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CA Shubham Gupta AIR 10
CFA, US L1 cleared
Scored 83 in CA Final SFM/AFM

MEET ME!

This side, CA Shubham Gupta.

*With a stellar **academic background**, I scored **All India Rank of 10** in the CA Final examinations (May/July 21 attempt) and cleared my CA in the first attempt at the age of 21. Major highlight was the CA Final SFM (finance), where I scored exceptionally well 83.*

*Armed with a solid foundation in commerce, I also earned a Bachelor's degree with Honors in B.Com. Alongside, I cleared Level 1 of the Chartered Financial Analyst (**CFA**), USA program.*

*From the very beginning, I am highly inclined to the world of finance. Be it opening and regularly trading in my own **Demat account from the age of 18** or handling family portfolios running in lakhs to making big financial decisions, I find finance very fascinating and interesting.*

*With **over 2.5 years of invaluable experience in business management consulting** during my job tenure post-qualification, I bring a wealth of practical knowledge to the table having established a comprehensive understanding of the intricacies of the finance industry.*

*I feel very delighted **to start my journey as an educator** in the field of finance and having picked up subjects*

- *CA Inter Paper 6 FM-SM*
- *CA Final Paper 2 AFM*

*Do join me for **CA Inter FM Xpress Revision batch** for May 24 onwards, launched in collaboration with our favorite **BB sir – CA Bhanwar Borana & BB Virtuals**. I hope you find the content useful and it adds value to your knowledge helping you clear exams and enter the prestigious CA club!*

Tayyari CA Ki!

Yours CA Shubham Gupta AIR 10

PREFACE

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Test Series: March, 2021

MOCK TEST PAPER –1

INTERMEDIATE (NEW): GROUP – II

PAPER – 8A: FINANCIAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours (For both the part of paper 8) **Maximum Marks – 60**

1. Answer the following:

(a) The following information is given:

Dividend per share (DPS)	Rs. 9
Cost of capital (K_e)	19%
Internal rate of return on investment	24%
Retention Ratio	25%

CALCULATE the market price per share by using:

(i) Walter's formula

(ii) Gordon's formula (Dividend Growth model)

(b) SN Ltd. has furnished the following ratios and information relating to the year ended 31st March 2021:

Share Capital	Rs. 6,25,000
Working Capital	Rs. 2,00,000
Gross Margin	25%
Inventory Turnover	5 times
Average Collection Period	1.5 months
Current Ratio	1.5:1
Quick Ratio	0.7:1
Reserves & Surplus to Bank & Cash	3 times

Further, the assets of the company consist of fixed assets and current assets, while its current liabilities comprise bank credit and others in the ratio of 3:1. Assume 360 days in a year.

You are required to PREPARE the Balance Sheet as on 31st March 2021.

(Note- Balance sheet may be prepared in traditional T Format.)

(c) Following information are related to four firms of the same industry:

Firm	Change in Revenue	Change in Operating Income	Change in Earning per Share
P	25%	23%	30%

Q	27%	30%	26%
R	24%	36%	20%
S	20%	30%	20%

For all the firms, FIND OUT:

(i) Degree of operating leverage, and

(ii) Degree of combined leverage.

(d) HN Limited is considering total investment of Rs. 20 lakhs. You are required to CALCULATE the level of earnings before interest and tax (EBIT) at which the EPS indifference point between the following financing alternatives will occur:

(i) Equity share capital of Rs. 12,00,000 and 14% debentures of Rs. 8,00,000.

Or

(ii) Equity share capital of Rs. 8,00,000, 16% preference share capital of Rs. 4,00,000 and 14% debentures of Rs. 8,00,000.

Assume the corporate tax rate is 30% and par value of equity share is Rs.10 in each case.

(4 × 5 Marks = 20 Marks)

2. CALCULATE the WACC by using Market value weights.

The capital structure of the company is as under:

	(Rs.)
Debentures (Rs.100 per debenture)	10,00,000
Preference shares (Rs.100 per share)	10,00,000
Equity shares (Rs.10 per share)	20,00,000
	40,00,000

The market prices of these securities are:

Debentures Rs. 115 per debenture

Preference shares Rs. 120 per preference share

Equity shares Rs. 265 each.

Additional information:

(1) Rs.100 per debenture redeemable at par, 10% coupon rate, 2% floatation cost, 10-year maturity.

(2) Rs.100 per preference share redeemable at par, 5% coupon rate, 2% floatation cost and 10-year maturity.

(3) Equity shares have a floatation cost of Rs. 1 per share.

The next year expected dividend is Rs. 5 with an annual growth of 15%. The firm has the practice of paying all earnings in the form of dividend.

Corporate tax rate is 30%. Use YTM method to calculate cost of debentures and preference shares.

(10 Marks)

3. PREPARE monthly cash budget for the first six months of 2021 on the basis of the following information:

(i) Actual and estimated monthly sales are as follows:

Actual	(Rs.)	Estimated	(Rs.)
October 2020	2,00,000	January 2021	60,000
November 2020	2,20,000	February 2021	80,000
December 2020	2,40,000	March 2021	1,00,000
		April 2021	1,20,000
		May 2021	80,000
		June 2021	60,000
		July 2021	1,20,000

(ii) Operating Expenses (including salary & wages) are estimated to be payable as follows:

Month	(Rs.)	Month	(Rs.)
January 2021	22,000	April 2021	30,000
February 2021	25,000	May 2021	25,000
March 2021	30,000	June 2021	24,000

(iii) Of the sales, 75% is on credit and 25% for cash. 60% of the credit sales are collected after one month, 30% after two months and 10% after three months.

