INTERMEDIATE COURSE

PAPER – 6

FINANCIAL MANAGEMENT AND STRATEGIC MANAGEMENT

SECTION A: FINANCIAL MANAGEMENT

[RELEVANT FOR MAY, 2025 EXAMINATION AND ONWARDS]

BOOKLET ON CASE SCENARIOS

BOARD OF STUDIES

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF INDIA

This booklet has been prepared by the faculty of the Board of Studies. The objective of the booklet is to provide teaching material to the students to enable them to obtain knowledge in the subject. In case students need any clarifications or have any suggestions to make for further improvement of the material contained herein, they may write to the Joint Director, Board of Studies.

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PREFACE

Under the New Scheme of Education and Training which was introduced on 1st July, 2023, 30% of the examination assessment is by the way of Objective Type Questions at Intermediate and Final level. Therefore, to provide hands-on practice for such type of questions, BOS launched MCQ Paper Practice Portal on 1st July, 2023. This online portal contains independent MCQs as well as case scenario based MCQs both for conceptual clarity and practice of the students.

In continuation to this handholding initiative and to provide quality academic inputs to the students to help them grasp the intricate aspects of the subject, the Board of studies has brought forth subject-wise booklets on Case Scenarios at Intermediate and Final level. These booklets are meticulously designed to assist Chartered Accountancy (CA) students in their preparation of the CA course.

The **'Booklet on Case Scenarios for Paper 6A: Financial Management'** will serve as revision help book towards preparing for Intermediate examination of the Institute and help the students in identifying the gaps in the preparation of the examination and developing plan to make it up. The case scenario-based MCQs are all application oriented MCQs and arise from the facts of the case. At the end of each case scenario followed by MCQs, we have also provided explanations/hints for each MCQ which will enable the students to evaluate their performance and identify areas requiring further attention.

Learning Financial Management fosters both analytical skills and a holistic perspective on key financial topics, developing students' critical thinking and acumen. At the Intermediate Level, students are encouraged not only to gain professional knowledge but also to develop the ability to apply that knowledge effectively in practical questions and case scenarios. By bridging theoretical understanding with case scenarios, the subject equips students with the critical thinking and analytical abilities, necessary for success in today's complex business environments. Through this approach, students become well-prepared to face the challenges of the professional world with confidence and skill.

After attaining conceptual clarity by reading the Study Material, you are expected to apply the concepts learnt in answering the MCQs given in this booklet. You have to read the case scenarios and the MCQs, identify the concepts involved, apply the provisions correctly in addressing the issue raised/making the computation required in the MCQ, and finally, choose the correct answer. This process of learning and understanding the concepts and solving MCQs based thereon will help you attain conceptual clarity and hone your application and analytical skills so that you are able to approach the examination with confidence and a positive attitude.

We are confident that this booklet will serve as a valuable companion in your preparation journey. We encourage students to make the most of this resource by engaging deeply with the scenarios, reflecting on the MCQs, and embracing the learning process.

Happy Reading and Best Wishes!

CASE SCENARIO 1

NV Industries Ltd. is a manufacturing industry which manages its accounts receivables internally by its sales and credit department. It supplies small articles to different industries. The total sales ledger of the company stands at ₹ 200 lakhs of which 80% is credit sales. The company has a credit policy of 2/40, net 120. Past experience of the company has been that on average out of the total, 50% of customers avail of discount and the balance of the receivables are collected on average in 120 days. The finance controller estimated, bad debt losses are around 1% of credit sales.

With escalating cost associated with the in-house management of the debtors coupled with the need to unburden the management with the task so as to focus on sales promotion, the CFO is examining the possibility of outsourcing its factoring service for managing its receivables. Currently, the firm spends about ₹ 2,40,000 per annum to administer its credit sales. These are avoidable as a factoring firm is prepared to buy the firm's receivables. The main elements of the proposal are : (i) It will charge 2% commission (ii) It will pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve.

Also, company has option to take long term loan at 15% interest or may take bank finance for working capital at 14% interest.

You were also present at the meeting; being a financial consultant, the CFO has asked you to be ready with the following questions:

Consider year as 360 days.

MULTIPLE CHOICE QUESTIONS

1. What is average level of receivables of the company?

   (a) ₹ 53,33,333

   (b) ₹ 35,55,556

   (c) ₹ 44,44,444

(d) ₹ 71,11,111

2. How much advance factor will pay against receivables?

(a) ₹ 31,28,889

(b) ₹ 39,11,111

(c) ₹ 30,03,733

(d) ₹ 46,93,333

3. What is the annual cost of factoring to the company?

(a) ₹ 8,83,200

(b) ₹ 4,26,667

(c) ₹ 5,51,823

(d) ₹ 4,00,000

4. What is the net cost to the company on taking factoring service?

(a) ₹ 4,00,000

(b) ₹ 4,26,667

(c) ₹ 3,50,000

(d) ₹ 4,83,200

5. What is the effective cost of factoring on advance received?

(a) 16.09%

(b) 13.31%

(c) 12.78%

(d) 15.89%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. **Option (b)** ₹ 35,55,556
2. **Option (c)** ₹ 30,03,733
3. **Option (a)** ₹ 8,83,200

4. Option (d) ₹ 4,83,200

5. Option (a) 16.09%

Reason:

Working Note

Particulars	**(₹)**
Total Sales	₹ 200 lakhs
Credit Sales (80%)	₹ 160 lakhs
Receivables for 40 days	₹ 80 lakhs
Receivables for 120 days	₹ 80 lakhs
Average collection period [(40 x 0.5) + (120 × 0.5)]	80 days
Average level of Receivables (₹ 1,60,00,000 × 80/360)	₹ 35,55,556
Factoring Commission (₹ 35,55,556 × 2/100)	₹ 71,111
Factoring Reserve (₹ 35,55,556 × 10/100)	₹ 3,55,556
Amount available for advance {₹ 35,55,556 - (3,55,556 + 71,111)}	₹ 31,28,889
Factor will deduct his interest @ 18%: Interest = $\frac{₹31,28,889 \times 18 \times 80}{100 \times 360}$	₹ 1,25,156
Advance to be paid (₹ 31,28,889 – ₹ 1,25,156)	₹ 30,03,733

(i) Statement Showing Evaluation of Factoring Proposal

		₹
A.	**Annual Cost of Factoring to the Company:**	
	Factoring commission (₹ 71,111 × 360/80)	3,20,000
	Interest charges (₹ 1,25,156 × 360/80)	5,63,200
	Total	8,83,200
B.	**Company's Savings on taking Factoring Service:**	₹
	Cost of credit administration saved	2,40,000
	Bad Debts (₹ 160,00,000 x 1/100) avoided	1,60,000
	Total	4,00,000
C.	Net Cost to the company (A – B) (₹ 8,83,200 – ₹ 4,00,000)	4,83,200

Effective cost of factoring = $\frac{₹\ 4,83,200}{₹30,03,733} \times 100$ = 16.09%

CASE SCENARIO 2

Tiago Ltd is an all-equity company engaged in manufacturing of batteries for electric vehicles. There has been a surge in demand for their products due to rising oil prices. The company was established 5 years ago with an initial capital of ₹ 10,00,000 and since then it has raised funds by IPO taking the total paid up capital to ₹ 1 crore comprising of fully paid-up equity shares of face value ₹ 10 each. The company currently has undistributed reserves of ₹ 60,00,000. The company has been following constant dividend payout policy of 40% of earnings. The retained earnings by company are going to provide a return on equity of 20%. The current EPS is estimated as ₹ 20 and prevailing PE ratio on the share of company is 15x. The company wants to expand its capital base by raising additional funds by way of debt, preference and equity mix. The company requires an additional fund of ₹ 1,20,00,000. The target ratio of owned to borrowed funds is 4:1 post the fund-raising activity. Capital gearing is to be kept at 0.4x.

The existing debt markets are under pressure due to ongoing RBI action on NPAs of the commercial bank. Due to challenges in raising the debt funds, the company will have to offer ₹ 100 face value debentures at an attractive yield of 9.5% and a coupon rate of 8% to the investors. Issue expenses will amount to 4% of the proceeds.

The preference shares will have a face value of ₹ 1000 each offering a dividend rate of 10%. The preference shares will be issued at a premium of 5% and redeemed at a premium of 10% after 10 years at the same time at which debentures will be redeemed.

The CFO of the company is evaluating a new battery technology to invest the above raised money. The technology is expected to have a life of 7 years. It will generate a after tax marginal operating cash flow of ₹ 25,00,000 p.a. Assume marginal tax rate to be 27%.

MULTIPLE CHOICE QUESTIONS

1. Which of the following is best estimate of cost of equity for Tiago Ltd?
   (a) 12.99%
   (b) 11.99%
   (c) 13.99%
   (d) 14.99%
2. Which of the following is the most accurate measure of issue price of debentures?
   (a) 100
   (b) 96
   (c) 90.58
   (d) 95.88
3. Which of the following is the best estimate of cost of debentures to be issued by the company? (Using approximation method)
   (a) 7.64%
   (b) 6.74%
   (c) 4.64%
   (d) 5.78%
4. Calculate the cost of preference shares using approximation method
   (a) 10.23%
   (b) 9.77%
   (c) 12.12%
   (d) 12.22%
5. Which of the following best represents the overall cost of marginal capital to be raised?
   (a) 10.52%
   (b) 17.16%
   (c) 16.17%

(d) 16.71%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (d) 14.99%

Reason:

B = retention ratio = 0.6,

R = return on equity=20%,

DPS = D0 = 20 x 0.4= 8,

MPS = P0 = EPS x PE = 20 x 15=300

G = bxr =0.6 x 20% = 12%

D1 = D0(1+g) = 8 (1.12) = 8.96

Ke = D1/P0 + g = 8.96/300 + 0.12 = 14.99%

2. Option (c) 90.58

Reason:

Price of debentures = PV of future cash flows for investor discounted at their yield

= 8 x PVAF (9.5%,10 years) + 100 x PVF (9.5%, 10 years)

= 8 x 6.2788 + 100 x 0.4035

= 50.2304 + 40.35

= 90.58

3. Option (a) 7.64%

Reason:

NP = 90.58 x 96% = 86.96,

RV = 100, Interest = 8,

T = 0.27,

n= 10

$$Kd = \frac{Int(1-t)+(RV-NP)/n}{(RV+NP)/2}$$

$$= \frac{8(1-0.27)+(100-86.96)/10}{(100+86.96)/2}$$

= 7.64%

4. Option (b) 9.77%

Reason:

$$Kp = \frac{PD+(RV-NP)/n}{(RV+NP)/2}$$

$$= \frac{100+(1100-1050)/10}{(1100+1050)/2}$$

= 9.77%

5. Option (a) 10.52%

Reason:

	Existing	Total	Additional	
Equity Funds	1,60,00,000	2,00,00,000	40,00,000	
Preference Shares		24,00,000	24,00,000	
Debt		56,00,000	56,00,000	
	1,60,00,000	2,80,00,000	1,20,00,000	
Capital gearing =	0.4			
(PSC + Debt)/ Equity =	0.4			
(Total Funds -Equity)/ Equity = 0.4				
(2.8 crores-Equity)/ equity = 0.4				
Equity =	2 crores			

Weighted avg cost of marginal capital		**Weights**	**Cost**	**W.C**
Equity Funds	40,00,000	0.333333333	14.99%	5.00%
Preference Shares	24,00,000	0.2	9.77%	2.00%
Debt	56,00,000	0.466666667	7.64%	3.565%
Total	**1,20,00,000**			**10.52%**

CASE SCENARIO 3

Kaivalyabodhi Limited **(KbL)** has completed 35 years of operations in India. It has many subsidiary & associate companies in more than 100 countries. KbL's business s include home and personal care, foods and beverages, and industrial, agricultural and other products. It is one of the largest producers of soaps and detergents in India. The company has grown organically as well as through acquisitions. Over the years, the company has built a diverse portfolio of powerful brands, some being household names.

It is planning to acquire one of its competitors named Prestige Limited, which would enhance the growth of 'KbL'. The consideration amount will be 1.5X of its average Market Capitalization. Prestige limited has 1,30,000 outstanding equity shares and its shares were traded at an average market price of ₹ 45 as on the valuation date. The consideration amount will be paid equally in 5 years where the first installment is to be paid immediately. Prestige Limited has Ko of 15%

KbL will raise the funds required through debt and equity in the ratio of 30:70. The company requires the cost of capital estimates for evaluating its acquisitions, investment decisions and the performance of its businesses.

KbL's share price has grown from ₹ 150 to ₹ 301 in the last 5 years and it will continue to grow at the same rate. KbL pays dividends regularly. The company has recently paid a dividend of ₹ 8. For the calculation of equity, an average of 52 weeks high market price in the last 5 years is to be considered, which is as follows:

Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
MPS 185	MPS 210	MPS 252	MPS 325	MPS 280

Ke calculated as per growth model holds a weight of 0.6.

The company also wishes to calculate the equity's expectation using CAPM which holds a weight of 0.4. The risk-free rate is assumed as the yield on long-term government bonds that the company regards as about 8%. KbL regards the market-risk premium to be equal to 11 per cent. Its estimation on the Beta is 0.78.

KbL will issue debentures with FV of ₹ 10,500 which is to be amortised equally over the life of 7 years. The company considers the effective rate of interest applicable to an 'AAA' rated company with a markup of 200 basis points as its coupon rate. It thinks that considering the trends over the years, 'AAA' rate is 7.5%.

Ignore taxation. Based on the above details, answer the question 1 to 5:

MULTIPLE CHOICE QUESTIONS

1. Calculate the cost of equity under both the methods
   (a) 11%, 16%
   (b) 18.65%, 10.34%
   (c) 18.65%, 16.58%
   (d) 16.5%, 9%
2. Calculate the overall cost of equity
   (a) 17.82%
   (b) 17.63%
   (c) 15.37%
   (d) 35.25%
3. Calculate the cost of debt, if the intrinsic value of debenture today is close to ₹ 9,740
   (a) 15%
   (b) 12%
   (c) 9.5%
   (d) 7.5%
4. Calculate the WACC & the amount of purchase consideration
   (a) 18%, ₹ 90,00,000
   (b) 15.21%, ₹ 87,75,000
   (c) 16.07%%, ₹ 87,75,000

(d) 15.94%, ₹ 58,50,000

5. Present Value of Purchase consideration is close to ₹

(a) 58,83,032

(b) 67,65,487

(c) 57,35,680

(d) 66,58,997

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (c) 18.65%, 16.58%

Reason:

Ke under two approaches

Calculation of Ke (Using Gordon's Model)

$$\textbf{Ke} = \frac{D1}{Po} + g$$

Share Price has grown from 150 to 301 in 5 years,

$150 (1 + g)^5 = 301.$

$(1 + g)^5 = 2.01$

Therefore, g = 15%, (From Annuity table – Re 1 after 5 years becomes ₹ 2.01 at rate of 15%)

D1 = 8 + 15% of 8 = 9.2

Po = Average of 52 weeks High price in last 5 years

Po = (185 + 210 +252 +325 +280) / 5

= 252.40

Ke = 9.2 / 252.40 + 0.15

= 18.65%

Calculation of Ke (Using CAPM)

Ke = Rf + (Rm – Rf) X Beta

= 8 + (11 x 0.78)

= 16.58%

2. Option (a) 17.82%

Reason:

Overall Ke for the company

Approach	Cost of Equity (k)	Weight (w)	K x w
Gordon's	18.65%	0.6	11.19%
CAPM	16.58%	0.4	6.63% **Total Ke = 17.82%**

3. Option (b) 12%

Reason:

Intrinsic Value of Debentures today is ₹ 9,740

WN 1 – Calculation of the Pattern of Future Cash flows

YR	PRINCIPAL (I)	INTEREST (II) = Coupon Rate = 9.5% (7.5% + 2%)	PV OF (I + II) @ 10%	PV OF (I + II) @ 15%
1	1,500	997.50	2270.45	2171.74
2	1,500	855	1946.28	1780.72
3	1,500	712.5	1662.28	1454.75
4	1,500	570	1413.84	1183.53
5	1,500	427.50	1196.83	958.31
6	1,500	285	1007.59	771.70
7	1,500	142.50	842.86	617.48
			10340.13	8938.23

$= 10\% + \frac{(10{,}340.13 - 9{,}740)}{(10{,}340.13 - 8{,}938.23)} x5\% = 12.14\% =$ **12%** (approx.)

