6 Marks)

- (b) Z Ltd. is an unlevered company. It wants to repurchase its equity shares of ₹ 300 lakhs by issue of 12% debentures of same amount. Current market value of Z Ltd. is ₹ 1,400 lakhs. Its cost of capital is 18%. The company will

maintain same level of EBIT in future years. Dividend pay-out ratio is 100%. Company pays tax at a rate of 30%.

As per Modigliani and Miller approach, due to such change in capital structure, what will be impact on the following?

(i) Market Value of Z Ltd.

(ii) Overall cost of capital

(iii) Cost of equity

(4 Marks)

Answer

(a) (i) Initial Investment

Using IRR = 12%, the NPV is zero. So, the initial investment is equal to the present value of inflows at 12%.

Year	Cash Inflows (₹)	PVF@12%	Present Value (₹)
1	1,00,000	0.893	89,300
2	1,00,000	0.797	79,700
3	80,000	0.712	56,960
4	80,000	0.636	50,880
4	50,000 (salvage)	0.636	31,800
Total			3,08,640

Total Present Value = ₹ 3,08,640. So, Initial Investment = ₹ 3,08,640.

(ii) Net Present Value (NPV)

Year	Cash Flows (₹)	PVF@10%	Present Value (₹)
0	(3,08,640)	1	(3,08,640)
1	1,00,000	0.909	90,900
2	1,00,000	0.826	82,600
3	80,000	0.751	60,080
4	80,000	0.683	54,640
4	50,000 (salvage)	0.683	34,150
	Sum of PV of Cash Inflows		3,22,370
NPV	(3,22,370-3,08,640)		13,730

(iii) Profitability Index (PI)

$$PI = \frac{\text{Sum of PV of Cash Inflows}}{\text{Initial Cash Outflow}} = \frac{₹ 3,22,370}{₹ 3,08,640} = 1.0445$$

(iv) Discounted Payback Period:

Year	Cash Flows (₹)	PVF@10%	PV (₹)	Cumulative PV (₹)
1	1,00,000	0.909	90,900	90,900
2	1,00,000	0.826	82,600	1,73,500
3	80,000	0.751	60,080	2,33,580
4	1,30,000 (including salvage)	0.683	88,790	3,22,370

So, discounted payback = 3 years + $\frac{₹ 3,08,640 - ₹ 2,33,580}{₹ 88,790} = 3.845$
years OR 3.85 years OR 3 years 10 months 4 days approx.

(v) Modified Internal Rate of Return (MIRR)

Terminal value of cash inflows compounded to year 4 using 10%:

Year	Cash Inflows (₹)	@ 10% reinvestment rate factor	Present Value (₹)
1	1,00,000	1.331	1,33,100
2	1,00,000	1.210	1,21,000
3	80,000	1.100	88,000
4	80,000	1.000	80,000
4	50,000 (salvage)	1.000	50,000
Total			4,72,100

Total Terminal Value = ₹ 4,72,100

Now, $3,08,640 / 4,72,100 = 0.6537$ or 0.654

If we see 0.654 in year of present value discount table, the rate which is coming is around 11.20%. So, MIRR is around 11.20%.

Alternatively, solution can be presented in following way for MIRR:

$$\text{Total Return} = 4,72,100/3,08,640 = 1.5296$$

$$(1+r)^4 = 1.5296$$

$$\text{MIRR} = (1.5296)^{(1/4)} - 1 = 11.20\% \text{ (Approx)}$$

$$\begin{aligned} \text{(b) Market Value of Equity} &= \frac{\text{Net income (NI) for equity holders}}{K_e} \\ ₹ 1,400 \text{ lakhs} &= \frac{\text{Net income (NI) for equity holders}}{0.18} \\ \text{Net Income to equity holders/EAT} &= ₹ 252 \text{ lakhs} \\ \text{Therefore, EBIT} = \frac{\text{EAT}}{(1-t)} &= \frac{252 \text{ lakhs}}{(1-0.3)} = ₹ 360 \text{ lakhs} \end{aligned}$$

Income Statement

	All Equity (₹ In lakhs)	Equity & Debt (₹ In lakhs)
EBIT (as calculated above)	360	360
Interest on ₹ 300 lakhs @ 12%	—	36
EBT	360	324
Tax @ 30%	108	97.2
Income available to equity holders	252	226.8

(i) Market value of Z Ltd

$$\begin{aligned} \text{Market value of levered firm} &= \text{Value of unlevered firm} + \text{Tax Advantage} \\ &= ₹ 1,400 \text{ lakhs} + (₹ 300 \text{ lakhs} \times 0.3) \\ &= ₹ 1,490 \text{ lakhs} \end{aligned}$$

$$\begin{aligned} \text{Change in market value of the company} &= 1,490 \text{ lakhs} - 1,400 \text{ lakhs} \\ &= ₹ 90 \text{ lakhs} \end{aligned}$$

The impact is that the market value of the company has increased by ₹ 90 lakhs due to replacement of equity with debt.