(iv) Purchases amount to 80% of sales and are made on credit and paid for in the month preceding the sales.

(v) The firm has 12% debentures of Rs.1,00,000. Interest on these has to be paid quarterly in January, April and so on.

(vi) The firm is to make an advance payment of tax of Rs. 5,000 in April.

(vii) The firm had a cash balance of Rs. 40,000 at 31st Dec. 2020, which is the minimum desired level of cash balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored). **(10 Marks)**

4. (a) N&B Ltd. is considering one of two mutually exclusive proposals, Projects A and B, which require cash outlays of Rs. 34,00,000 and Rs. 33,00,000 respectively. The certainty-equivalent (C.E) approach is used in incorporating risk in capital budgeting decisions. The current yield on government bonds is 5% and this is used as the risk free rate. The expected net cash flows and their certainty equivalents are as follows:

Year-end	Project A		Project B	
	Cash Flow (Rs.)	C.E.	Cash Flow (Rs.)	C.E.
1	16,75,000	0.8	16,75,000	0.9
2	15,00,000	0.7	15,00,000	0.8
3	15,00,000	0.5	15,00,000	0.7
4	20,00,000	0.4	10,00,000	0.8
5	21,20,000	0.6	9,00,000	0.9

PV factor at 5% are as follows:

Year	1	2	3	4	5
PV factor	0.952	0.907	0.864	0.823	0.784

DETERMINE which project should be accepted. **(8 Marks)**

(b) DISCUSS the advantages of Certainty Equivalent Method. **(2 Marks)**

5. GG Pathology Lab Ltd. is using 2D sonography machine which has reached the end of its useful life. The lab is intending to upgrade along with the technology by investing in 3D sonography machine as per the choices preferred by the patients. Following new 3D sonography machine of two different brands with same features is available in the market:

Brand	Cost of machine (Rs.)	Life of machine (Rs.)	Maintenance Cost (Rs.)			SLM Depreciation rate (%)
			Year 1-5	Year 6-10	Year 11-15	
X	15,00,000	15	50,000	70,000	98,000	6
Y	10,00,000	10	70,000	1,15,000	-	6

Residual Value of machines shall be dropped by 10% and 40% of Purchase price for Brand X and Y respectively in the first year and thereafter shall be depreciated at the rate mentioned above on the original cost.

Alternatively, the machine of Brand Y can also be taken on rent to be returned back to the owner after use on the following terms and conditions:

- Annual Rent shall be paid in the beginning of each year and for first year it shall be Rs. 2,24,000. Annual Rent for the subsequent 4 years shall be Rs. 2,25,000.
- Annual Rent for the final 5 years shall be Rs. 2,70,000.
- The Rent/Agreement can be terminated by GG Labs by making a payment of Rs. 2,20,000 as penalty. This penalty would be reduced by Rs. 22,000 each year of the period of rental agreement.

You are required to:

(i) ADVISE which brand of 3D sonography machine should be acquired assuming that the use of machine shall be continued for a period of 20 years.

(ii) STATE which of the option is most economical if machine is likely to be used for a period of 5 years?

The cost of capital of GG Labs is 12%.

The present value factor of Rs. 1 @ 12% for different years is given as under:

Year	PVF	Year	PVF
1	0.893	9	0.361
2	0.797	10	0.322
3	0.712	11	0.287
4	0.636	12	0.257

5	0.567	13	0.229
6	0.507	14	0.205
7	0.452	15	0.183
8	0.404	16	0.163

(10 Marks)

6. (a) DISCUSS the advantages and disadvantages of Wealth maximization principle. **(4 Marks)**

(b) DISCUSS in brief the characteristics of Debentures. **(4 Marks)**

(c) DEFINE Security Premium Notes.

Or

DEFINE Masala bond. **(2 Marks)**

MOCK TEST PAPER – 1

INTERMEDIATE (NEW): GROUP – II

PAPER – 8A: FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (a) Working:

Calculation of Earnings per share (EPS):

$$EPS = \frac{DPS}{\text{Dividend Payout Ratio}}$$

$$EPS = \frac{Rs.\ 9}{1-0.25} = Rs.12$$

Market price per share by

(i) Walter's model:

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

$$= \frac{Rs.\ 9 + \frac{0.24}{0.19}(Rs.\ 12 - Rs.\ 9)}{0.19}$$

$$= Rs.\ 67.31$$

(ii) Gordon's model (Dividend Growth model):

$$P_o = \frac{D_o(1+g)}{K_e - g}$$

Where,

P_o = Present market price per share.

g = Growth rate (br) = 0.25 × 0.24 = 0.06

b = Retention ratio

k = Cost of Capital

r = Internal rate of return (IRR)

D_0 = Dividend per share

E = Earnings per share

$$= \frac{Rs.\ 9(1+0.06)}{0.19-0.06}$$

$$= \frac{Rs.\ 9.54}{0.13} = Rs.73.38$$

Alternatively,

$$P_o = \frac{E(1-b)}{k - br}$$

$$P_o = \frac{12\ (1-0.25)}{0.19 - 0.06} = \frac{9}{0.13} = Rs.\ 69.23$$

(b) Workings:

1. Current Ratio $= \frac{\text{Current Assets(CA)}}{\text{Current Liabilities(CL)}} = \frac{1.5}{1}$

   $\therefore$ CA = 1.5 CL

   Also, CA - CL = Rs. 2,00,000

   1.5 CL- CL = Rs. 2,00,000

   CL $= \frac{\text{Rs. 2,00,000}}{0.5} = \text{Rs. 4,00,000}$

   CA = 1.5 × Rs. 4,00,000 = Rs. 6,00,000

2. Bank Credit (BC) to Other Current Liabilities (OCL) ratio = 3:1

   $\frac{\text{Bank Credit (BC)}}{\text{Other Current Liabilities (OCL)}} = \frac{3}{1}$

   BC = 3 OCL

   Also, BC + OCL = CL

   3 OCL + OCL = Rs. 4,00,000

   OCL $= \frac{\text{Rs. 4,00,000}}{4} = \text{Rs. 1,00,000}$

   Bank Credit = 3 × Rs. 1,00,000 = Rs. 3,00,000

3. Quick Ratio $= \frac{\text{Current Assets - Inventories}}{\text{Current Liabilities}}$

   0.7 $= \frac{\text{Rs. 6,00,000-Inventories}}{\text{Rs. 4,00,000}}$

   Inventories = Rs. 6,00,000 – Rs. 2,80,000 = Rs. 3,20,000

4. Inventory Turnover = 5 times

   Inventory Turnover $= \frac{\text{Cost of goods sold (COGS)}}{\text{Average Inventory}}$

   Average Inventory $= \frac{\text{Cost of goods sold (COGS)}}{\text{Inventory Turnover}}$

   COGS = Rs. 3,20,000 × 5 = Rs. 16,00,000

5. Gross Margin $= \frac{\text{Sales - COGS}}{\text{Sales}} \times 100 = 25\%$

   Sales $= \frac{16,00,000}{0.75} = \text{Rs. 21,33,333.33}$

6. Average Collection Period (ACP) = 1.5 months = 45 days

   Debtors Turnover $= \frac{360}{\text{ACP}} = \frac{360}{45} = 8$ times

   Also, Debtors Turnover $= \frac{\text{Sales}}{\text{Average Debtors}}$

   Hence, Debtors $= \frac{\text{Rs.21,33,333.33}}{8} = \text{Rs.2,66,667}$

7. Bank & Cash = CA - (Debtors + Inventory)

= Rs. 6,00,000 – (Rs. 2,66,667 + 3,20,000) = Rs. 13,333

8. $\frac{\text{Reserves \& Surplus}}{\text{Bank \& Cash}} = 3$

Reserves & Surplus = 3 × Rs. 13,333 = Rs. 40,000

Balance Sheet of SN Ltd. as on 31st March 2021

Liabilities	(Rs.)	Assets	(Rs.)
Share Capital	6,25,000	Fixed Assets	4,65,000
Reserves & Surplus	40,000	(Balancing Figure)	
Current Liabilities:		Current Assets:	
Bank Credit	3,00,000	Inventories	3,20,000
Other Current Liabilities	1,00,000	Debtors	2,66,667
		Bank & Cash	13,333
	10,65,000		10,65,000

(c) Calculation of Degree of Operating leverage and Degree of Combined leverage

Firm	Degree of Operating Leverage (DOL) = $\frac{\%\text{ change in Operating Income}}{\%\text{ change in Revenue}}$	Degree of Combined Leverage (DCL) = $\frac{\%\text{ change in EPS}}{\%\text{ change in Revenue}}$
P	$\frac{23\%}{25\%} = 0.92$	$\frac{30\%}{25\%} = 1.2$
Q	$\frac{30\%}{27\%} = 1.11$	$\frac{26\%}{27\%} = 0.96$
R	$\frac{36\%}{24\%} = 1.50$	$\frac{20\%}{24\%} = 0.83$
S	$\frac{30\%}{20\%} = 1.50$	$\frac{20\%}{20\%} = 1.00$

(d) Computation of level of earnings before interest and tax (EBIT)

In case alternative (i) is accepted, then the EPS of the firm would be:

$$EPS_{\text{Alternative (i)}} = \frac{(EBIT - \text{Interest})(1 - \text{tax rate})}{\text{No. of equity shares}} = \frac{(EBIT - 0.14 \times 8,00,000)(1 - 0.3)}{1,20,000 \text{ shares}}$$

In case the alternative (ii) is accepted, then the EPS of the firm would be

$$EPS_{\text{Alternative (ii)}} = \frac{(EBIT - \text{Interest})(1 - \text{tax rate}) - PD}{\text{No. of equity shares}}$$

$$= \frac{(EBIT - 0.14 \times 8,00,000)(1 - 0.3) - 0.16 \times 4,00,000}{80,000 \text{ shares}}$$

In order to determine the indifference level of EBIT, the EPS under the two alternative plans should be equated as follows:

$$\frac{(EBIT - 0.14 \times 8,00,000)(1-0.3)}{1,20,000 \text{ shares}} = \frac{(EBIT - 0.14 \times 8,00,000)(1-0.3) - 0.16 \times 4,00,000}{80,000 \text{ shares}}$$

$$\text{Or, } \frac{0.7EBIT - 78,400}{1,20,000} = \frac{0.7EBIT - 1,42,400}{80,000}$$

Or 1.40 EBIT – Rs. 1,56,800 = 2.10 EBIT – Rs. 4,27,200

Or 0.70 EBIT = Rs. 2,70,400

$$\text{Or EBIT} = \frac{2,70,400}{0.7}$$

Or EBIT = Rs. 3,86,285.71 (approx.)