4. Option (c) 16.07%, ₹ 87,75,000

Reason:

Ko = Wd x Kd + We x Ke

= 0.3 X 12 + 0.7 X 17.82

= 16.07%

Purchase Consideration using M-Cap method

= 1,30,000 eq shares x 45 MPS x 1.5X

= ₹ 87,75,000

5. Option (d) ₹ 66,58,997

Reason:

It is to be paid equally over 5 years and first instalment is to be paid immediately at Yr 0

Discount rate will be the Ko calculated as above of the company and not 15% which is Ko of Prestige Limited

Year	Amount each year	PV @ 16.07%	PV (₹)
0	17,55,000	1.0000	17,55,000
1	17,55,000	0.8615	15,11,933
2	17,55,000	0.7423	13,02,737
3	17,55,000	0.6395	11,22,323
4	17,55,000	0.5510	9,67,005
	TOTAL PV		**66,58,997**

CASE SCENARIO 4

Mathangi Ltd is a News broadcasting channel having its broadcasting Centre in Chennai. There are total 200 employees in the organisation including top management. As a part of employee benefit expenses, the company serves tea to its employees, which is outsourced from a third-party. The company offers tea three times a day to each of its employees. The third-party charges ₹ 10 for each cup of tea. The company works for 200 days in a year.

Looking at the substantial amount of expenditure on tea, the finance department has proposed to the management an installation of a master tea vending machine from Nirmal Ltd which will cost ₹ 5,00,000 with a useful life of five years. Upon purchasing the machine, the company will have to incur annual maintenance which will require a payment of ₹ 25,000 every year. The machine would require electricity consumption of 500 units p.m. and current incremental cost of electricity for the company is ₹ 24 per unit. Apart from these running costs, the company will have to incur ₹ 8,00,000 for consumables like milk, tea powder, paper cup, sugar etc. The company is in the 25% tax bracket. Straight line method of depreciation is allowed for the purpose of taxation.

Nirmal Ltd sells 100 master tea vending machines. Variable cost is ₹ 4,50,000 per machine and fixed operating cost is ₹ 25,00,000. Capital Structure of Mathangi Ltd and Nirmal Ltd consists of the following –

Particulars	Mathangi Ltd.	Nirmal Ltd.
Equity Share Capital (Face value ₹ 10 each)	40,00,000	40,00,000
Reserves & Surplus	25,00,000	50,00,000
12% Preference Share Capital	12,00,000	Nil
15% Debentures	20,00,000	40,00,000

Risk free rate of return = 5%, Market return = 10%, Beta of the company = 1.9

You are required to answer the following five questions based on the above details:

MULTIPLE CHOICE QUESTIONS

1. If sales of Nirmal Ltd are up by 10%, impact on its EBIT is

   (a) 30%

   (b) 60%

   (c) 5%

   (d) 20%

2. Combined leverage of Nirmal Ltd is

   (a) 1.63

   (b) 2.63

   (c) 1.315

   (d) 2

3. Discount rate that can be applied for making investment decisions of Mathangi Ltd is

   (a) 12%

   (b) 13.52%

   (c) 15%

   (d) 20%

4. Incremental cash flow after tax per annum attributable to Mathangi Ltd due to investment in the machine is

   (a) ₹ 2,39,438

   (b) ₹ 1,98,250

   (c) ₹ 98,250

   (d) ₹ 1,31,000

5. Net present value of investment in the machine by Mathangi Ltd is

   (a) ₹ 6,88,522

   (b) ₹ 1,88,522

(c) ₹ 9,91,250

(d) ₹ 4,91,250

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (d) 20%

2. Option (b) 2.63

Reason:

Particulars	Computation	Result
Sales	100 × 5,00,000	5,00,00,000
Less Variable cost	100 × 4,50,000	4,50,00,000
Contribution		**50,00,000**
Less Fixed cost		25,00,000
EBIT		**25,00,000**
Less Interest	15% × 40,00,000	6,00,000
EBT		**19,00,000**

Operating leverage = Contribution ÷ EBIT = 50 Lakhs ÷ 25 Lakhs = 2 times

Operating leverage = % Change in EBIT ÷ % Change in Sales i.e. if sales increase by 10%, EBIT increase by 20%.

Financial leverage = EBIT ÷ EBT = 25 Lakhs ÷ 19 Lakhs = 1.315 times

Combined leverage = Operating leverage × Financial leverage = 2 × 1.315 = 2.63 times

3. Option (b) 13.52%

Reason:

Particulars	Weights	Cost in %	Weights × Cost
Share Capital	40,00,000	5 + 1.9 × (10 – 5) = 14.5	5,80,000
Reserves & Surplus	25,00,000	14.5	3,62,500

Preference Share Capital	12,00,000	12	1,44,000
15% Debentures	20,00,000	15 × (1 – 25%) = 11.25	2,25,000
Total	**97,00,000**	**Total Cost**	**13,11,500**

Discount rate = WACC = 13,11,500 ÷ 97,00,000 × 100 = 13.52%

4. Option (b) ₹ 1,98,250

Reason:

Particulars	Computation	Result
Savings in Tea cost	200 Employees × 200 days × 3 times × ₹ 10	12,00,000
Less: Annual maintenance		(25,000)
Less: Cost of Electricity	500 units × ₹ 24 per unit × 12 months	(1,44,000)
Less: Consumables		(8,00,000)
Less: Depreciation	5,00,000 ÷ 5 years	(1,00,000)
Profit before tax		**1,31,000**
Less: Tax	1,31,000 × 25%	32,750
Profit after tax		**98,250**
Add: Depreciation		1,00,000
Cash flow after tax	98,250 + 1,00,000	**1,98,250**

5. Option (b) ₹ 1,88,522

Reason:

Year	Particulars	Cash flow	PVF@13.52%	PV
0	Initial investment	5,00,000	1	5,00,000
1 to 5	Savings	1,98,250	3.473	6,88,522
	Net present value			**1,88,522**

CASE SCENARIO 5

Small bus Company is into manufacturing mini buses. Since its establishment it has seen a phenomenal growth in both its market share and profitability. The financial statements (Statement of P&L and Balance Sheet) are shown below. The company enjoys the confidence of its shareholders who have been rewarded with growing dividends year after year. Last year too, the company had announced 20 per cent dividend, which was the highest in the automobile sector. The company has never defaulted on its loan payments and enjoys a favourable face with its lenders, which include financial institutions, commercial banks and other private debenture holders. The competition in the bus industry has increased in the past few years and the company foresees further intensification of competition with the entry of several foreign bus manufacturers; many of whom are market leaders in their respective countries. The mini bus segment especially, will witness entry of foreign majors in the near future, with latest technology being offered to the Indian customer. Small bus company's management realises the need for large scale investment in upgradation of technology and improvement of manufacturing facilities to beat competition.

While on one hand, the competition in the industry has been intensifying, on the other hand, there has been a slowdown in the Indian economy, which has not only reduced the demand for buses, but also led to adoption of price cutting strategies by various bus manufacturers.

The Company needs ₹ 3,12,50,000 for the investment in technology and improvement of manufacturing facilities. Company has three options for the funds:

I. The Company may issue 31,25,000 equity shares at ₹ 10 per share.

II. The Company may issue 15,62,500 equity shares at ₹ 10 per share and 1,56,250 debentures of ₹ 100 denomination bearing an 9% rate of interest.

III. The Company may issue 15,62,500 equity shares at ₹ 10 per share and 1,56,250 preference shares at ₹ 100 per share bearing an 10% rate of dividend.

The company's earnings before interest and taxes after investment is ₹ 37,50,000. Income tax rate applicable to the company is 40%.

Based on the above facts, the management of the company asked you to answer the following questions (MCQs 1 to 5):

MULTIPLE CHOICE QUESTIONS

1. What is the EPS under financial plan I?
   (a) ₹ 0.50
   (b) ₹ 0.62
   (c) ₹ 0.72
   (d) ₹ 0.44
2. What is the EPS under financial plan II?
   (a) ₹ 0.70
   (b) ₹ 0.90
   (c) ₹ 0.42
   (d) ₹ 1.10
3. What is the EPS under financial plan III?
   (a) ₹ 0.44
   (b) ₹ 0.70
   (c) ₹ 0.85
   (d) ₹ 1.20
4. What is the EBIT-EPS indifference points by formulae between Financing Plan I and Plan II?
   (a) ₹ 28,12,500.00
   (b) ₹ 29,00,000.00
   (c) ₹ 32,50,666.66
   (d) ₹ 45,15,253.56
5. What is the EBIT-EPS indifference points by formulae between Financing Plan I and Plan III?
   (a) ₹ 36,36,666.66
   (b) ₹ 45,25,000.00

(c) ₹ 28,56,256.25

(d) ₹ 52,08,333.33

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (c) ₹ 0.72

Reason:

Computation of EPS under financial plan I: Equity Financing

	(₹)
EBIT	37,50,000.00
Interest	-
EBT	37,50,000.00
Less: Taxes 40%	(15,00,000.00)
PAT	22,50,000.00
No. of equity shares	31,25,000.00
EPS	0.72

2. Option (b) ₹ 0.90

Reason:

Computation of EPS under financial plan II: Debt – Equity Mix

	(₹)
EBIT	37,50,000.00
Less: Interest	(14,06,250.00)
EBT	23,43,750.00
Less: Taxes 40%	(9,37,500.00)
PAT	14,06,250.00
No. of equity shares	15,62,500.00
EPS	0.90

3. Option (a) ₹ 0.44

Reason:

Computation of EPS under financial plan III: Preference Shares – Equity Mix

	(₹)
EBIT	37,50,000.00

Less: Interest	-
EBT	37,50,000.00
Less: Taxes (40%)	(15,00,000.00)
PAT	22,50,000.00
Less: Pref. dividend	(15,62,500.00)
PAT for equity shareholders	6,87,500.00
No. of Equity shares	15,62,500.00
EPS	0.44

4. Option (a) ₹ 28,12,500

Reason:

EBIT – EPS Indifference Point- Plan I and Plan II:

$$\frac{(EBIT)\times(1-T_C)}{N_1}=\frac{(EBIT-Interest)\times(1-T_C)}{N_2}$$

$$\frac{EBIT(1-0.40)}{31,25,000}=\frac{(EBIT-14,06,250)\times(1-0.40)}{15,62,500}$$

0.6EBIT = 1.2 EBIT – 16,87,500 = ₹ 28,12,500

5. Option (d) ₹ 52,08,333.33

Reason:

EBIT – EPS Indifference Point: Plan I and Plan III

$$\frac{EBIT(1-T_c)}{N_1}=\frac{EBIT(1-T_c)-Pref.\ Div.}{N_2}$$

$$\frac{EBIT(1-0.4)}{31,25,000}=\frac{EBIT(1-0.4)-15,62,500}{15,62,500}$$

0.6EBIT = 1.2EBIT – 31,25,000

EBIT = ₹ 52,08,333.33

CASE SCENARIO 6

MNP Ltd. is a multinational company having its operations spread mostly in India and neighbouring countries of India. The promotors of the company believed that capital structure of a company must be kept flexible and balanced, where proper mix should always be maintained between debt and equity. Such mix of debt and equity should be reviewed from time to time keeping in mind the changing situation of India and the global scenario.

The capital structure of MNP Ltd. is as under:

9% Debentures ₹ 2,75,000

11% Preference shares ₹ 2,25,000

Equity shares (face value: ₹ 10 per share) ₹ 5,00,000

Total capital of the company ₹ 10,00,000

The following are some of the additional information provided by MNP Ltd. relating to the above mentioned capital structure.

(i) ₹ 100 per debenture redeemable at par has 2% floatation cost and 10 years of maturity. The market price per debenture is ₹ 105.

(ii) ₹ 100 per preference share redeemable at par has 3% floatation cost and 10 years of maturity. The market price per preference share is ₹ 106.

(iii) Equity share has ₹ 4 floatation cost and market price per share of ₹ 24. The next year expected dividend is ₹ 2 per share with an annual growth of 5%. The firm has a practice of paying all earnings in the form of dividends.

(iv) Corporate Income-tax rate is 35%.

Since the company is a multinational company market value weights are preferred over book value weights when calculating the Weighted Average Cost of Capital (WACC) for several reasons. The company believes that market values reflect the current market perception of a company's financial health and future prospects. This is more relevant for calculating the cost of capital today, as investors base their decisions on current market conditions. Book values, based

on historical accounting principles, may not accurately represent the true economic value of the company's capital components. Market values capture the actual cost that a company would incur if it were to raise new capital in the current market. Book values might not reflect the true cost of debt due to factors like changes in interest rates or creditworthiness. Similarly, book value of equity might not reflect the current investor expectations for future dividends and growth. Market values are readily available through stock prices and market interest rates. Obtaining accurate book values, especially for intangible assets, can be a complex and time-consuming process.