(ii) Overall Cost of Capital

Market Value of Equity = Market value of levered firm - Equity repurchased

$$= ₹ 1,490 \text{ lakhs} - ₹ 300 \text{ lakhs} = ₹ 1,190 \text{ lakhs}$$

Cost of Equity (K_e) = $\frac{\text{Net Income to equity holders}}{\text{Market value of equity}} \times 100$

$$= \frac{₹ 226.8 \text{ lakhs}}{₹ 1190 \text{ lakhs}} \times 100 = 19.06\% \text{ (approx.)}$$

Cost of debt (K_d) = $12 (1 - t) = 12 (1 - 0.3) = 8.4\%$

Components	Amount (₹ In lakhs)	Cost of Capital %	Weight	WACC (K_o) %
Equity	1,190	19.06	0.80(approx.)	15.25
Debt	300	8.4	0.20(approx.)	1.68
	1490		1	16.93

(Note: If we take the weight of Equity as 0.7986 and weight of Debt as 0.2013 then WACC will be 16.91%).

Impact on Market value and Overall cost of capital of Z Ltd.

Particulars	Before restructure	After restructure	Impact
Market value of company	₹ 1,400 lakhs	₹ 1,490 Lakhs	Increase due to import of debt
Cost of equity	18%	19.06%	Increase
Overall cost of capital	18%	16.93%	Decrease

So, the impact is that the Overall Cost of Capital or K_o has fallen by 1.07% (18% - 16.93%) due to the benefit of tax relief on debt interest payment.

(iii) Cost of Equity

The impact is that cost of equity has risen by 1.06% (19.06% - 18%) due to the presence of financial risk i.e. introduction of debt in capital structure.

Note: Cost of Capital and Cost of equity can also be calculated with the help of following formulas,

$$\text{Cost of Capital } (K_o) = K_{eu} [1 - (t \times L)]$$

Where,

K_{eu} = Cost of equity in an unlevered company

t = Tax rate

$$L = \frac{\text{Debt}}{\text{Debt} + \text{Equity}}$$

$$\text{So, } K_o = 0.18 \left[1 - \left(0.3 \times \frac{\text{₹ 300 lakhs}}{\text{₹ 1490 lakhs}} \right) \right] = 0.1691 \text{ or } 16.91\% \text{ (approx.)}$$

$$\text{Cost of Equity } (K_e) = K_{eu} + (K_{eu} - K_d) \frac{\text{Debt } (1-t)}{\text{Equity}}$$

Where,

K_{eu} = Cost of equity in an unlevered company

K_d = Cost of debt

t = Tax rate

$$\begin{aligned} \text{So, } K_e &= 0.18 + \left((0.18 - 0.12) \times \frac{\text{₹ 300 lakhs } (1-0.3)}{\text{₹ 1190 lakhs}} \right) \\ &= 0.1906 \text{ or } 19.06\% \end{aligned}$$

Question 4

- (a) What is agency cost and what are its types? How can a company minimize agency cost and align the interest of manager and shareholder? **(4 Marks)**
- (b) What are key features of bridge financing? **(4 Marks)**
- (c) What is hierarchy of financing under 'Pecking Order' theory, and why does it exist? **(2 Marks)**

OR

- (c) "The total risk of any business is the combination of degree of operating and financial risk". In the light of the above statement, you are required to consider the first two columns of the given table and give your comments in the 3rd column.

Your comments should depict the total risk profile by using the most appropriate amongst the following three words only:

Lower, Higher and Moderate

Also select the best combination of DOL and DFL from the given table.

DOL	DFL	Comments
Low	High	
High	Low	
High	High	

(2 Marks)

Answer

- (a) **Meaning of Agency Cost:** Agency Problem is the chances that managers may place personal goals ahead of the goal of owners. Agency Problem leads to Agency Cost. Agency cost is the additional cost borne by the shareholders to monitor the manager and control their behaviour so as to maximize shareholders wealth.

Types of Agency Cost: Generally, Agency Costs are of four types (i) monitoring (ii) bonding (iii) opportunity (iv) structuring.

Following efforts have been made to address the issues of minimizing agency cost and align the interest of manager and shareholders:

- Managerial compensation is linked to the profit of the company to some extent and also with the long-term objectives of the company.
- Employee is also designed to address the issue with the underlying assumption that maximisation of the stock price is the objective of the investors.
- Effecting monitoring can be done.

(b) Key features of Bridge Financing

- (i) Bridge finance refers to loans taken by a company normally from commercial banks for a short period because of pending disbursement of loans sanctioned by financial institutions.
- (ii) The bridge loans are repaid/ adjusted out of the term loans as and when disbursed by the concerned institutions.
- (iii) Bridge loans are normally secured by hypothecating movable assets, personal guarantees and demand promissory notes.
- (iv) Generally, the rate of interest on bridge finance is higher as compared with that on term loans.

(c) Hierarchy of financing Pecking order:

Pecking order theory suggests that managers may use various sources for raising of fund in the following order:

1. Managers first choice is to use internal finance.
2. In absence of internal finance, they can use secured debt, unsecured debt, hybrid debt etc.
3. Managers may issue new equity shares as a last option.

The hierarchy of financing Pecking order exist to Minimize the cost of capital, financial control and avoiding negative market signals.

OR

Combination of DOL and DFL

DOL	DFL	Comments
Low	High	Moderate total risk. Best combination. Higher financial risk is balanced by lower total business risk.
High	Low	Moderate total risk. Not a good combination. Lower EBIT due to higher DOL and lower advantage of trading on equity due to low DFL.
High	High	Higher total risk. Very risky combination.