2. (i) Cost of Equity (K_e)

$$= \frac{D_1}{P_0 - F} + g = \frac{Rs.5}{Rs.265 - Re.1} + 0.15 = 0.1689 \text{ or } 16.89\%$$

(ii) Cost of Debt (K_d)

Calculation of NPV at discount rate of 5% and 7%

Year	Cash flows (Rs.)	Discount factor @ 5%	Present Value	Discount factor @ 7%	Present Value (Rs.)
0	112.7	1.000	(112.7)	1.000	(112.7)
1 to 10	7	7.722	54.05	7.024	49.17
10	100	0.614	61.40	0.508	50.80
NPV			+2.75		-12.73

Calculation of IRR

$$IRR = 5\% + \frac{2.75}{2.75 - (-12.73)}(7\% - 5\%) = 5\% + \frac{2.75}{15.48}(7\% - 5\%) = 5.36\%$$

Cost of Debt (K_d) = 5.36%

(iii) Cost of Preference shares (K_p)

Calculation of NPV at discount rate of 2% and 5%

Year	Cash flows (Rs.)	Discount factor @ 2%	Present Value	Discount factor @ 5%	Present Value (Rs.)
0	117.6	1.000	(117.6)	1.000	(117.6)
1 to 10	5	8.983	44.92	7.722	38.61
10	100	0.820	82.00	0.614	61.40
NPV			+9.32		-17.59

Calculation of IRR

$$IRR = 2\% + \frac{9.32}{9.32 - (-17.59)}(5\% - 2\%) = 2\% + \frac{9.32}{26.91}(5\% - 2\%) = 3.04\%$$

Cost of Preference Shares (K_p) = 3.04%

Calculation of WACC using market value weights

Source of capital	Market Value	Weights	After tax cost of capital	WACC (Ko)
	(Rs.)	(a)	(b)	(c) = (a)×(b)
10% Debentures (Rs.115× 10,000)	11,50,000	0.021	0.0536	0.00113
5% Preference shares (Rs.120× 10,000)	12,00,000	0.022	0.0304	0.00067
Equity shares (Rs.265 × 2,00,000)	5,30,00,000	0.957	0.1689	0.16164
	5,53,50,000	1.000		0.16344

WACC (K_o) = 0.16344 or 16.344%

3. Monthly Cash Budget for first six months of 2021

(Amount in Rs.)

Particulars	Jan.	Feb.	Mar.	April	May	June
Opening balance	40,000	40,000	40,000	40,000	40,000	40,000
Receipts:						
Cash sales	15,000	20,000	25,000	30,000	20,000	15,000
Collection from debtors	1,72,500	97,500	67,500	67,500	82,500	70,500
Total cash available (A)	2,27,500	1,57,500	1,32,500	1,37,500	1,42,500	1,25,500
Payments:						
Purchases	64,000	80,000	96,000	64,000	48,000	96,000
Operating Expenses	22,000	25,000	30,000	30,000	25,000	24,000
Interest on debentures	3,000	-	-	3,000	-	-
Tax payment	-	-	-	5,000	-	-
Total payments (B)	89,000	1,05,000	1,26,000	1,02,000	73,000	1,20,000
Minimum cash balance desired	40,000	40,000	40,000	40,000	40,000	40,000
Total cash needed (C)	1,29,000	1,45,000	1,66,000	1,42,000	1,13,000	1,60,000
Surplus/(deficit) (A - C)	98,500	12,500	(33,500)	(4,500)	29,500	(34,500)
Investment/financing						
Temporary Investments	(98,500)	(12,500)	-	-	(29,500)	-
Liquidation of temporary investments or temporary borrowings			33,500	4,500	-	34,500
Total effect of investment/financing(D)	(98,500)	(12,500)	33,500	4,500	(29,500)	34,500
Closing cash balance (A + D - B)	40,000	40,000	40,000	40,000	40,000	40,000

Workings:

1. Collection from debtors: **(Amount in Rs.)**

	Year 2020			Year 2021					
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
Total sales	2,00,000	2,20,000	2,40,000	60,000	80,000	1,00,000	1,20,000	80,000	60,000

Credit sales (75% of total sales)	1,50,000	1,65,000	1,80,000	45,000	60,000	75,000	90,000	60,000	45,000
Collections:									
One month		90,000	99,000	1,08,000	27,000	36,000	45,000	54,000	36,000
Two months			45,000	49,500	54,000	13,500	18,000	22,500	27,000
Three months				15,000	16,500	18,000	4,500	6,000	7,500
Total collections				**1,72,500**	**97,500**	**67,500**	**67,500**	**82,500**	**70,500**

2. Payment to Creditors: **(Amount in Rs.)**

	Year 2021						
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**
Total sales	60,000	80,000	1,00,000	1,20,000	80,000	60,000	1,20,000
Purchases (80% of total sales)	48,000	64,000	80,000	96,000	64,000	48,000	96,000
Payment:							
One month prior	**64,000**	**80,000**	**96,000**	**64,000**	**48,000**	**96,000**	

4. (a) Statement Showing the Net Present Value of Project A

Year end	Cash Flow (Rs.) (a)	C.E. (b)	Adjusted Cash flow (Rs.) (c) = (a) × (b)	Present value factor at 5% (d)	Total Present value (Rs.) (e) = (c) ×(d)
1	16,75,000	0.8	13,40,000	0.952	12,75,680
2	15,00,000	0.7	10,50,000	0.907	9,52,350
3	15,00,000	0.5	7,50,000	0.864	6,48,000
4	20,00,000	0.4	8,00,000	0.823	6,58,400
5	21,20,000	0.6	12,72,000	0.784	9,97,248
PV of total Cash Inflows					45,31,678
Less: Initial Investment					34,00,000
Net Present Value					**11,31,678**