On the basis of this information provided above you are required to answer the following MCQs (1 to 5):

MULTIPLE CHOICE QUESTIONS

1. Calculate the cost of equity and choose the correct answer from the following?
   (a) 14%
   (b) 15%
   (c) 16%
   (d) 17%
2. Calculate the cost of debt and choose the correct answer from the following?
   (a) 6.11%
   (b) 5.48%
   (c) 9%
   (d) 10.55%
3. Calculate the cost of preference shares and choose the correct answer from the following?
   (a) 10.57%
   (b) 5.11%

(c) 9%

(d) 10%

4. Calculate the WACC using market value weights and choose the correct answer from the following?

(a) 12.80%

(b) 5.11%

(c) 9%

(d) 10.55%

5. What will be the current market price of MNP Ltd.'s equity shares if Ke = 10%, expected dividend is ₹ 2 per share and annual growth rate is 5% from the following options:

(a) 40 per share

(b) 20 per share

(c) 30 per share

(d) 45 per share

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (b) 15%

Reason:

$$Ke = \frac{D1}{P0} + g$$

$$= \frac{2}{20} + 0.05 = 15\%$$

2. Option (b) 5.48%

Reason:

$$K_d = \frac{I(1-t) + \frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}} = \frac{9(1-0.35) + \frac{(100-102.90)}{10}}{\frac{(100+102.90)}{2}} = 5.48\%$$

3. Option (a) 10.57%

Reason:

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

$$K_p = \frac{11 + \left(\frac{100 - 102.82}{10}\right)}{\left(\frac{100 + 102.82}{2}\right)} = 10.57\%$$

4. Option (a) 12.80%

Reason:

Calculation of WACC using market value weights

Source of capital	**Market Value**	**Weights**	**After tax cost of capital**	**WACC (K_o)**
	(₹)	**(a)**	**(b)**	**(c) = (a)×(b)**
Debentures (₹ 105 per debenture)	2,88,750	0.1672	0.0548	0.0092
Preference shares (₹ 106 per preference share)	2,38,500	0.1381	0.1057	0.0146
Equity shares (₹ 24)	12,00,000	0.6947	0.1500	0.1042
	17,27,250	1.00		0.1280

WACC (K_o) = 12.80%

5. Option (a) 40 per share

Reason:

$$\text{Current Market Price} = \frac{D_1}{Ke - g}$$

$$= \frac{2}{0.10 - 0.05} = ₹ 40 \text{ per share}$$

CASE SCENARIO 7

ArMore LLP is a newly established startup dealing in manufacture of a revolutionary product HDHMR which is a substitute to conventional wood and plywood. It is an economical substitute for manufacture of furniture and home furnishing. It has been asked by a venture capitalist for an estimated amount of funds required for setting up plant and also the amount of circulating capital required. A consultant hired by the entity has advised that the cost of setting up the plant would be ₹ 5 Crores and it will require 1 year to make the plant operational. The anticipated revenue and associated cost numbers are as follows:

Units to be sold = 3 lakh sq metres p.a.

Sale Price of each sq mtr = ₹ 1000

Raw Material cost = ₹ 200 per sq mtr

Labour cost = ₹ 50 per hour

Labour hours per sq mtr = 3 hours

Cash Manufacturing Overheads = ₹ 75 per machine hour

Machine hours per sq mtr = 2 hours

Selling and credit administration Overheads = ₹ 250 per sq mtr

Being a new product in the industry, the firm will have to give a longer credit period of 3 months to its customers. It will maintain a stock of raw material equal to 15% of annual consumption. Based on negotiation with the creditors, the payment period has been agreed to be 1 month from the date of purchase. The entity will hold finished goods equal to 2 months of units to be sold. All other expenses are to be paid one month in arrears. Cash and Bank balance to the tune of ₹ 25,00,000 is required to be maintained.

The entity is also considering reducing the working capital requirement by either of the two options: a) reducing the credit period to customers by a month which will lead to reduction in sales by 5%. b) Engaging with a factor for managing the receivables, who will charge a commission of 2% of invoice value and will also advance 65% of receivables @ 12% p.a. This will lead to savings in

administration and bad debts cost to the extent of ₹ 20 lakhs and 16 lakhs respectively.

The entity is also considering funding a part of working capital by bank loan. For this purpose, bank has stipulated that it will grant 75% of net current assets as advance against working capital. The bank has quoted 16.5% rate of interest with a condition of opening a current account with it, which will require 10% of loan amount to be minimum average balance.

You being an finance manager, has been asked the following questions:

1. The anticipated profit before tax per annum after the plant is operational is .....
   (a) ₹ 750 Lakhs
   (b) ₹ 570 Lakhs
   (c) ₹ 370 Lakhs
   (d) ₹ 525 Lakhs
2. The estimated current assets requirement in the first year of operation (debtors calculated at cost) is .....
   (a) ₹ 9,42,50,000
   (b) ₹ 2,17,08,333
   (c) ₹ 7,25,41,667
   (d) ₹ 67,08,333
3. The net working capital requirement for the first year of operation is .....
   (a) ₹ 9,42,50,000
   (b) ₹ 2,17,08,333
   (c) ₹ 7,25,41,667
   (d) ₹ 67,08,333
4. The annualised % cost of two options for reducing the working capital is .....
   (a) 18.18% and 16.92%
   (b) 18.33% and 16.92%

(c) 18.59% and 18.33%

(d) 16.92% and 19.05%

5. What will be the Maximum Permissible Bank Finance by the bank and annualised % cost of the same?

(a) ₹ 4,55,03,630 and 18.33%

(b) ₹ 5,44,06,250 and 18.33%

(c) ₹ 4,45,86,025 and 18.59%

(d) ₹ 3,45,89,020 and 19.85%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (a) 750 Lakhs

Reason:

	Units	Per unit (₹)	Amount (₹)
Raw Material consumption	3,50,000	200	7,00,00,000
labour cost	3,50,000	150	5,25,00,000
Production Overheads	3,50,000	150	5,25,00,000
Cost of Production	**3,50,000**	**500**	**17,50,00,000**
Less: Stock of FG	50,000	500	2,50,00,000
COGS	**3,00,000**	**500**	**15,00,00,000**
Selling and admin exp	3,00,000	250	7,50,00,000
Cost of Sales	**3,00,000**	**750**	**22,50,00,000**
Sales	3,00,000	1000	30,00,00,000
Profit	**3,00,000**	**250**	**7,50,00,000**

Stock of FG (sq. mtr.) = 30,00,000x2/12 = 50,000

Units sold = 3,00,000

Raw material consumed (sq. mtr.) = 3,50,000

Raw Material Purchases = Consumption + RM stock (15%)

= 7,00,00,000 + 1,05,00,000 = ₹ 8,05,00,000

2. Option (a) 9,42,50,000

Reason:

Stock of Raw Material (15% of 7,00,00,000)	= 1,05,00,000
Stock of finished goods	= 2,50,00,000
Debtors (22,50,00,000 x 3/12)	= 5,62,50,000
Cash	= 25,00,000
Total Current Assets	= 9,42,50,000

3. Option (c) 7,25,41,667

Reason:

Working Capital Statement

	Amount (₹)
Stock of Raw Material (15% of 7,00,00,000)	1,05,00,000
Stock of finished goods	2,50,00,000
Debtors (22,50,00,000 x 3/12)	5,62,50,000
Cash	25,00,000
Total Current Assets	**9,42,50,000**
Creditors (8,05,00,000 x 1/12)	67,08,333
O/s Exp (18,00,00,000 x 1/12)	1,50,00,000
Total Current Liabilities	**2,17,08,333**
Net Working Capital	**7,25,41,667**

4. Option (a) 18.18% and 16.92%

Reason:

Cost reducing debtors credit period

Debtors credit period	= 2 months
Debtors balance	= 21,37,50,000(2,85,000 units) x 2/12 = ₹3,56,25,000

Debtors credit period = 3 months

Debtors balance = 22,50,00,000 x 3/12 = ₹ 5,62,50,000

Amount released from debtors = ₹ 2,06,25,000

reduction in profit (15,000 units x ₹ 250) = ₹ 37,50,000

% p.a. cost (37,50,000/2,06,25,000) = 18.18%

Costs of factoring

Commission (2% of 30 crores) = 60,00,000

Interest = ₹ 58,50,000

(30cr x 65% x 12% x 3/12)

savings = ₹ 36,00,000

Net cost of factoring $\frac{82,50,000}{65\% \text{ of } 30\text{cr. i.e. } 19,50,00,000} \times \frac{12}{3}$ = ₹ 82,50,000

% p.a. cost = 16.92%

5. **Option (b)** 5,44,06,250 and 18.33%

Reason:

Maximum Permissible Bank Finance = 75% of 7,25,41,667
= ₹ 5,44,06,250

Annualised cost of bank loan = 16.5/90% = 18.33%

CASE SCENARIO 8

Mr. Ronak, a doctor by profession, has his own private hospital at Goa having specialization in cardiac treatments. However, now-a-days, Goa not only being a place for the tourists, but is also a place for business delegates, cultural people, politicians, students and other classes of people. Gradually, Goa is opening new windows for businesses and getting recognition as an important tourist and leisure hub in South West India.

There are a number of hotels and resorts at Goa. However, the need still exists for more hotel services, in particular with the excellent service, and because of the large number of visitors from all over the country and all walks of life always favour Goa state for their recreation.

Mr. Ronak although being a doctor by profession is contemplating to establish a five-star hotel at Goa. The hotel will consist of 5 floors. The hotel will include 40 normal rooms and 8 deluxe suites, as well as a restaurant and couple of conference rooms with a small wedding hall on the ground floor. Following are the estimated occupancy rate including fare composition in the Table 1. Being a five-star hotel, breakfast would be complementary but lunch and dinner are on a-la-carte basis.

Table 1: Hotel accommodation, estimated occupancy rate and fare.

Types of Facility	Numbers	Occupancy Rate	Average Rent Per Room Per Day	Growth Rate in Rent
Normal Room	40	33% or 120 Days	₹ 8000	12%
Deluxe Suites	8	33% or 120 Days	₹ 25,000	9%
Conference with Wedding Hall	2	40 days	₹ 3,00,000	9%
Restaurant	1	All days	₹ 27,000 sales per day	8%

For the sake of simplicity in calculation, growth rate to be applied only once after completion of 10 years.

The estimated cost of land will be ₹ 250 million and the construction cost will be ₹ 100 million. The estimated salvage value at the end of 15th year will be 25% of the cost of construction. The cost of furniture will be of ₹ 1,50,000 for each normal room and ₹ 3,80,000 for each deluxe suite. The cost of the furniture for the conference room with wedding hall will be ₹ 7,00,000 each and for restaurant it will be 10,00,000. In addition, the hotel will require 4 elevators at different locations and will be costing around ₹ 35,00,000 each. The cost of buying and installing electronic appliances like TV sets, Air conditioners, Fridge etc. will be around ₹ 35 million. Elevators would be depreciated at a rate of 5% p.a. Electronic appliances will have a salvage value of 15% of its acquisition cost at the end of 15 years.

The hotel will be built by renowned builder named **'Harihar Infrastructure'**. The builder estimated that building will survive for 15 years. The required furniture will be supplied by the local reputed furniture company named **Veru Furnishings Ltd**. They ensured that furniture will go for 10 years very smoothly. At the end of tenth year, new furniture for normal rooms and deluxe suites will be bought and old furniture for the same will be sold by the hotel owner. The owner of the hotel estimates that he would be able to purchase the required furniture at 15% higher price than the previous purchase price. The salvage values of the furniture at the end of tenth year will be 5% of their purchase prices with no book value remaining. Furniture at restaurant, conference and wedding hall will not require any major changes as such except for minor renovation which will cost ₹ 20,00,000 in total at the end of 12th year. Any scrap generated on account of such renovation will be sold at ₹ 1,75,000.

In order to boost the tourism industry at Goa, the state govt will be granting subsidy of 15% on the initial capex incurred, it will be paid at the time of cost incurred and additional subsidy of 10% on annual revenue expenses for the first 3 years of operation, but will be credited directly in the bank account only at the end of 5th year and the same shall be non-taxable.

The total annual recurring expenses will be ₹ 1,80,00,000/-. It includes salaries to managers, staff and employees, utilities expenses, house keeping and security services' contract, AMC for electronic appliances, restaurant supplies and materials, other miscellaneous expenses, etc.

After the end of 10 years, annual recurring expenses will increase at a rate of 10% which is to be applied once. Furthermore, the hotel authority is determined to provide the best and professional hotel services to the clients by offering training to the employees. They decided to spend ₹ 5,00,000 per year for the purpose of training of the employees.

The hotel project will be entitled to enjoy tax holiday for the first five years after which the corporate tax rate of 25% will also be applied for the hotel. The Cost of equity for the company is 12% and the estimated hurdle rate by considering the structure of capital of the proposed hotel is fixed at 15%.

(Depreciation to be taken on SLM basis and assume 360 days in a year. Ignore depreciation on furniture used in restaurant, conference and wedding hall)

Based on above, please answer to the following MCQs.

MULTIPLE CHOICE QUESTIONS

1. The amount of net initial investment required is:
   (a) ₹ 41.044 Crores
   (b) ₹ 34.887 Crores
   (c) ₹ 6.156 Crores
   (d) ₹ 40.74 Crores
2. NPV of the project is:
   (a) ₹ 7.0532 Cr
   (b) ₹ 8.4029 Cr
   (c) ₹ 8.4935 Cr
   (d) ₹ 2.4700 Cr
3. Pay Back period of the project to recover the initial investment is:
   (a) 5.12 years
   (b) 12.02 years

(c) 11.80 years

(d) 4.46 years

4. Estimated Recurring accounting profit/(loss) for first three years are:

(a) ₹ 7.0928 Cr p.a

(b) ₹ 6.9078 Cr p.a

(c) ₹ 6.9937 Cr p.a

(d) ₹ 9.6120 Cr p.a

5. IRR of the project is:

(a) 16.25%

(b) 19.39%

(c) 15%

(d) 12%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (b) ₹ 34.887 Crores

Reason:

Amount Initial Investment required:

(A)	**Cost of Land & Construction Cost**	= 250 + 100 = 350 million i.e. 35,00,00,000
(B)	**Furniture Cost**	
	Normal Rooms = 40 x 1,50,000	= 60,00,000
	Suite rooms = 8 x 3,80,000	= 30,40,000
	Conference and wedding halls	= 2 x 7,00,000
		= 14,00,000
	Restaurant	= 10,00,000
(C)	**Elevators =** 4 x 35,00,000	= 1,40,00,000
(D)	**Electronic Appliances**	= 3,50,00,000

Gross Investment Required = ₹ 41,04,40,000

Less: 15% Govt Subsidy on Capex = ₹ (6,15,66,000)

Net Initial Investment to be incurred by Hotel = ₹ 34,88,74,000

2. Option (a) ₹ 7.0532 Cr

Reason:

PV of Cash Inflow = ₹ 42.2317 Cr

As per WN - 2

(-) PV of Cash Outflow = ₹ 35.1785 Cr

As per WN - 1

NPV = 7.0532 CR

Note: Discounting Rate would be the hurdle rate and not cost of equity as hurdle rate means the overall cost of capital

WN 1 - Calculation of PV of Cash Outflows

		(₹)	DF @ 15%	PV (₹)
Year 1	Initial Net Investment	4,88,74,000	1.0000	34,88,74,000
At the end of 10th Year				
Year 10	Purchase of new furniture (At 15% higher price)			
	Normal Rooms	69,00,000	0.2472	17,05,680
	Suite Rooms	34,96,000	0.2472	8,64,211
At the end of 12th Year				
Year 12	Renovation at restaurant, conference and wedding halls (Net)	18,25,000	0.1869	3,41,093
				35,17,84,983

WN – 2: Calculation of PV of Cash Inflows

	Year 1 to 5 (₹)	Year 6 to 10 (₹)	Year 11 to 15 (₹)
Sales			**(Apply growth rate here)**
Normal Rooms	3,84,00,000	3,84,00,000	4,30,08,000

Suites	2,40,00,000	2,40,00,000	2,61,60,000
Conf & Hall	2,40,00,000	2,40,00,000	2,61,60,000
Restaurant	97,20,000	97,20,000	1,04,97,600
Total Sales (A)	**9,61,20,000**	**9,61,20,000**	**10,58,25,600**
Less:			
Annual Recurring Exp (Excl Depreciation)	1,80,00,000	1,80,00,000	1,98,00,000
Training Exp	5,00,000	5,00,000	5,00,000
Depreciation			
Building	50,00,000	50,00,000	50,00,000
Elevators	7,00,000	7,00,000	7,00,000
Electronic App	19,83,333	19,83,333	19,83,333
Furniture (Old)	8,58,800	8,58,800	
Furniture (New)			10,39,600
TOTAL EXP (B)	**2,70,42,133**	**2,70,42,133**	**2,90,22,933**
NPBT (A - B)	6,90,77,867	6,90,77,867	7,68,02,667
(-) Tax	Nil (Tax Holiday)	1,72,69,466	1,92,00,666
NPAT	6,90,77,867	5,18,08,400	5,76,02,000
(+) Depreciation	85,42,133	85,42,133	87,22,933
(+) Cash Inflows from Operation	7,76,20,000	6,03,50,533	6,63,24,933
PVAF@ 15%	3.3522	1.6666	0.8285
PV of Cash Inflows from Operations	26,01,97,764	10,05,80,199	5,49,50,207

(+) PV of Other Cash Inflows

In year 5 **-** Govt Subsidy on first 3 years of = 55,50,000 x 0.4972 = ₹ 27,59,460

Annual Revenue Exp

In year 10 - Salvage Value of Old Furniture = 4,52,000 x 0.2472 = ₹ 1,11,734

In year 15 - Salvage of building and electronic appliance
= 3,02,50,000 x 0.1229 = ₹ 37,17,725

Therefore, Total PV of Cash Inflows = ₹ 42,23,17,089

3. **Option (d)** 4.46 years

Reason:

Total Net Initial Investment Incurred = ₹ 34,88,74,000

Cumulative of Total Cash Inflows (not discounted cash inflows)

Year	Total Cash Inflows (₹)	Cumulative of Cash Inflows (₹)
1.	7,76,20,000	7,76,20,000
2.	7,76,20,000	15,52,40,000
3.	7,76,20,000	23,28,60,000
4.	7,76,20,000	31,04,80,000
5.	8,31,70,000 (Govt Subsidy of 55,50,000 added here)	39,36,50,000
6.	6,03,50,533	45,40,00,533

From the above table, it can be seen that the initial net investment incurred is getting recovered after 4th year but before the end of 5th year i.e. somewhere between 4th & 5th Year.

$$\text{Payback period} = 4 + \frac{3,83,94,000}{8,31,70,000}$$

= 4 + 0.46 = 4.46 years

4. **Option (a)** ₹ 7.0928 Cr p.a.

Reason:

Accounting profit **= NPAT + Govt Subsidy on Revenue Expense**

= 6,90,77,867 + (1,85,00,000 x 10%)

= 6,90,77,867 + 18,50,000

= 7,09,27,867 per annum

5. **Option (b)** 19.39%

Reason:

DF @ 15% NPV = ₹ 7.0532 Cr

DF @ 20% NPV = 34,10,68,926.17 - 35,07,57,719.00

= (₹ 0.9688 Cr)

$$\text{IRR} = \text{Lower Rate \%} + \frac{\left\{ \text{NPV @Lower rate \% X} \left(\text{Higher Rate \%} - \text{Lower Rate\%} \right) \right\}}{\text{NPV @ Lower rate \%} - \text{NPV @ Higher Rate \%}}$$

IRR = 15 + (7.0532 *5 / 8.0220)

= 15 + 4.396

= 19.396%

CASE SCENARIO 9

Samvar Ltd, a leading **FMCG** company having its current presence in more than 150 Tier I and Tier II cities in India. The stores are operating in the brand name of **GoMART** competing with Reliance fresh, Walmart, BigBazaar and other chains. Owing to the increase in demand from Tier III cities and rural areas, it is planning for massive expansion and is contemplating to open up additional 50 stores which will have variety of FMCG products.

The CFO and his team estimate that the funds needed for massive expansion would be ₹ 200 lakhs per store. Such funds would be utilized for buying out a space and setting up a store, buying the other required fixed assets, etc. Central government will provide a revenue subsidy of 15% on Gross profit if the overall cost of capital doesn't exceed 10%.

Apart from above, CFO and his team require an estimate on the additional capital needed based for the smooth running of fixed assets and its daily operations. Based on their market research, they have collected the other information for each store which is as follows-

Average Sales would be ₹ 120 lakhs p.a. with a GP margin of 18%. Customers pay through different digital modes and channels including POS systems (Debit and credit cards) which generally takes approx. 9 days for the funds to get credited in the bank account. 15% of the customers use debit and credit cards to make the payment. Installing a POS system comes with a fee of 2% of total sales through POS.

Being a FMCG outlet, inventories of multiple products need to be kept. Different products have different storage period. However primarily, products are classified into three broad categories, Durable, Semi Durable & Perishable. Perishable products comprise 60% of sales, whereas semi-durable is 25% and balance is for durable products. Inventory storage period for perishable, semi-durable & durable products are 10 days, 30 days & 60 days respectively. Suppliers of these products provide a credit period of average 30 days.

Each store will employ around 20 personnel of a different hierarchy and monthly average salaries to staff for each store is estimated at ₹ 4 lakhs per month. Company will pay employees' dues on the 1st of next month.

Samvar Ltd plans to keep optimum cash balance in hand as suggested by Baumol's model. Excess cash balance if any, will be invested in the marketable securities which will generate a return of 12% p.a. The total disbursement for the year is estimated at ₹ 1.50 lakhs per month with the transaction cost of ₹ 20 per transfer to the disbursement account.

The optimum capital structure with debt equity of 2:1 has been proven ideal for raising the finance and company wishes to follow the same pattern for the additional funds required for each store. Trade credit can also be utilized for financing the expansion needs.

The cost of raising debt and equity for each store is as per the slabs as under:

Project Cost *	Cost of Debt	Minimum rate expected by equity share holders
Upto 80 lakhs	10%	12.5%
Above 80 lakhs but upto 150 Lakhs	11.5%	13.5%
Above 150 lakhs & Upto 250 lakhs	12%	14%
Above 250 lakhs	13.5%	15%

*It means that upto 80 lakhs of project cost company can raise debt at 10% and equity at 12.5% and so on.

Tax rate applicable to the corporate is 25%

Based on the above details, calculate the following for each store:

MULTIPLE CHOICE QUESTIONS

1. The optimum Cash balance is
   (a) ₹ 7,071
   (b) ₹ 26,500
   (c) ₹ 7,150
   (d) ₹ 24,495
2. The Gross and Net Working Capital for the next year would be
   (a) ₹ 6.7730 L, (5.9396 L)

(b) ₹ 6.7730 L, 12.7125 L

(c) ₹ 200 L, (5.9396L)

(d) ₹ (5.9396 L), 6.7730 L

3. The amount of total funds needed to setup a store is

(a) ₹ 194.0605 L

(b) ₹ 200 L

(c) ₹ 6.7730 L

(d) ₹ 206.7730 L

4. The overall cost of capital for raising additional funds for setting up of each store is

(a) 10.01%

(b) 10.65%

(c) 9.90%

(d) 8.91%

5. The amount of revenue subsidy granted by the central govt is

(a) ₹ 3 L

(b) ₹ 3.24 L

(c) Nil

(d) ₹ 2.25 L

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (d) ₹ 24,495

Reason:

As per William J Baumol,

optimum cash balance = $\sqrt{\frac{2AT}{O}}$

A = Annual Cash disbursement

T = Cost per transfer

O = Opportunity cost

$$= \sqrt{\frac{2 \text{ X}18,00,000 \text{ X } 20}{0.12}} = ₹ 24,495/-$$

2. Option (a) ₹6.7730 L, (5.9396 L)

Reason:

Gross working capital is sum of total current assets and net working capital is Gross working capital less current liabilities.

Estimation of Working Capital Statement

	Amount (₹)	Amount (₹)
A) CURRENT ASSETS / GROSS W.C		
1. FG Inventory **WN - 1**	6,15,000	
2. Trade receivables **WN - 2**	37,800	
3. Cash/ bank balance **(Calculated in Solution 1)**	24,495	**6,77,295**
B) CURRENT LIABILTIES		
1. Trade payables **WN - 3**	8,71,250	
2. Outstanding salaries **WN - 4**	4,00,000	**12,71,250**
NET WORKING CAPITAL (A) - (B)		**(5,93,955)**

WN – 1 Calculation of FG Inventory

FG Inventory $= \text{COGS} \times \frac{\text{FG STORAGE PERIOD (DAYS)}}{360}$

COGS = 120 Lakhs x 82% = 98.40 Lakhs

Perishable = 98.40 x 60% x 10 /360 = 1.64 Lakhs

Semi Durable = 98.40 X 25% X 30 /360 = 2.05 Lakhs

Durable = 98.40 X 15% X 60 /360 = 2.46 Lakhs

Total = ₹ 6.15 lakhs

WN – 2 Calculation of Trade Receivables

Since, company is into FMCG industry, sales are always on cash basis as no credit is given to any of the custome₹ However, as mentioned in the case study, company will get the credit in the bank account only after 9 days for those customers that pay through POS (debit and credit cards). It means companies funds' get blocked for 9 days.

Company's trade receivable would only comprise of 15% of total sales as rest are through cash basis

Trade Receivables = Cost of Sales x Days Blocked / 360

= 15.12 L x 9 / 360

= 0.378 Lakhs

Cost of Sales = COGS + POS Transaction fees

= (98.40 L x 0.15) + (120 L x 0.15 x 2%)

= 15.12 Lakhs

WN – 3 Calculation of Trade Payables

Trade Payables = Purchases x Average Credit period in days/ 360

= 104.55 x 30 /360

= 8.7125 Lakhs

Purchases = COGS (+) Closing Stock (-) Opening Stock

Since, company is planning to open up new store, its opening stock would be NIL but there would be definitely a closing FG stock which is calculated in WN -1

Therefore, Purchases = 98.40 L + 6.15 L - 0 = 104.55 Lakhs

WN – 4 Calculation of Outstanding salaries

Salaries are paid on 1st of next month, thereby meaning it has been outstanding for a period of 30 days assuming salaries accruing evenly throughout.

Outstanding salaries = 48,00,000 x 30 / 360 = 4,00,000

3. Option (a) ₹ 194.0605 L

Reason:

Total Capital needed = Total capital needs (Fixed assets) + Working Capital needs

= 200 L + (5,93,955)

= ₹ 194.0605 L

4. Option (c) 9.90%

Reason:

Samvar Ltd would require financing of ₹ 194.0605 lakhs from debt and equity and not ₹ 200 lakhs as trade credit is also considered to be a source of finance as mentioned in the case study.

Furthermore, the overall cost of raising this additional fund for each store of ₹ 194.0605 needs to be calculated slab wise

Project Cost	Weights (W)	Cost (K)	W X K	Total cost (₹)
Upto 80 Lakhs	Debt = 0.67 Equity = 0.33	Kd = 10 (1 - 0.25) = 7.5 Ke = 12.5	Ko = 9.167%	= 80L x 9.167% **= 7.334 Lakhs**
Above 80 L upto 150 L	Debt = 0.67 Equity = 0.33	Kd = 11.5 (1-0.25) = 8.625 Ke = 13.5	Ko = 10.25%	= 70L x 10.25% **= 7.175 Lakhs**
Above 150 L upto 250 L	Debt = 0.67 Equity = 0.33	K = 12 (1-0.25) = 9 Ke = 14	Ko = 10.667%	=44.0605L x 10.667% **= 4.7Lakhs**

Total Funds = 194.0605 L

Total Cost (₹) = 7.334 L + 7.175 L + 4.700 L = 19.209 L

Ko = Total Cost (₹) / Total Funds

= 19.209 / 194.0605

= 9.90%

5. Option (b) ₹ 3.24 L

Reason:

Since the Overall Cost of Capital is below 10%, Samvar Ltd is eligible for revenue subsidy

Revenue Subsidy = GP x 15%

= 21.6 L x 15%

= ₹ 3.24 Lakhs

CASE SCENARIO 10

Twigato Ltd is an all equity financed company in the food delivery business and is considering an expansion into quick grocery delivery business segment. It is the market leader in the current food delivery business with a valuation of ₹ 5750 crores. From the discussion in the recent fund-raising meeting with the venture capitalists, it has been noted that the quick delivery business is expected to be run for 6 years, after which it will be sold to another entity for a target valuation of 2 times of the investment made in the business segment. The new segment will be funded by debt, preference and equity shares in the ratio of 3:2:5. The quick grocery delivery would require ₹ 30 crores of investment to start with and subsequently it will require additional infusion of ₹ 20 crores in start of year 2 and ₹ 25 crores of fund infusion in start of year 4. The operating financials of the business is expected to be on following lines for the 1st year of operation.

No of quick orders = 10,000 per day

No of overnight orders = 2,000 per day

Ticket sizes quick orders: 5,000 orders below ₹ 500, 3,000 orders between ₹ 500 and ₹ 1,000 and 2,000 orders above ₹ 1000 with average ticket size being ₹ 700 per order.

Delivery charges are applicable for orders below ₹ 500, which is flat ₹ 40 per order.

The company would charge 5% of invoice value from the seller of the quick delivery products and 7% in case of overnight delivery.

Overnight deliveries would be available to only subscription-based customers and subscription charges are ₹ 5,000 p.a. Each overnight order is expected to be having an average ticket size of ₹ 750 per order. Each subscription-based customer is expected to place order every alternate day on an average.

The quantity of orders is expected to be growing at a rate of 20%, 15%,10%, 5% for 1st 4 years of operations. Beyond this it is expected to be remaining constant. The proportion of orders is expected to remain unchanged.

To attract the prospective customers, it is likely to spend heavily on advertising in initial years. The advertising and promotional activities would cost ₹ ₹ 7 crores, ₹ 8 crores and ₹ 10 crores in year 1,2 and 3 respectively.

Remuneration to delivery partners will be ₹ 15,000 p.m. fixed plus ₹ 20 per delivery. Each delivery partner can deliver an average of 30 orders per day. An additional provision of 50% of extra delivery partners to be made to consider the unexpected spike in orders on special occasions and holidays. The IT infrastructure and customer care expenses would amount to ₹ 8 crores each year.

Income Tax allows 20% p.a. depreciation on straight line basis for any fresh investments. Applicable tax rate can be taken as 25%. The after-tax cost of debt, preference share, and equity share would amount to 10%, 11% and 15% respectively.

Assume 365 days in a year.