Statement Showing the Net Present Value of Project B

Year end	Cash Flow (Rs.) (a)	C.E. (b)	Adjusted Cash flow (Rs.) (c) = (a) × (b)	Present value factor at 5% (d)	Total Present value (Rs.) (e) = (c) ×(d)
1	16,75,000	0.9	15,07,500	0.952	14,35,140
2	15,00,000	0.8	12,00,000	0.907	10,88,400
3	15,00,000	0.7	10,50,000	0.864	9,07,200
4	10,00,000	0.8	8,00,000	0.823	6,58,400
5	9,00,000	0.9	8,10,000	0.784	6,35,040
PV of total Cash Inflows					47,24,180
Less: Initial Investment					33,00,000
Net Present Value					**14,24,180**

Project B has NPV of Rs. 14,24,180 which is higher than the NPV of Project A. Thus, N&B Ltd. should accept Project B.

(b) Advantages of Certainty Equivalent Method:

1. The certainty equivalent method is simple and easy to understand and apply.
2. It can easily be calculated for different risk levels applicable to different cash flows. For example, if in a particular year, a higher risk is associated with the cash flow, it can be easily adjusted and the NPV can be recalculated accordingly.

5. Since the life span of each machine is different and time span exceeds the useful lives of each model, we shall use Equivalent Annual Cost method to decide which brand should be chosen.

(i) If machine is used for 20 years

(a) Residual value of machine of brand X

= [Rs. 15,00,000 – (1 - 0.10)] - (Rs. 15,00,000 × 0.06 × 14) = Rs. 90,000

(b) Residual value of machine of brand Y

= [Rs. 10,00,000 – (1 - 0.40)] - (Rs. 10,00,000 × 0.06 × 9) = Rs. 60,000

Present Value (PV) of cost if machine of brand X is purchased

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	15,00,000	1.000	15,00,000
1-5	50,000	3.605	1,80,250
6-10	70,000	2.046	1,43,220
11-15	98,000	1.161	1,13,778
15	(90,000)	0.183	(16,470)
			19,20,778

PVAF for 1-15 years = 6.812

Equivalent Annual Cost = $\frac{\text{Rs.19,20,778}}{6.812}$ = Rs. 2,81,969.76

Present Value (PV) of cost if machine of brand Y is purchased

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	10,00,000	1.000	10,00,000
1-5	70,000	3.605	2,52,350
6-10	1,15,000	2.046	2,35,290
10	(60,000)	0.322	(19,320)
			14,68,320

PVAF for 1-10 years = 5.651

Equivalent Annual Cost = $\frac{\text{Rs.14,68,320}}{5.651}$ = Rs. 2,59,833.66

Present Value (PV) of cost if machine of brand Y is taken on rent

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	2,24,000	1.000	2,24,000
1-4	2,25,000	3.038	6,83,550
5-9	2,70,000	2.291	6,18,570
			15,26,120

PVAF for 1-10 years = 5.651

Equivalent Annual Cost = $\frac{\text{Rs.15,26,120}}{5.651}$ = Rs. 2,70,061.94

Decision: Since Equivalent Annual Cash Outflow is least in case of purchase of Machine of brand Y the same should be purchased.

(ii) If machine is used for 5 years

(a) Scrap value of machine of brand X

= [Rs. 15,00,000 – (1 - 0.10)] - (Rs. 15,00,000 × 0.06 × 4) = Rs. 9,90,000

(b) Scrap value of machine of brand Y

= [Rs. 10,00,000 – (1 - 0.40)] - (Rs. 10,00,000 × 0.06 × 4) = Rs. 3,60,000

Present Value (PV) of cost if machine of brand X is purchased

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	15,00,000	1.000	15,00,000
1-5	50,000	3.605	1,80,250
5	(9,90,000)	0.567	(5,61,330)
			11,18,920

Present Value (PV) of cost if machine of brand Y is purchased

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	10,00,000	1.000	10,00,000
1-5	70,000	3.605	2,52,350
5	(3,60,000)	0.567	(2,04,120)
			10,48,230

Present Value (PV) of cost if machine of brand Y is taken on rent

Period	Cash Outflow (Rs.)	PVF @ 12%	PV (Rs.)
0	2,24,000	1.000	2,24,000
1-4	2,25,000	3.038	6,83,550
5	1,10,000*	0.567	62,370
			9,69,920

* [Rs. 2,20,000 - (Rs. 22,000 × 5) = Rs. 1,10,000]

Decision: Since Cash Outflow is least in case of rent of Machine of brand Y the same should be taken on rent.

6. (a) Advantages and disadvantages of Wealth maximization principle.

Advantages:

(i) Emphasizes the long term gains

(ii) Recognises risk or uncertainty

(iii) Recognises the timing of returns

(iv) Considers shareholders' return.

Disadvantages:

(i) Offers no clear relationship between financial decisions and share price.

(ii) Can lead to management anxiety and frustration.