MULTIPLE CHOICE QUESTIONS

1. Which of the following is the best estimate of discounting rate for the project?
   (a) 12.00%
   (b) 11.55%
   (c) 12.70%
   (d) 13.75%
2. Which of the following is the best measure of delivery partners required in year 1?
   (a) 600
   (b) 720
   (c) 828
   (d) 911
3. Which of the following is the best measure of total revenue in year 3?
   (a) 30 crores

(b) 25.78 crores

(c) 33.66 crores

(d) 25.91crores

4. Which of the following years best represents the years of loss?

(a) Year 1 only

(b) Year 1 and 2 only

(c) Year 1,2 and 3 only

(d) Year 1,2,3 and 4 only

5. Which of the following in the best measure of NPV of the project?

(a) 39.35 crores

(b) (25.63) crores

(c) 23.76 cores

(d) (35.67) crores

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (c) 12.70%

Reason:

Calculation of cost of capital

Capital	Weight	Cost	Product
Debt	0.3	10%	3.00%
Preference	0.2	11%	2.20%
Equity	0.5	15%	7.50%
	Ko=		**12.70%**

2. Option (a) 600

3. Option (c) 33.66 crores

4. Option (d) Year 1,2,3 and 4 only

5. Option (a) 39.35 crores

Reason:

Year		1	2	3	4	5	6
A) No. of quick deliveries p.d.		10,000	12,000	13,800	15,180	15,939	15,939
B) No. of overnight deliveries p.d.		2,000	2,400	2,760	3,036	3,188	3,188
C) No. of quick deliveries p.a.		36,50,000	43,80,000	50,37,000	55,40,700	58,17,735	58,17,735
D) No. of overnight deliveries p.a.		7,30,000	8,76,000	10,07,400	11,08,140	11,63,547	11,63,547
E) Chargeable quick deliveries		18,25,000	21,90,000	25,18,500	27,70,350	29,08,868	29,08,868
F) No. of delivery partners	1.5x (A+B)/ 30	600	720	828	911	956	956

Calculation of CFAT

Revenue (in crores)							
From quick deliveries (QD)	(E x 40)	7.30	8.76	10.07	11.08	11.64	11.64
From QD seller commission	(C x 700 x 5%)	12.775	15.330	17.630	19.392	20.362	20.362
From Overnight delivery subscription	(B/2 x 5000)	0.500	0.600	0.690	0.759	0.797	0.797
From OD seller commission	(C x 750 x 7%)	3.83	4.60	5.29	5.82	6.11	6.11
Total Revenue		**24.41**	**29.29**	**33.68**	**37.05**	**38.90**	**38.90**
Cost (in crores)							
Advertising		7	8	10	0	0	0
IT and customer care		8	8	8	8	8	8

Delivery partner salary	(F x 15000)	0.90	1.08	1.24	1.37	1.43	1.43
Delivery partner commission	(C+D) x 20	8.76	10.51	12.09	13.30	13.96	13.96
Depreciation	on investment in year 0	6	6	6	6	6	
	on investment in year 2		4	4	4	4	4
	on investment in year 4				5	5	5
Total Cost		**30.66**	**37.59**	**41.33**	**37.66**	**38.40**	**32.40**
PBT		(6.25)	(8.30)	(7.65)	(0.61)	0.51	6.51
Less: Tax		1.56	2.08	1.91	0.15	(0.13)	(1.63)
PAT		(4.69)	(6.23)	(5.74)	(0.46)	0.38	4.88
Add: Depreciation		6.00	10.00	10.00	15.00	15.00	9.00
CFAT		**1.31**	**3.77**	**4.26**	**14.54**	**15.38**	**13.88**

Computation of NPV

Year	Particulars		Cash Flows (in crores)	PVF @ 12.7%	PV (in crores)
0	Investment		(30.00)	1.00	(30.00)
1	Investment		(20.00)	0.89	(17.75)
3	Investment		(25.00)	0.70	(17.46)
1	Operating CFAT		1.31	0.887	1.16
2	Operating CFAT		3.77	0.787	2.97
3	Operating CFAT		4.26	0.699	2.98
4	Operating CFAT		14.54	0.620	9.01
5	Operating CFAT		15.38	0.550	8.46
6	Operating CFAT		13.88	0.488	6.77
6	Sale Proceeds	(30+20+25) x 2	150	0.488	73.21
	NPV				**39.35**

CASE SCENARIO 11

KGF Chemicals Ltd., a prominent player in the chemical industry, faces the challenge of determining its growth trajectory and dividend policy to maximize shareholder value. With expectations of significant growth in the near term and stabilization in the long run, the company must strategically manage its resources to align with investor expectations.

KGF Chemicals Ltd. is a leading manufacturer and supplier of specialty chemicals catering to diverse industries such as pharmaceuticals, agriculture, and manufacturing. Established with a commitment to innovation and quality, the company has garnered a strong market presence over the years.

The company is projected to experience robust growth at a rate of 14% per annum for the next four years. Subsequently, the growth rate is expected to stabilize at the national economy's rate of 7% indefinitely. This forecast reflects both the company's expansion plans and the broader economic landscape.

KGF Chemicals Ltd. paid a dividend of ₹ 2 per share last year (Do = 2). The management faces the crucial decision of balancing dividend payouts with reinvestment opportunities to sustain growth and meet shareholders' expectations. The dividend policy must strike a delicate balance between rewarding shareholders and retaining earnings for future investments.

The required rate of return on equity shares is 12%, indicating investors' expected return given the company's risk profile and market conditions. Management must carefully assess investment opportunities to ensure they meet or exceed this threshold, thereby generating value for shareholders over the long term.

In navigating the dynamic landscape of the chemical industry, KGF Chemicals Ltd. must adopt a proactive approach to managing growth and dividend policy. By aligning strategic decisions with investor expectations and market dynamics, the company can position itself for sustainable success while maximizing shareholder value. Continual evaluation and adaptation will be essential to capitalize on growth opportunities and maintain competitiveness in the evolving marketplace.

You are required to answer the following on the basis of above information:

MULTIPLE CHOICE QUESTIONS

1. What is the expected dividend at the end of 4th Year?
   (a) ₹ 2.1097
   (b) ₹ 2.1483
   (c) ₹ 2.9631
   (d) ₹ 3.3779
2. What is the present value of Expected Dividends to be received in next four years?
   (a) ₹ 11.2202
   (b) ₹ 8.3655
   (c) ₹ 9.8423
   (d) ₹ 6.2176
3. Determine the Market Price of shares at the end of 4th Year?
   (a) ₹ 72.28
   (b) ₹ 67.55
   (c) ₹ 50.67
   (d) ₹ 77.34
4. Determine the Present Value of Market Price of shares at the end of 4th Year?
   (a) ₹ 49.18
   (b) ₹ 32.22
   (c) ₹ 45.79
   (d) ₹ 42.96
5. Calculate today's market price of the share.
   (a) ₹ 59.03
   (b) ₹ 54.33
   (c) ₹ 57.01
   (d) ₹ 57.54

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. **Option (d)** ₹ 3.3779
2. **Option (b)** ₹ 8.3655
3. **Option (a)** ₹ 72.28
4. **Option (c)** ₹ 45.79
5. **Option (b)** ₹ 54.33

Reason:

As per Dividend discount model, the price of share is calculated as follows:

P = Sum of PV of Expected Dividends + PV of Share Price at the end of the period

$$P = \frac{D_1}{(1+K_e)^1} + \frac{D_2}{(1+K_e)^2} + \frac{D_3}{(1+K_e)^3} + \frac{D_4}{(1+K_e)^4} + \frac{D_5}{(K_e-g)} \times \frac{1}{(1+K_e)^4}$$

Where,

P = Price per share

Ke = Required rate of return on equity

g = Growth rate

Year	$D_1 = D_0(1+g)$	PV Discount Factor @ 12%	PV in ₹
1	2(1+14%) =2.28	0.893	2.0364
2	2.28(1+14%) =2.5992	0.797	2.0715
3	2.5992(1+14%) =2.9631	0.712	2.1097
4	2.9631(1+14%) =**3.3779**	0.636	2.1483
Total PV of Expected Dividend			₹ **8.3655**

$$P_4 = \frac{D_5}{K_e - g} = \frac{D_4(1+g)}{K_e - g} = \frac{3.3779(1+7\%)}{12\% - 7\%} = ₹\ 72.28$$

PV of share at the end of 4th Year = ₹ 72.28 x 0.636 = ₹ 45.97

Market Price of shares = ₹ 8.3655 + ₹ 45.97 = ₹ 54.33

CASE SCENARIO 12

RNOC Ltd is a listed company and has been facing a cash crunch situation since a while. The CFO is of the opinion that excess stock maintained as per the instructions of management of the company is the reason for cash crunch. However, the management states that its product line requires larger amount of inventory due to greater variety of product line and customer may ask for any type of product. To maintain competitive advantage, the company should be able to cater to customer needs as and when required. The management is highly critical of the collection team as the management feels that they are not collecting the receivables within time as per industry standards.

You have been hired by the company as a financial consultant. Management has provided you the latest audited financial statements and also relevant industry statistics. You are required to advice the company to improve its liquidity position.

Statement of Profit and Loss		₹	₹
Sales			1,25,00,000
Cost of goods sold			
Opening Stock		23,00,000	
Add: Purchases		80,00,000	
Add: Direct expenses		12,00,000	
Less: Closing Stock		(38,60,000)	(76,40,000)
Gross Profit			48,60,000
Less: Operating Expenses			
Administrative Expenses		13,20,000	
Selling and Distribution Expenses		15,90,000	(29,10,000)
Operating Profit			19,50,000
Add: Non-Operating Income			3,28,000
Less: Non-Operating Expenses			(1,27,000)
Profit before Interest and taxes			21,51,000

Less: Interest			(4,39,000)
Profit before tax			17,12,000
Less: Taxes			(4,28,000)
Profit after Tax			12,84,000
Balance Sheet			
Sources of Funds		₹	₹
Owned Funds			
	Equity Share Capital	30,00,000	
	Reserves and Surplus	18,00,000	48,00,000
Borrowed Funds			
	Secured Loan	10,00,000	
	Unsecured Loan	4,30,000	14,30,000
Total Funds Raised			62,30,000
Application of Funds			
Non-Current Assets			
	Building	7,50,000	
	Machinery	2,30,000	
	Furniture	7,60,000	
	Intangible Assets	50,000	17,90,000
Current Assets			
	Inventory	38,60,000	
	Receivables	39,97,000	
	ST investments	3,00,000	
	Cash and Bank	2,30,000	83,87,000
Less: Current Liabilities			
	Creditors	25,67,000	
	ST loans	13,80,000	(39,47,000)
Total Funds Employed			
			62,30,000

Industry Standards

Receivables Turnover	**=**	**90 Days**
Inventory Turnover	=	100 Days
Payables turnover	=	90 Days
Net Asset Turnover	=	4 Times

The company has set certain standards for the upcoming year financial status.

All the ratios are based on closing figures in financial statements.

Equity SC to Reserves	=	1
Net Profit Ratio	=	15%
Gross Profit Ratio	=	50%
loan Term Debt to Equity	=	0.5
Debtor Turnover	=	100 Days
Creditor Turnover (based on COGS)	=	100 Days
Inventory	=	70% of Opening inventory

Cash Balance is assumed to remain same for next year.

MULTIPLE CHOICE QUESTIONS

1. What is the inventory turnover ratio in days and whether assertion of CFO is correct?
   (a) 120 days; Assertion of CFO is correct.
   (b) 100 days; Assertion of CFO is incorrect.
   (c) 185 days; Assertion of CFO is correct.
   (d) 150 days; Assertion of CFO is incorrect.
2. What is the receivables turnover and whether assertion of management is correct?
   (a) 117 days; Assertion of management is correct.
   (b) 100 days; Assertion of management is correct.

(c) 85 days; Assertion of management is correct.

(d) 85 days; Assertion of management is not correct.

3. What is the expense company needs to incur for earning ₹ 1 of revenue in the last year?

(a) 0.844

(b) 0.754

(c) 0.962

(d) 0.824

4. What is the projected net working capital of the company?

(a) 42,87,891

(b) 40,27,891

(c) 48,27,891

(d) 48,28,891

5. What is the projected Long-Term Debt of the company for the next year?

(a) 60,00,000

(b) 30,00,000

(c) 14,30,000

(d) 28,60,000

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (c) 185 days; Assertion of CFO is correct.

Reason:

$$\text{Inventory Turnover} = \frac{\text{Inventory}}{\text{COGS}} \times 365 = \frac{38,60,000 \times 365}{76,40,000} = 184.41 \text{ days}$$

$$= 185 \text{ days (apx)}$$

Inventory holding period of 185 days is significantly higher as compared to industry standard of 100 days. This means a significant amount of working capital is tied in inventory, which may be leading to liquidity crunch.

2. Option (a) 117 days; Assertion of management is correct

Reason:

$$\text{Receivables Turnover} = \frac{\text{Receivables}}{\text{Sales}} \times 365 = \frac{39,97,000 \times 365}{1,25,00,000} = 116.71 = 117 \text{ days (apx)}$$

Receivables turnover of 117 days as compared to industry standard of 90 days is a further delay of 27 days. This will lead to good amount of money being tied up in debtors.

3. Option (a) 0.844

Reason:

Operating Ratio is the number which indicates cost incurred by company for earning each rupee of revenue.

Operating Ratio =

$$\frac{\text{COGS} + \text{Operating Expenses}}{\text{Sales}} \times 100 = \frac{76,40,000 + 29,10,000}{1,25,00,000} \times 100 = 0.844$$

4. Option (b) 40,27,891

Reason:

Equity to Reserves	= 1
Reserves	= 1x30,00,000 = 30,00,000
Projected profit	= 30,00,000-18,00,000 = 12,00,000
Net Profit Margin	= 15%
12,00,000/ Sales	= 0.15
Sales	= 80,00,000
Gross Profit	= 80,00,000x50% = 40,00,000
COGS	= 80,00,000-40,00,000=40,00,000
Projected Debtors Turnover	= 100 days= closing Receivables/Sales x 365
100	= Closing Receivables /80,00,000x365
Closing Receivables	= 80,00,000x100/365 = 21,91,781

Projected Closing Inventory	= 70% of opening inventory
= 70% of 38,60,000	= 27,02,000
Projected Creditor Turnover	= 100 days=closing creditors/COGSx365
Closing Creditors	= COGSx100/365
Closing Creditor	= 40,00,000x100/365 =10,95,890
Net Working Capital	= Cash + Debtors + Inventory – Creditors = 2,30,000+21,91,781+27,02,000-10,95,890
Net Working Capital	= 40,27,891

5. Option (b) 30,00,000

Reason:

Equity Share Capital + Reserves	=	30,00,000+30,00,000=60,00,000
Long Term Debt to Equity	=	0.5
LTD/60,00,000	=	0.5
Long Term Debt	=	0.5 x 60,00,000
Long Term Debt	=	30,00,000

CASE SCENARIO 13

AHF Ltd. is a well-established organization known for its innovative products and services. With a strong financial standing and a commitment to growth, the company is exploring different financing options to fuel its expansion strategies. AHF Ltd. is considering issuing debentures to raise funds for expansion and investment opportunities. The company aims to determine the cost of debt after tax under various scenarios of issuance, considering factors such as issue price and brokerage expenses.

CA Aananda, Chief Financial Officer of AHF Ltd. plans to issue ₹12,00,000, 15% debentures of ₹100 each, redeemable after a fixed period of 10 years. The company operates in a 35% tax bracket, which will impact the cost of debentures after tax.

The cost of debt after tax is calculated by adjusting the coupon rate for tax savings on interest payments. Additionally, brokerage expenses, if applicable, are factored into the analysis to determine the overall cost of debentures.