(b) Characteristics of Debentures are as follows:

- Normally, debentures are issued on the basis of a debenture trust deed which lists the terms and conditions on which the debentures are floated.
- Debentures are either secured or unsecured.
- May or may not be listed on the stock exchange.
- The cost of capital raised through debentures is quite low since the interest payable on debentures can be charged as an expense before tax.
- From the investors' point of view, debentures offer a more attractive prospect than the preference shares since interest on debentures is payable whether or not the company makes profits.
- Debentures are thus instruments for raising long-term debt capital.
- The period of maturity normally varies from 3 to 10 years and may also increase for projects having high gestation period.

(c) Secured Premium Notes: Secured Premium Notes is issued along with a detachable warrant and is redeemable after a notified period of say 4 to 7 years. The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

Or

Masala bond: Masala (means spice) bond is an Indian name used for Rupee denominated bond that Indian corporate borrowers can sell to investors in overseas markets. These bonds are issued outside India but denominated in Indian Rupees. NTPC raised Rs. 2,000 crore via masala bonds for its capital expenditure in the year 2016.

Test Series: November, 2021

MOCK TEST PAPER - 2

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANCIAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) XYZ Company's equity share is quoted in the market at ₹ 25 per share currently. The company pays a dividend of ₹ 5 per share and the investor's market expects a growth rate of 5% per year.

You are required to:

(i) CALCULATE the company's cost of equity capital.

(ii) If the company issues 12% debentures of face value of ₹ 100 each and realises ₹ 95 per debenture while the debentures are redeemable after 10 years at a premium of 12%, CALCULATE cost of debenture using YTM?

Assume tax rate to be 30%.

(b) ABC Limited is setting up a project with a capital outlay of ₹ 90,00,000. It has two alternatives in financing the project cost.

Alternative-I: 100% equity finance by issuing equity shares of ₹ 10 each

Alternative-II: Debt-equity ratio 2:1 (issuing equity shares of ₹ 10 each)

The rate of interest payable on the debts is 18% p.a. The corporate tax rate is 30%. CALCULATE the indifference point between the two alternative methods of financing.

(c) The capital structure of PS Ltd. for the year ended 31st March, 2021 consisted as follows:

Particulars	Amount in ₹
Equity share capital (face value ₹ 10 each)	10,000
10% debentures (₹ 100 each)	1,00,000

During the year 2020-21, sales decreased to 10,000 units as compared to 12,000 units in the previous year. However, the selling price stood at ₹ 12 per unit and variable cost at ₹ 8 per unit for both the years. The fixed expenses were at ₹ 20,000 p.a. and the income tax rate is 30%.

You are required to CALCULATE the following:

(i) The degree of financial leverage at 12,000 units and 10,000 units.

(ii) The degree of operating leverage at 12,000 units and 10,000 units.

(iii) The percentage change in EPS due to change in units sold.

(d) The following information is supplied to you:

Particulars	₹
Total Earnings	5,00,000
Equity shares (of ₹ 100 each)	50,00,000
Dividend paid	3,75,000
Price/ Earnings ratio	12.5

Applying Walter's Model:

(i) ANALYSE whether the company is following an optimal dividend policy.

(ii) COMPUTE P/E ratio at which the dividend policy will have no effect on the value of the share.

(iii) Will your decision change, if the P/E ratio is 8 instead of 12.5? ANALYSE.

[4 × 5 Marks = 20 Marks]

2. Jensen and spencer pharmaceutical is in the business of manufacturing pharmaceutical drugs including the newly invented Covid vaccine. Due to increase in demand of Covid vaccines, the production had increased at all time high level and the company urgently needs a loan to meet the cash and investment requirements. It had already submitted a detailed loan proposal and project report to Expo-Impo bank, along with the financial statements of previous three years as follows:

Statement of Profit and Loss **(In ₹ '000)**

	2018–19	2019–20	2020–21
Sales			
Cash	400	960	1,600
Credit	3,600	8,640	14,400
Total sales	4,000	9,600	16,000
Cost of goods sold	2,480	5,664	9,600
Gross profit	1,520	3,936	6,400
Operating expenses:			
General, administration, and selling expenses	160	900	2,000
Depreciation	200	800	1,320
Interest expenses (on borrowings)	120	316	680
Profit before tax (PBT)	1,040	1,920	2,400
Tax @ 30%	312	576	720
Profit after tax (PAT)	728	1,344	1,680

BALANCE SHEET **(In ₹ '000)**

	2018–19	2019–20	2020–21
Assets			
Non-Current Assets			
Fixed assets (net of depreciation)	3,800	5,000	9,400
Current Assets			
Cash and cash equivalents	80	200	212
Accounts receivable	600	3,000	4,200
Inventories	640	3,000	4,500
Total	**5,120**	**11,200**	**18,312**
Equity & Liabilities			
Equity share capital (shares of ₹10 each)	2,400	3,200	4,000
Other Equity	728	2,072	3,752
Non-Current borrowings	1,472	2,472	5,000
Current liabilities	520	3,456	5,560
Total	**5,120**	**11,200**	**18,312**

INDUSTRY AVERAGE OF KEY RATIOS

Ratio	Sector Average
Current ratio	2.30:1
Acid test ratio (quick ratio)	1.20:1
Receivable turnover ratio	7 times
Inventory turnover ratio	4.85 times
Long-term debt to total debt	24%
Debt-to-equity ratio	35%
Net profit ratio	18%
Return on total assets	10%
Interest coverage ratio (times interest earned)	10

As a loan officer of Expo-Impo Bank, you are REQUIRED to apprise the loan proposal on the basis of comparison with industry average of key ratios considering closing balance for accounts receivable of ₹ 6,00,000 and inventories of ₹ 6,40,000 respectively as on 31st March, 2018. **[10 Marks]**