By analysing the cost of debt under different issuance scenarios, CA Aananda can make informed decisions regarding its financing strategy. Understanding the impact of issue price and brokerage expenses on the cost of debentures enables the company to optimize its capital structure and enhance shareholder value. Continuous evaluation of financing options and market conditions will be essential for AHF Ltd. to maintain financial flexibility and support its long-term growth objectives.

Calculate Cost of Debentures after tax and help CA Aananda, CFO of AHF Ltd. to understand the various scenarios.

MULTIPLE CHOICE QUESTIONS

1. What will be the cost of debenture if the debentures are issued at par?
   (a) 9.25%
   (b) 15%

(c) 7.80%

(d) 9.75%

2. What will be the cost of debenture if the debentures are issued at 10% discount?

(a) 10.95%

(b) 11.32%

(c) 8.33%

(d) 10%

3. What will be the cost of debenture if the debentures are issued at 10% premium?

(a) 8.33%

(b) 8.66%

(c) 10.23%

(d) 11.32%

4. What will be the cost of debenture if the brokerage is paid at 2% and redeemed at par?

(a) 8.33%

(b) 15.35%

(c) 10.05%

(d) 9.98%

5. What will be the cost of debenture if the debenture's current market price is ₹ 120 and are redeemed at par?

(a) 7%

(b) 7.05%

(c) 7.68%

(d) 9.75%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

$$\text{Cost of Debentures, } K_d = \frac{I(1-t)+\frac{(RV-NP)}{n}}{\frac{(RV+NP)}{2}} \; x \; 100$$

I = Interest on debentures

t = Tax Rate

RV = Redemption Value

NP = Current Market Price or Net Proceed received

n = Period of debenture

1. Option (d) 9.75%

Reason:

cost of debenture if the debentures are issued at par.

$$\text{Cost of Debentures, } K_d = \frac{15(1-0.35)+\frac{(100-100)}{10}}{\frac{(100+100)}{2}} \; x \; 100 = 9.75\%$$

2. Option (b) 11.32%

Reason:

cost of debenture if the debentures are issued at 10% discount.

$$\text{Cost of Debentures, } K_d = \frac{15(1-0.35)+\frac{(100-90)}{10}}{\frac{(100+90)}{2}} \; x \; 100 = 11.32\%$$

3. Option (a) 8.33%

Reason:

cost of debenture if the debentures are issued at 10% premium.

$$\text{Cost of Debentures, } K_d = \frac{15(1-0.35)+\frac{(100-110)}{10}}{\frac{(100+110)}{2}} \; x \; 100 = 8.33\%$$

4. Option (c) 10.05%

Reason:

cost of debenture if the brokerage is paid at 2% and redeemed at par.

$$\text{Cost of Debentures, } K_d = \frac{15(1-0.35)+\frac{(100-98)}{10}}{\frac{(100+98)}{2}} \; x \; 100 = 10.05\%$$

5. Option (b) 7.05%

Reason:

cost of debenture if the debenture's current market price is ₹120 and are redeemed at par.

$$\text{Cost of Debentures, } K_d = \frac{15(1-0.35)+\frac{(100-120)}{10}}{\frac{(100+120)}{2}} \; x \; 100 = 7.05\%$$

CASE SCENARIO 14

M/s ARC Ltd is an established entity in the telecommunication industry with 49.95% market share. Most of its telecommunication lines are based on 2G, 3G and 4G spectrum. However now the market is foreseeing a technological disruption in the form of 5G technology. To maintain a competitive advantage, it needs to heavily invest in 5G equipments and deploy the same for users latest by the end of year 3 from now. The entire project is going to cost 9,000 crores. The management is wondering how such a huge amount is going to be raised.

A financial consultant has recently been hired by ARC to evaluate the various ways to raise capital. On the basis of his experience and knowledge, the consultant is of the view that telecom industry should not deploy fixed cost funds in excess of 40% of total capital. Also, preference share capital should not exceed 10% of total capital. ARC currently has 2000 crores in the form of reserves represented by short term money market instruments. It can raise money by way of debentures by issuing them at a premium of 5% with redemption value of ₹ 110 after 5 years. The debentures would require an annual interest payment of ₹ 8 p.a. The preference shares will be issued at a discount of 10% and redeemed at premium of 10% after 10 years requiring an annual dividend of 10%. The company is sceptical of cash flows in near term after deployment of 5G and therefore would issue the above stated debentures only to the extent of 50% of total debt funds and balance will be raised by zero coupon bonds, which will be issued at a discount of 40% and redeemed at par after 5 years. Current price of share od ARC stands at an average of ₹ 147. The company has recently paid dividend of ₹ 11 per share and considering the 5G deployment and other technological requirements in long run, it is likely to continue retaining 56% of its earnings. The reinvested retained earnings are likely to offer a return of 15% to the shareholders. It is planning to raise a part of additional equity by way of rights offering to its shareholders. The rights entitle the existing shareholders to buy shares at a discount of 15% to current average market price. However only 40% of the required fresh equity can be raised by way of right issue. The balance equity portion will be raised by way of new series of equity shares with differential voting rights. They will be promised a dividend of 1.25x of ordinary equity shareholder and due to lower voting rights their cost of capital will require a premium of 50% over ordinary equity shares.

MULTIPLE CHOICE QUESTIONS

1. What will be the amount (in ₹ Crores) of differential voting rights shares to be issued assuming that maximum limits are to be adhered to
   (a) 2040
   (b) 1360
   (c) 2000
   (d) 900
2. Calculate the cost of debenture using YTM method
   (a) 10.76%
   (b) 8.43%
   (c) 12.37%
   (d) 16.51%
3. Calculate the cost of preference shares using YTM method
   (a) 10.76%
   (b) 8.43%
   (c) 12.37%
   (d) 16.51%
4. What will be the share price of shares with differential voting rights?
   (a) 91.07
   (b) 100
   (c) 124.95
   (d) 147
5. What will be the minimum required return from 5G deployment to breakeven the cost of capital?
   (a) 10.76%
   (b) 8.43%

(c) 16.11%

(d) 16.51%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (a) 2040

Reason:

Capital Structure		Amount (₹)
Rights issue	4:6	1,360
DVR Equity Issue		**2,040**
Retained earnings	Fixed	2,000
Preference Shares	10%	900
Debentures	30% (1:1)	1,350
Zero Coupon Bonds		1,350
Total		**9,000**

2. Option (b) 8.43%

Reason:

Calculation of Kd of debentures

$$\text{Approx Kd} = \frac{8 + \frac{(110 - 105)}{5}}{\frac{(110 + 105)}{2}} = 8.37\%$$

Year	Cashflows	PVF @ 8%	PV @ 8%	PVF @ 9%	PV @ 9%
1 to 5	8	3.9927	31.94	3.8897	31.12
5	110	0.6806	74.87	0.6499	71.49
Cash outflow			106.81		102.61
Cash inflow	90	1	105		105
NPV			**-1.81**		**2.39**

$$\text{Kd} = \frac{8\% + (9\% - 8\%)}{(106.81 - 102.61)} \times 1.81 = 8.43\%$$

3. Option (c) 12.37%

Reason:

Calculation of Kp of Preference Shares

$$\text{Approx Kp} = \frac{10 + \frac{(110 - 90)}{108}}{\frac{(110 + 90)}{2}} = 12\%$$

Year	Cashflows	PVF @ 12%	PV @ 12%	PVF @ 13%	PV @ 13%
1 to 10	10	5.6502	56.5	5.4262	54.26
10	110	0.322	35.42	0.2946	32.4
Cash outflow			91.92		86.67
Cash inflow	90	1	90		90
NPV			**-1.92**		**3.33**

$$\text{Kp} = \frac{12\% + (13\% - 12\%)}{(91.92 - 86.67)} \text{x} 1.92$$

$$= 12.37\%$$

4. Option (a) 91.07

Reason:

Calculation of Cost of Equity

Existing Shareholders

Po = 147

Do = 11

b = 56%

r = 15%

Growth rate (g) = b x r = 8.40%

D1 = 11 x (1+8.4%) = 11.924

$$\text{Ke} = \frac{11.924}{147} + 8.4\% = 16.51\%$$

Rights Shares

Po = 147 x 85% = 124.95

Do = 11

b = 56%

r = 15%

Growth rate (g) = b x r = 8.40%

D1 = 11 x (1+8.4%) = 11.924

$$Ke = \frac{11.924}{124.95} + 8.4\%$$

17.94%

Differential Voting rights

Ke = 16.51% x 1.5 = 24.77%

D1 = 11.924 x 1.25 = 14.905

G = 8.40%

$$Po = \frac{14.905}{24.77\% - 8.40\%}$$

Po = 91.07

5. Option (c) 16.11%

Reason:

Capital Structure		Amount (₹)	Weight	Cost	W x C
Rights issue	4:6	1360	0.1511	17.94%	0.0271
DVR Equity Issue		2040	0.2267	24.77%	0.0561
Retained earnings	Fixed	2000	0.2222	16.51%	0.0367
Preference Shares	10%	900	0.1	12.37%	0.0124
Debentures	30% (1:1)	1350	0.15	8.43%	0.0126
Zero Coupon Bonds		1350	0.15	10.76%	0.0161
Total		**9000**	1		**16.11%**

CASE SCENARIO 15

If the combined leverage and operating leverage figures of a company are 2.5 and 1.25 respectively, find the financial leverage and P / V ratio, given that the equity dividend per share is ₹ 2, interest payable per year is ₹ 1 lakh, total fixed cost ₹ 0.5 lakh and sales ₹ 10 lakhs.

MULTIPLE CHOICE QUESTION

1. find the financial leverage and P / V ratio
   (a) 3.125; 25%
   (b) 2.00; 40%
   (c) 2.00; 25%
   (d) 3.00; 40%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (c) 2.00; 25%

Reason:

CL = OLxFL, Hence FL=CL/OL=2.5/1.25 = 2 times.

OL = Contribution/EBIT = Contribution/(Contribution-FC) = C/(C-50000) = 1.25,

C = 2,50,000.

PVR = 2,50,000/10,00,000 = 25%

CASE SCENARIO 16

Mr. Dashan recently came back from a conference titled Capital Structure Theory and was extremely excited about what he learned concerning Modigliani and Miller's capital structure propositions. He has been trying to choose between three potential capital structures for his firm, Dashmart Corporation, and believes that Modigliani and Miller's work may guide him in the right direction. The capital structures Munn is considering are:

CSI: 100% equity.

CS II: 50% equity and 50% debt.

CS III: 100% debt.

If he uses Modigliani and Miller's propositions and includes all of their assumptions including the assumption of no taxes, which capital structure is he most likely to choose?

MULTIPLE CHOICE QUESTION

1. Which capital structure would be choosen in case of tax regime?
   (a) CS I and CS II
   (b) CS I and CS III
   (c) CS II and CS III
   (d) Any CS and CS III

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (d) Any CS and CS III

Reason:

Modigliani and Miller's original study was based on the assumption of perfect markets with no taxes and no costs of financial distress. Their conclusion was that under such assumptions, capital structure has no impact on firm value. MM Proposition with taxes concludes that the optimal capital structure is 100% debt. This is because the tax deductibility of interest payments provides a tax shield that adds value to the firm, and the value of the tax shield is maximized with 100% debt.

CASE SCENARIO 17

Anna Ltd. is a company engaged in toy manufacturing. While growing through the financial statements of the company, the CEO is the view that company should start preparing the projected financial statements so that decision can made on timely basis to maintain the growth and liquidity of the Anna Ltd. Following financial information is available in respect of the company:

(a) Issued share capital 15,00,000

7.5% Debentures	10,00,000
Fixed Assets at cost	12,50,000

(b) The expected ratios to selling price are

Raw materials	50%
Labour	15%
Overheads	20%
Profit	15%

(c) Raw materials are kept in store for an average of 2 months.

(d) Finished goods remain in stock for an average period of 2 months.

(e) Production during the previous year was 3,00,000 units and it is planned to maintain the rate in the current year also.

(f) Each unit of production is expected to remain in process for a month.

(g) Credit allowed to customers is one month and given by suppliers is two months.

(h) Selling price is ₹ 15 per unit.

(i) Production and sales cycle of the company remains constant throughout the year

Being a finance manager of the company, you are being asked to answer the following requirements of the CEO:

MULTIPLE CHOICE QUESTIONS

1. Calculate the amount blocked in inventories of raw material and finished goods.
   (a) ₹ 3,18,750 and ₹ 3,75,000
   (b) ₹ 3,75,000 and ₹ 6,37,500
   (c) ₹ 3,75,000 and ₹ 3,75,000
   (d) ₹ 4,25,000 and ₹ 6,75,000
2. Calculate the amount blocked in work in progress stock.
   (a) ₹ 3,75,000
   (b) ₹ 4,75,000
   (c) ₹ 3,18,750
   (d) ₹ 5,25,750
3. Calculate the amount blocked in debtors at sales price and amount of creditors.
   (a) ₹ 3,18,000 and ₹ 3,18,000
   (b) ₹ 3,75,000 and ₹ 3,75,000
   (c) ₹ 6,00,000 and ₹ 3,75,000
   (d) ₹ 6,75,000 and 4,25,000
4. Calculate the net working capital requirement.
   (a) ₹ 13,75,000
   (b) ₹ 10,75,650
   (c) ₹ 6,75,000
   (d) ₹ 13,31,250
5. Calculate the amount of projected net profit.
   (a) ₹ 5,00,000
   (b) ₹ 6,75,000

(c) ₹ 6,00,000

(d) ₹ 4,75,000

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. **Option (b)** ₹ 3,75,000 and ₹ 6,37,500
2. **Option (c)** ₹ 3,18,750
3. **Option (b)** ₹ 3,75,000 and ₹ 3,75,000
4. **Option (d)** ₹ 13,31,250
5. **Option (c)** ₹ 6,00,000

Reason:

Working Note:

Sales = 3,00,000 x ₹ 15 = ₹ 45,00,000

Gross profit = ₹ 45,00,000 x 15% = ₹ 6,75,000

Net Profit = Gross profit – Interest

= ₹ 6,75,000 – ₹ 75,000 = ₹ 6,00,000

Statement showing the requirements of Working Capital

Particulars	**(₹)**	**(₹)**
A. Current Assets:		
Inventory:		
Stock of Raw material (₹ 45,00,000 x 50% x 2/12)	3,75,000	
Stock of Work-in-progress (₹ 45,00,000 x 85% x 1/12)	3,18,750	
Stock of Finished goods (₹ 45,00,000 x 85% x 2/12)	6,37,500	
Receivables (Debtors) (₹ 45,00,000 x 1/12)	3,75,000	
Gross Working Capital	17,06,250	17,06,250

B. Current Liabilities:		
Payables for Raw materials (₹45,00,000 x 50% x 2/12)	3,75,000	
Total Current Liabilities	3,75,000	3,75,000
Net Working Capital requirements		13,31,250