3. Superb Ltd. constructs customized parts for satellites to be launched by USA and Canada. The parts are constructed in eight locations (including the central headquarter) around the world. The Finance Director, Ms. Kuthrapali, chooses to implement video conferencing to speed up the budget process and save travel costs. She finds that, in earlier years, the company sent two officers from each location to the central headquarter to discuss the budget twice a year. The average travel cost per

person, including air fare, hotels and meals, is ₹ 27,000 per trip. The cost of using video conferencing is ₹ 8,25,000 to set up a system at each location plus ₹ 300 per hour average cost of telephone time to transmit signals. A total 48 hours of transmission time will be needed to complete the budget each year. The company depreciates this type of equipment over five years by using straight line method. An alternative approach is to travel to local rented video conferencing facilities, which can be rented for ₹ 1,500 per hour plus ₹ 400 per hour averge cost for telephone charges. You are Senior Officer of Finance Department. You have been asked by Ms. Kuthrapali to EVALUATE the proposal and SUGGEST if it would be worthwhile for the company to implement video conferencing. **[10 Marks]**

4. On 01st April, 2020, the Board of Director of ABC Ltd. wish to know the amount of working capital that will be required to meet the programme they have planned for the year. From the following information, PREPARE a working capital requirement forecast and a forecast profit and loss account and balance sheet:

Issued share capital	₹ 6,00,000
10% Debentures	₹ 1,00,000
Fixed Assets	₹ 4,50,000

Production during the previous year was 1,20,000 units; it is planned that this level of activity should be maintained during the present year.

The expected ratios of cost to selling price are: raw materials 60%, direct wages 10% overheads 20%

Raw materials are expected to remain in store for an average of two months before issue to production. Each unit of production is expected to be in process for one month. The time lag in wage payment is one month.

Finished goods will stay in the warehouse awaiting dispatch to customers for approximately three months.

Credit allowed by creditors is two months from the date of delivery of raw materials. Credit given to debtors is three months from the date of dispatch.

Selling price is ₹ 5 per unit.

There is a regular production and sales cycle and wages and overheads accrue evenly. **[10 Marks]**

5. (a) PQR Ltd. has under its consideration a project with an initial investment of ₹ 2,25,00,000. Three probable cash inflow scenarios with their probabilities of occurrence have been estimated as below:

Annual cash inflow (₹)	50,00,000	75,00,000	1,00,00,000
Probability	0.2	0.7	0.1

The project life is 5 years and the desired rate of return is 12%. The estimated terminal values for the project assets under the three probability alternatives are ₹ 0, ₹ 50,00,000 and ₹ 75,00,000 respectively.

You are required to:

(i) CALCULATE the probable NPV;

(ii) CALCULATE the worst-case NPV and the best-case NPV; and

(iii) STATE the probability occurrence of the worst case, if the cash flows are perfectly positively correlated over time. **[8 Marks]**

(b) 'Pecking order theory' suggests manager to use various sources for raising of fund in certain order. BRIEF out that order. **[2 Marks]**

6. (a) BRIEF out any four types of Preference shares along with its feature. **[4 Marks]**

(b) EXPLAIN any four types of Packing Credit. **[4 Marks]**

(c) EXPLAIN: Callable bonds and Puttable bonds.

Or

Briefly DESCRIBE bridge finance. **[2 Marks]**

Test Series: November, 2021

MOCK TEST PAPER 2

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/ HINTS

1. (a) (i) Cost of Equity Capital (K_e):

$$K_e = \frac{\text{Expected dividend per share}(D_1)}{\text{Market price per share}(P_0)} + \text{Growth rate}(g)$$

$$= \frac{₹\ 5 \times 1.05}{₹\ 25} + 0.05 = 26\%$$

(ii) Cost of Debenture (K_d):

Using Present Value method (or YTM)

Identification of relevant cash flows

Year	Cash flows
0	Current market price (P_0) = ₹ 95
1 to 10	Interest net of tax [I(1-t)] = 12% of ₹ 100 (1 – 0.30) = ₹ 8.40
10	Redemption value (RV) = ₹ 100 (1.12) = ₹ 112

Calculation of Net Present Values (NPV) at two discount rates

Year	Cash flows	Discount factor @ 9% (L)	Present Value	Discount factor @ 10% (H)	Present Value
0	(95)	1.0000	(95.00)	1.0000	(95.00)
1 to 10	8.40	6.4176	53.91	6.1445	51.61
10	112	0.4224	47.31	0.3855	43.18
NPV			+6.22		-0.21

Calculation of IRR

$$IRR = L + \frac{NPV_L}{NPV_L - NPV_H}(H - L)$$

$$= 9\% + \frac{6.22}{6.22 - (-0.21)}(10\% - 9\%) = 9\% + \frac{6.22}{6.43} = 9.97\%$$

Therefore, K_d = 9.97%

(b) Calculation of Indifference point between the two alternatives of financing.

Alternative-I By issue of 9,00,000 equity shares of ₹10 each amounting to ₹ 90 lakhs. No financial charges are involved.