CASE SCENARIO 18

Gearhead Ltd. is a rapidly growing manufacturer of high-end bicycles. They are considering expanding their production capacity to meet rising demand. However, this expansion requires significant investment, and the company's leadership wants to understand the potential impact on profitability. Here's where leverage analysis comes in. Leverage refers to the use of fixed costs to magnify changes in sales. Gearhead Ltd. has two main types of leverage to consider- Degree of Operating Leverage (DOL)- this measures how much a change in sales translates to a change in operating income and Degree of Financial Leverage (DFL)- this measures the impact of debt financing on earnings per share (EPS). The combined effect of DOL and DFL on EPS is considered in Combined Leverage. It reflects the overall risk and potential reward associated with a company's capital structure. The following are some of the information provided by Gearhead Ltd. on the basis of which leverage calculations and analysis can be done:

1. Output (Units) 60,000
2. Fixed costs (₹) 7,000
3. Variable cost per unit (₹) 0.20
4. Interest on borrowed funds (₹) 4,000
5. Selling price per unit (₹) 0.60

The tax rate under which Gearhead Ltd. is presently operating is 35%. With these leverage calculations company can understand that even a small sales changes can significantly boost or drop operating income. Debt financing and its impact can also be understood and how it amplifies both profits and losses. Leverage analysis helps Gearhead Ltd. understand the potential risk associated with increased or reduced debt. Sometimes holistic view of the combined impact of operating and financial leverage on EPS serves an important purpose as well. A high DCL indicates amplified volatility in EPS, meaning small changes in sales or operating income can have a significant effect on shareholder returns. Based on the leverage analysis, Gearhead Ltd. can make informed decisions about their expansion plans. On the basis of DOL, they should be cautious about the

potential for profit declines during economic downturns. This might suggest a more conservative expansion strategy. DFL indicates increased risk associated with debt. Gearhead Ltd. needs to weigh the potential benefits of debt financing (lower cost of capital) against the risk of magnified profit fluctuations. Leverage analysis is a powerful tool for businesses like Gearhead Ltd. By understanding the impact of operating and financial leverage, companies can make informed decisions about financing, expansion, and risk management, ultimately aiming for sustainable growth with a healthy balance between profitability and risk. You are required to answer the following MCQs:

MULTIPLE CHOICE QUESTIONS

1. What will be the total contribution and contribution per unit from the following?
   (a) ₹ 34000 and 0.50
   (b) ₹ 24000 and 0.40
   (c) ₹ 54000 and 0.60
   (d) ₹ 84000 and 0.80
2. What will be the Profit before tax (PBT) from the following?
   (a) ₹ 13000
   (b) ₹ 14000
   (c) ₹ 15000
   (d) ₹ 16000
3. What will be the Degree of Operating Leverage (DOL) from the following?
   (a) 1.41
   (b) 1.49
   (c) 1.21
   (d) 1.30
4. What will be the Degree of Financial Leverage (DFL) from the following?
   (a) 1.67
   (b) 1.31

(c) 1.21

(d) 1.30

5. What will be the Degree of Combined Leverage (DCL) from the following?

(a) 1.85

(b) 1.49

(c) 1.21

(d) 1.30

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (b) ₹ 24000 and 0.40

2. Option (a) ₹ 13000

3. Option (a) 1.41

4. Option (b) 1.31

5. Option (a) 1.85

Reason:

Particulars	Amount ₹
Selling price p.u.	0.60
Less: Variable cost p.u.	0.20
Contribution p.u.	0.40
Total contribution (0.40 x 60,000)	24,000
Less: FC	7,000
EBIT	17,000
Less: Interest	4,000
Profit before tax	13,000
DOL (24,000/17,000)	1.41
DFL	1.31
DCL	1.85

CASE SCENARIO 19

PetroChem Ltd. is a leading manufacturer of industrial chemicals. The business in the last five years is doing quite well and therefore to maximize the wealth of the shareholders further growth is the need of the hour. The company is considering a significant expansion project to increase production capacity. Investors and creditors are interested in PetroChem's financial health before making investment or loan decisions. The financial analyst of the company believes that ratio analysis can provide valuable insights into this financial health of the company. The following are some information on financial statements and Profit Loss Statements:

Some Financial Statements Informations (in Crore Rupees):

Items	2022-2023	2021-2022
Balance Sheet:		
Current Assets	40	35
Non-Current Assets	100	80
Total Assets	140	115
Current Liabilities	25	20
Long-Term Liabilities	40	30
Total Shareholders' Equity	75	65
Some Income Statement Informations:		
Sales Revenue	120	100
Cost of Goods Sold	60	50
Gross Profit	60	50
Operating Expenses	30	25
Net Income	30	25

The analyst believes that if his team focusses on the following ratios for PetroChem Ltd. for 2022-2023 then the performance can be monitored properly and improvements can be made thus providing confidence for the stakeholders:

- Current Ratio
- Debt-to-Equity Ratio

- Gross Profit Margin
- Operating Profit Margin

Further the company's analyst also believes that based on the ratios, the team can analyze PetroChem Ltd.'s financial health and its ability to handle additional debt for the expansion project.

On the basis of this information provided above you are required to answer the following MCQs:

MULTIPLE CHOICE QUESTIONS

1. What is the current ratio of 2021- 2022 and 2022- 2023 respectively of PetroChem Ltd. from the following information:
   (a) 1.75 and 1.4
   (b) 1.75 and 1.6
   (c) 1.6 and 1.5
   (d) 1.6 and 2
2. What is the position of working capital of PetroChem Ltd. in both the years? What does it indicate?
   (a) WC = ₹ 25 Crores for both years shows that changes in current assets was balanced with changes in current liabilities
   (b) WC = ₹ 15 Crores for both years shows that changes in current assets was balanced with changes in current liabilities
   (c) WC (21-22) = ₹ 18 Crores and WC (22-23) = ₹ 21 Crores shows better WC position
   (d) WC = 31 for both years shows reduction in its inventory levels.
3. What is the Gross Profit ratio of 2021- 2022 and 2022- 2023 respectively of PetroChem Ltd. from the following information:
   (a) 50% and NIL
   (b) 80% and 60%
   (c) 50% and 50%
   (d) 60% and 55%

4. What is the debt equity ratio of 2021- 2022 and 2022- 2023 respectively of Petro Chem Ltd. from the following information:

   (a) 0.769 and 0.867

   (b) 0.666 and 0.888

   (c) 0.678 and 0.901

   (d) 0.456 and 0.234

5. What is the Net Profit ratio of 2021- 2022 and 2022- 2023 respectively of PetroChem Ltd. from the following information:

   (a) 50% and NIL

   (b) 80% and 60%

   (c) 25% and 25%

   (d) 80% and 55%

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. **Option (b)** 1.75 and 1.6

2. **Option (b)** WC = ₹ 15 Crores for both years shows that changes in current assets was balanced with changes in current liabilities

3. **Option (c)** 50% and 50%

4. **Option (a)** 0.769 and 0.867

5. **Option (c)** 25% and 25%

Reason:

Ratio	**22-23**	**21-22**
Current Ratio $\frac{\text{Current Asset}}{\text{Current Liability}}$	40/25 =1.6	35/20 = 1.75
Working Capital = CA- CL	40-25 = 15	35-20 =15
Debt Equity	65/75 = 0.867	50/65 = 0.769
GP Ratio	60/120 x100 = 50%	50/100x100 = 50%
NP Ratio	30/120x100 = 25%	25/100x100 = 25%

CASE SCENARIO 20

RamVerse Ltd is an all equity financed company. It is considering replacing ₹ 275 lakhs equity shares with 15% debentures of the same amount. Current Market value of the company is 1750 lakhs with cost of capital at 20%. Future EBITs are going to be constant and entire earnings are going to be distributed. Corporate Tax Rate can be assumed to be 30%.

MULTIPLE CHOICE QUESTION

1. What will be the new cost of equity of the firm?
   (a) 19.11%
   (b) 17.53%
   (c) 10.50%
   (d) 20.62%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (d) 20.62%

Reason:

Current PAT	= 1750 x 20% = 350.
Current PBT	= Future EBIT = 350/0.7=500.
Future PBT	= 500-275x15% = 458.75.
Future PAT	= 458.75 x 70% = 321.125.
Value (L)	= Value (UL)+ Debt x t =1750+275 x 30% = 1832.5.
Value of Equity	= 1832.5-275 = 1557.5.
Ke	= 321.125/1557.5 = 20.62%

CASE SCENARIO 21

A company has a cost of equity of 10% and interest rate of 6%. The company's debt-to-equity ratio is 1.5, and the corporate tax rate is 40%.

MULTIPLE CHOICE QUESTION

1. What is the company's weighted average cost of capital?
   (a) 7.20%
   (b) 6.16%
   (c) 7.60%
   (d) 8.40%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) 6.16%

Reason:

To calculate WACC, we use the formula:

WACC = (E/V) × Re + (D/V) × Rd × (1 - Tc)

Let V be the total value of the firm, then Debt is equal to 1.5/(1+1.5) times the value of the firm and Equity is equal to 1/(1+1.5) times the value of the firm.

So, D/V = 1.5/(1+1.5) = 0.6 and E/V = 1/(1+1.5) = 0.4

WACC = 0.4 × 10% + 0.6 × 6% × (1 - 40%) = 4% + 2.16% = 6.16%

Therefore, the company's weighted average cost of capital is 6.16%.

CASE SCENARIO 22

Output (units) = 3,00,000 Fixed cost = ₹ 3,50,000 Unit variable cost = ₹ 1.00 Interest expenses = ₹ 25,000 Unit selling price = ₹ 3.00 Applicable tax rate is 35%.

MULTIPLE CHOICE QUESTIONS

1. Calculate Financial Leverage.
   (a) 1.11
   (b) 2.40
   (c) 2.67
   (d) 1.07

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (a) 1.11

Reason:

EBIT=300000 x (3-1) - 350000 = 250000,

PBT = 250000-25000 - 225000

FL = 250000/225000 = 1.11

CASE SCENARIO 23

The cost of capital of a firm is 12% & its expected earning per share at the end of the year is ₹ 20. its existing payout ratio is 25%. the company is planning to increase its payout ratio to 50%.

MULTIPLE CHOICE QUESTION

1. What will be the effect of this change on the market price of equity share (MPS) of the company as per Gordon model, if the reinvestment rate of the company is 15%?

   (a) It will increase by ₹ 444.45

   (b) It will decrease by ₹ 444.45

   (c) It will increase by ₹ 222.22

   (d) It will decrease by ₹ 222.22

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) It will decrease by ₹ 444.45

Reason:

Current D1 = 20 x 25% = 5

Current g = 0.75 x 0.15 = 11.25%

Current MPS = 5/(0.12 - 0.1125) = 666.67

Proposed D1 = 20 x 50% = 10

proposed g = 0.5 x 0.15 = 0.075,

Proposed MPS = 10/(0.12 - 0.075) = 222.22

Change in MPS = 666.67 - 222.22 = **₹444.45**

CASE SCENARIO 24

The capital structure of KPS Limited includes 5,00,000 equity shares of ₹ 10 each. The market price of equity share (cum-dividend) is ₹ 75 per share. The company has declared to pay dividend on equity shares @ ₹ 6 per share which will be paid within next three days. The company has a history of consistent growth in its dividends. It has been predicted that in the next year KPS Limited will pay dividend on its equity shares@ ₹ 7.59 per share. The rate of dividend growth will be maintained in foreseeable future.

MULTIPLE CHOICE QUESTION

1. The cost of equity is calculated as:

   (a) 36.5%

   (b) 34.5%

   (c) 37.5%

   (d) 38.5%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (c) 37.5%

$$\text{Growth rate} = \frac{7.59-6}{6} \text{x} 100 = 26.5\%$$

$$\text{Ke} = \frac{D_1}{P_0} + g$$

$$= \frac{7.59}{75-6} + 0.265$$

$$= 37.5\%$$

CASE SCENARIO 25

KT Ltd.'s opening stock was ₹ 2,50,000 and the closing stock was ₹ 3,75,000. Sales during the year were ₹ 13,00,000 and the gross profit ratio was 25% on sales. Average accounts payable are ₹ 80,000.

MULTIPLE CHOICE QUESTIONS

1. What will be the Creditors Turnover Ratio ?
   (a) 13.33
   (b) 14.33
   (c) 14.44
   (d) 13.75

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (d) 13.75

Reason:

Creditors Turnover Ratio	= Purchases / Average Accounts Payable
Cost of Goods Sold	= Opening Stock+ Purchases - Closing Stock
Purchases	= Cost of Goods Sold + Closing Stock - Opening Stock
Purchases	= ₹ 9,75,000 + ₹ 3,75,000 - ₹ 2,50,000
Purchases	= ₹ 11,00,000
Average Accounts Payable	= ₹ 80,000
Creditors Turnover Ratio	= Purchases/Average Accounts Payable
Creditors Turnover Ratio	= ₹ 11,00,000 / ₹ 80,000
Creditors Turnover Ratio	= 13.75

Therefore, the Creditors Turnover Ratio is 13.75.

CASE SCENARIO 26

A company has a degree of operating leverage is 2 and degree of financial leverage is 3. If the sales of the company increase by 5% during the next quarter,

MULTIPLE CHOICE QUESTION

1. The Earning Per Share (EPS) will increase by?
   (a) 20%
   (b) 30%
   (c) 50%
   (d) 60%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) 30%

Reason:

The formula for Degree of Combined Leverage (DCL) is:

$DCL = DOL \times DFL$

$DCL = 2 \times 3 = 6$

The percentage change in EPS is:

$\% \Delta EPS = DCL \times \% \Delta Sales$

$\% \Delta EPS = 6 \times 5\% = 30\%$

CASE SCENARIO 27

Following are the data on a capital project being evaluated by the management of Aman Ltd.

Particulars	Project A
Annual cost saving	₹ 1,80,000
Useful life	5 years
Internal rate of return	10%
Salvage value	0
PVAF (10,5 years)	3.79

MULTIPLE CHOICE QUESTION

1. Based upon the information, the payback period of the project will be

   (a) 2.652

   (b) 2.850

   (c) 3.790

   (d) 3.855

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (c) 3.79

Reason:

Initial Investment = Annual Cost Savings × PVAF

Annual cost savings = ₹ 1,80,000

PVAF (10%, 5 years) = 3.79

Initial Investment = 1,80,000 × 3.79 = 6,82,200

Payback Period = Initial Investment/ Annual Cost Savings

= 6,82,200/1,80,000

= 3.79 years

CASE SCENARIO 28

Total Assets & Current liabilities of the Vitrag Limited are 50 lakhs & 10 lakhs respectively. ROCE is 15%, measure of business operating risk is at 3.5 & P/V ratio is 70%.

MULTIPLE CHOICE QUESTIONS

1. Calculate Sales.
   (a) 21 lakhs
   (b) 30 lakhs
   (c) 37.50 lakhs
   (d) 40 lakhs

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) 30 lakhs

Reason:

ROCE = EBIT / Total Capital Employed

Total Capital Employed = Total Assets – Current Liabilities
= 50 lakhs – 10 lakhs
= 40 lakhs

EBIT = 40 lakhs x 15% = 6 lakhs

Now, OL of 3.5 = Contribution / EBIT

Therefore Contribution = 6 Lakhs X 3.5 = 21 lakhs

Sales = Contribution / PV Ratio = 21 lakhs / 0.7 = 30 lakhs

CASE SCENARIO 29

A company has issued bonds with a face value of ₹ 100,000 at an annual coupon rate of 8%. The bonds are currently trading at 95% of their face value.

MULTIPLE CHOICE QUESTION

1. What is the approximate cost of debt for the company before taxes.
   (a) 9.00%
   (b) 7.65%
   (c) 8.00%
   (d) 8.42%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (d) 8.42%

Reason:

Cost of Debt = (Interest Payment/ Market Price of Bond)

= (8,000 / 95,000) = 8.42%

CASE SCENARIO 30

X ltd has actual Sales of ₹ 20 lakhs and its Break-even sales are at ₹ 15 lakhs. The degree of total risk involved in the company is 6.5.

MULTIPLE CHOICE QUESTION

1. Calculate the % impact on EPS, if EBIT is affected by 12%.
   (a) 40%
   (b) 78%
   (c) 312%
   (d) 19.5%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (d) 19.5%

Reason:

Financial Leverage (FL) indicates % impact in EPS, if EBIT is affected by 12%

FL = Combined Leverage (CL) /Operating Leverage (OL)

CL = 6.5 (Measure of total risk)

OL = 1 / Margin of Safety

$$\text{Margin of Safety (MOS)} = \frac{\text{Actual Sales} - \text{B.E Sales}}{\text{Actual Sales}}$$

MOS = 20 lakhs – 15 lakhs / 20 lakhs = 0.25

Therefore, OL = 1 / 0.25 = 4

So, FL = 6.5 / 4 = 1.625

So % Change in EPS = 12 x 1.625 = 19.5%

CASE SCENARIO 31

Ranu & Co. has issued 10% debenture of face value 100 for ₹ 10 lakh. The debenture is expected to be sold at 5% discount. It will also involve floatation costs of ₹ 10 per debenture. The debentures are redeemable at a premium of 10% after 10 years.

MULTIPLE CHOICE QUESTION

1. Calculate the cost of debenture if the tax rate is 30%.
   (a) 8.97%
   (b) 9.56%
   (c) 8.25%
   (d) 10.12%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (a) 8.97%

$$K_d = \frac{[I + \frac{1}{n}(RP - NP)](1 - t)}{1/2(RP + NP)}$$

$$K_d = \frac{[10 + \frac{1}{10}(110 - 85)](1 - 0.30)}{1/2(110 + 85)}$$

= 8.75/97.5 = 8.97%

CASE SCENARIO 32

Ramu Ltd. wants to implement a project for which ₹ 25 lakhs is required. Following financing options are at hand:

Option 1:

Equity Shares	25,000 @ ₹ 100

Option 2:

Equity Shares	10,000 @ ₹ 100
12% Preference Shares	5,000 @ ₹ 100
10% Debentures	10,000 @ ₹ 100

MULTIPLE CHOICE QUESTION

1. What is the indifference point & EPS at that level of EBIT assuming corporate tax to be 35%.

   (a) ₹ 2,94,872; ₹ 11.80

   (b) ₹ 3,20,513; ₹ 8.33

   (c) ₹ 2,94,872; ₹ 7.67

   (d) ₹ 3,20513; ₹ 12.82

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) ₹ 3,20,513; ₹ 8.33

Reason:

$$\frac{(EBIT - I)(1-t) - D_p}{N_1} = \frac{(EBIT - I)(1-t) - D_p}{N_2}$$

$$\frac{(x-0)(1-0.35)}{25,000} = \frac{(x-1,00,000)(1-0.35)-60,000}{10,000}$$

x = EBIT = ₹ 3,20,513

At EBIT of ₹ 3,20,513, EPS under both options will be the same i.e., ₹ 8.33 per share.

CASE SCENARIO 33

XYZ Ltd. plans to raise funds through a mix of debt and equity. The details are as follows:

- Equity share capital: ₹ 50,00,000
- Debt: ₹ 30,00,000 at 10% interest
- Cost of equity: 15%
- Corporate tax rate: 30%

MULTIPLE CHOICE QUESTION

1. What is the Weighted Average Cost of Capital (WACC)?
   (a) 10.5%
   (b) 12.0%
   (c) 12.8%
   (d) 14.2%

ANSWER TO MULTIPLE CHOICE QUESTION

1. Option (b) 12.0%

Reason:

WACC = (E/V×Ke) + (D/V × Kd×(1−T))

- E/V = 50,00,000/80,00,000 = 0.625
- D/V = 30,00,000/80,00,000 = 0.375
- Kd = 10%,T = 30%

Kd(1−T) = 10% (1−0.3) = 7

CASE SCENARIO 34

XYZ Industries Ltd., a renowned player in the manufacturing sector, has been contemplating an ambitious expansion program. To finance this growth, the company scrutinizes its current capital structure, which is a blend of equity, retained earnings, preference shares, and debentures.

The equity base of XYZ Industries Ltd., is robust with 40,000 equity shares valued at ₹ 100 each, amounting to a substantial ₹ 40,00,000. This equity foundation is bolstered by retained earnings of ₹ 10,00,000, reflecting the company's prudent profit reinvestment strategy.

In addition to equity, XYZ Industries Ltd., has diversified its financing through 9% preference shares and 7% debentures, each contributing ₹ 25,00,000 to the capital pool. This strategic mix of debt and equity showcases the company's balanced approach to leveraging and risk management.

The company's capital yields a healthy return rate of 12% on capital employed, indicative of its operational efficiency and market competitiveness. However, it operates in a high-tax environment with an income-tax rate of 50%, which significantly impacts its net earnings and available reinvestment capital.

Faced with the need to raise an additional ₹ 25,00,000 for its expansion program, XYZ Industries Ltd., stands at a crossroads. The decision to fund this venture will require careful consideration of the cost of capital, tax implications, and the impact on shareholder value.

The management must evaluate whether to issue more equity shares, preference shares or debentures. Issuing equity could dilute current shareholders' value but would not increase the company's debt burden. Preference shares offer a fixed return to investors and have priority over equity in profit distribution but come at a higher cost than debt. Debentures are less expensive due to tax-deductible interest expenses but increase financial risk. XYZ Industries Ltd.'s journey towards expansion is not just about raising funds but also about maintaining a delicate balance between growth aspirations and financial stability. The company's choice will set a precedent for its future financial strategies and market reputation.

Faced with the challenge of capital structure decision making to finance the expansion programme the finance manager is considering the following alternatives:

(i) Issue of 20,000 equity shares at a premium of ₹ 25 per share.

(ii) Issue of 10% preference shares.

(iii) Issue of 8% debentures

The manufacturing company has estimated that the PE ratios in the cases of equity preference and debenture financing would be 20, 17 and 16 respectively. You are required to evaluate the various financial alternatives considering three plans proposed i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures).

Based on the information provided above you are required to answer the following MCQ's:

MULTIPLE CHOICE QUESTIONS

1. What will be the amount of PAT under the three plans i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures) respectively from the following?

   (a) ₹ 13,25,000, ₹ 13,25,000 and ₹ 11,25,000

   (b) ₹ 8,62,500, ₹ 9,62,500 and ₹ 10,62,500

   (c) ₹ 15,00,000, ₹ 15,00,000 and ₹ 15,00,000

   (d) ₹ 6,62,500, ₹ 6,62,500 and ₹ 5,62,500

2. What will be the amount of total preference dividend under the three plans i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures) respectively from the following?

   (a) ₹ 3,25,000, ₹ 3,25,000 and ₹ 5,25,000

   (b) ₹ 8,62,500, ₹ 9,62,500 and ₹ 10,62,500

   (c) ₹ 2,25,000, ₹ 4,75,000 and ₹ 2,25,000

   (d) ₹ 2,25,000, ₹ 2,25,000 and ₹ 2,25,000

3. What will be the amount of earnings available for equity shareholders under the three plans i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures) respectively from the following?

   (a) ₹ 3,47,500, ₹ 5,77,500 and ₹ 3,98,000

   (b) ₹ 9,37,500, ₹ 8,87,500 and ₹ 7,37,500

   (c) ₹ 4,37,500, ₹ 1,87,500 and ₹ 3,37,500

   (d) ₹ 5,37,500, ₹ 2,87,500 and ₹ 4,37,500

4. What will be the EPS under the three plans i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures) respectively from the following?

   (a) 4.44, 7.66 and 7.29

   (b) 7.00, 6.88 and 7.29

   (c) 7.29, 4.69 and 8.44

   (d) 8.44, 9.88 and 6.78

5. What will be the market price per share under the three plans i.e. Plan I (Equity), Plan II (Preference Shares) and Plan III (Debentures) respectively from the following?

   (a) 134.50, 123.45 and 78.98

   (b) 145.80, 79.73 and 135.04

   (c) 148.8, 187.96 and 118.48

   (d) 168.8, 167.96 and 108.48

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. **Option (d)** ₹ 6,62,500, ₹ 6,62,500 and ₹ 5,62,500

2. **Option (c)** ₹ 2,25,000, ₹ 4,75,000 and ₹ 2,25,000

3. **Option (c)** ₹ 4,37,500, ₹ 1,87,500 and ₹ 3,37,500

4. **Option (c)** 7.29, 4.69 and 8.44

5. **Option (b)** 145.80, 79.73 and 135.04

Reason:

Evaluation of various financial alternatives	Plan I (Equity) (₹)	Plan II (Preference Shares) (₹)	Plan III (Debentures) (₹)
1. EBIT**	15,00,000	15,00,000	15,00,000
2. Interest:			
Existing	1,75,000	1,75,000	1,75,000
Additional	-	-	2,00,000
Total Interest	1,75,000	1,75,000	3,75,000
3. PBT (1-2)	13,25,000	13,25,000	11,25,000
4. TAX 50%	6,62,500	6,62,500	5,62,500
5. PAT (3-4)	6,62,500	6,62,500	5,62,500
6. Preference dividend			
Existing	2,25,000	2,25,000	2,25,000
Additional	-	2,50,000	-
Total Preference Dividend	2,25,000	4,75,000	2,25,000
7. Equity earnings (5-6)	4,37,500	1,87,500	3,37,500
8. No. of equity shares	*60,000	40,000	40,000
9. EPS [7/8]	7.29	4.69	8.44
10. P/E Ratio (Given)	20	17	16
11. Market Price per share	145.80	79.73	135.04

*40,000 + 20,000 new shares = 60,000 shares

**EBIT = 12% of (100 lakhs existing + new 25 lakhs) = ₹ 15,00,000

CASE SCENARIO 35

BEST Limited, a prominent company in semi-conductors' industry, aims to understand the impact of operating and combined leverage on its financial performance for the year ended 31st March 2024. By examining the provided financial details, the company seeks to make informed decisions regarding its cost structure and financing mix.

BEST Limited is a well-established firm known for its products in the market. With a focus on innovation and customer satisfaction, the company has achieved significant growth and success over the years.

Financial Analysis: For the financial year ending 31st March 2024, BEST Limited provides the following financial details:

- Fixed Cost (Excluding interest): ₹2,040 Lakhs
- Sales: ₹30,000 Lakhs
- 12% Debentures of ₹100 each: ₹21,250 Lakhs
- Equity Share Capital of ₹10 each: ₹17,000 Lakhs
- Income tax rate: 30%

Mr. Pallav Kumar, an Executive Director from engineering background discussed following analysis with CA Nagarjuna, Additional Director - Finance of the company:

1. Operating Leverage: Operating leverage, which is currently at 1.4, measures the impact of fixed costs on the company's operating income.
2. Combined Leverage: Combined leverage considers both operating and financial leverage. It is calculated as the product of operating leverage and financial leverage. And company's combined leverage is 2.8.

CA Nagarjuna explained to Mr. Pallav that the Finance department is already analysing the various leverages like Operating Leverage, Financial Leverage and Combined Leverage. Due to these, BEST Limited gains insights into its cost structure and financial risk. These information enables the company to make strategic decisions regarding its operating expenses, financing options, and

overall business strategy. Continuous monitoring and evaluation of leverage ratios will be essential for BEST Limited to maintain financial stability and drive sustainable growth in the competitive market landscape.

Calculate the ratios to understand the financial health of BEST Ltd and CA Nagarjuna can submit his report to Mr. Pallav Kumar.

MULTIPLE CHOICE QUESTIONS

1. Calculate the Financial Leverage.
   (a) 0.5
   (b) 2
   (c) 3.92
   (d) 4
2. Calculate the Profit Volume Ratio.
   (a) 47.60%
   (b) 15.86%
   (c) 23.8%
   (d) 17.43%
3. Calculate the Earnings Per Share.
   (a) ₹ 1.5
   (b) ₹ 1.05
   (c) ₹ 4.2
   (d) ₹ 2.1
4. Calculate the Asset Turnover ratio of BEST Ltd.
   (a) 1
   (b) 0.5
   (c) 0.784
   (d) 1.41

5. Calculate the minimum level of Sales which must be attained to at least pay finance cost of BEST Ltd.

(a) ₹ 19,286 Lakhs

(b) ₹ 8,574 Lakhs

(c) ₹ 24,000 Lakhs

(d) ₹ 27,000 Lakhs

ANSWERS TO MULTIPLE CHOICE QUESTIONS

1. Option (b) 2

Reason:

Combined Leverage = Operating Leverage (OL) × Financial Leverage (FL)

2.8 = 1.4 × FL

FL = 2

Financial Leverage = 2

2. Option (c) 23.8%

Reason:

$$\text{P/V ratio} = \frac{\text{Contribution (c)}}{\text{Sales (S)}} \times 100$$

$$\text{Operating leverage} = \frac{C}{\text{C-Fixed Cost (FC)}}$$

$$1.4 = \frac{C}{C-2,040}$$

$$1.4\,(C - 2,040) = C$$

$$1.4\,C - 2,856 = C$$

$$C = \frac{2,856}{0.4}$$

C = ₹ 7,140 Lakhs

$$\text{P/V} = \frac{7,140}{30,000} \times 100 = 23.8\%$$

Therefore, P/V Ratio = 23.8%

3. Option (b) ₹ 1.05

Reason:

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of equity shares}}$$

EBT = C – FC – Interest

= 7140 – 2,040 – 2,550

= ₹ 2,550 Lakhs

PAT = EBT – Tax

= 2,550 – 765 = ₹ 1,785 Lakhs

$$\text{EPS} = \frac{1,785}{1,700} = 1.05$$

4. Option (c) 0.784

Reason:

$$\text{Assets turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{30,000}{38,250} = 0.784$$

Total Assets = Debt + Equity = ₹ 21,250 Lakhs + ₹ 17,000 Lakhs

= ₹ 38,250 Lakhs

5. Option (a) ₹ 19,286 Lakhs

Reason:

The minimum level of Sales which must be attained to at least pay finance cost of BEST Ltd. EBT zero means 100% reduction in EBT. Since the combined leverage is 2.8, sales will be dropped by 100/2.8=35.714%. Hence new sales will be;

₹ 30,000 Lakhs × (100 – 35.714) = ₹ 19,286 Lakhs.

Therefore, at ₹ 19,286 Lakhs level of sales, the Earnings before Tax of the company will be equal to zero.