Alternative-II By raising the funds in the following way:

Debt = ₹ 60 lakhs

Equity = ₹ 30 lakhs (3,00,000 equity shares of ₹ 10 each)

Interest payable on debt = $60,00,000 \times \frac{18}{100}$ = ₹ 10,80,000

The difference point between the two alternatives is calculated by:

$$\frac{(EBIT - I_1)(1-T)}{E_1} = \frac{(EBIT - I_2)(1-T)}{E_2}$$

$$\frac{(EBIT - 0)(1-0.30)}{9,00,000} = \frac{(EBIT - 10,80,000)(1-0.30)}{3,00,000}$$

$$\frac{(EBIT)(0.70)}{9,00,000} = \frac{(EBIT - 10,80,000)(0.70)}{3,00,000}$$

$$\frac{EBIT(0.70)}{3} = \frac{0.70(EBIT - 10,80,000)}{1}$$

EBIT = 3EBIT–32,40,000

–2 EBIT = –32,40,000

EBIT = $\frac{32,40,000}{2}$

EBIT = ₹ 16,20,000

Therefore, at EBIT of ₹ 16,20,000, earnings per share for the two alternatives is equal.

(c)

Sales in units	**12,000** (₹)	**10,000** (₹)
Sales Value	1,44,000	1,20,000
Variable Cost	(96,000)	(80,000)
Contribution	48,000	40,000
Fixed expenses	(20,000)	(20,000)
EBIT	28,000	20,000
Debenture Interest	(10,000)	(10,000)
EBT	18,000	10,000
Tax @ 30%	(5,400)	(3,000)
Profit after tax (PAT)	12,600	7,000
(i) Financial Leverage= $\frac{EBIT}{EBT}$	= $\frac{₹\ 28,000}{₹\ 18,000}$ = 1.56	= $\frac{₹\ 20,000}{₹\ 10,000}$ = 2

(ii) Operating leverage = $\frac{\text{Contribution}}{\text{EBIT}}$	= $\frac{₹\ 48,000}{₹\ 28,000}$ = 1.71	= $\frac{₹\ 40,000}{₹\ 20,000}$ = 2
(iii) Earnings per share (EPS)	= $\frac{₹\ 12,600}{₹\ 1,000}$ = ₹ 12.6	= $\frac{₹\ 7,000}{₹\ 1,000}$ = ₹ 7
Decrease in EPS	= ₹ 12.6 – ₹ 7 = ₹ 5.6	
% decrease in EPS	= $\frac{5.6}{12.6}$ X 100 = 44.44%	

(d) **(i)** The EPS of the firm is ₹ 10 (i.e. ₹ 5,00,000/ 50,000). r = 5,00,000/ 50,00,000 = 10%. The P/E Ratio is given at 12.5 and the cost of capital, K_e, may be taken at the inverse of P/E ratio. Therefore, K_e is 8 (i.e., 1/12.5). The firm is distributing total dividends of ₹ 3,75,000 among 50,000 shares, giving a dividend per share of ₹ 7.50. The value of the share as per Walter's model may be found as follows:

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e} = \frac{7.5 + \frac{0.1}{0.08}(10 - 7.5)}{0.08} = ₹\ 132.81$$

The firm has a dividend payout of 75% (i.e., ₹ 3,75,000) out of total earnings of ₹ 5,00,000. Since, the rate of return of the firm, r, is 10% and it is more than the K_e of 8%, therefore, by distributing 75% of earnings, the firm is not following an optimal dividend policy. The optimal dividend policy for the firm would be to pay zero dividend and in such a situation, the market price would be,

$$\frac{0 + \frac{0.1}{0.08}(10 - 0)}{0.08} = ₹\ 156.25$$

So, theoretically, the market price of the share can be increased by adopting a zero payout.

(ii) The P/E ratio at which the dividend policy will have no effect on the value of the share is such at which the K_e would be equal to the rate of return, r, of the firm. The K_e would be 10% (= r) at the P/E ratio of 10. Therefore, at the P/E ratio of 10, the dividend policy would have no effect on the value of the share.

(iii) If the P/E is 8 instead of 12.5, then the Ke which is the inverse of P/E ratio, would be 12.5 and in such a situation k_e> r and the market price, as per Walter's model would be:

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e} = \frac{7.5 + \frac{0.1}{0.125}(10 - 7.5)}{0.125} = ₹\ 76$$

2. **(In ₹ '000)**

Ratio	Formula	2018–19	2019–20	2020–21	Industry Average
Current ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{1,320}{520}$	$\frac{6,200}{3,456}$	$\frac{8,912}{5,560}$	2.30:1

		= 2.54	= 1.80	= 1.60	
Acid test ratio (quick ratio)	Quick Assets / Current Liabilities	680 / 520 = 1.31	3,200 / 3,456 = 0.93	4,412 / 5,560 = 0.79	1.20:1
Receivable turnover ratio	Credit Sales / Average Accounts Receivable	3,600 / (600+600)/2 = 6	8,640 / (600+ 3,000)/2 = 4.80	14,400 / (3,000+ 4,200)/2 = 4	7 times
Inventory turnover ratio	COGS / Average Inventory	2,480 / (640+640)/2 = 3.88	5,664 / (640+ 3,000)/2 = 3.11	9,600 / (3,000+ 4,500)/2 = 2.56	4.85 times
Long-term debt to total debt	Long term Debt / Total Debt × 100	1,472 / 1,992 × 100 = 73.90%	2,472 / 5,928 × 100 = 41.70%	5,000 / 10,560 × 100 = 47.35%	24%
Debt-to-equity ratio	Long term Debt / Shareholders' Equity × 100	1,472 / 3,128 × 100 = 47.06%	2,472 / 5,272 × 100 = 46.89%	5,000 / 7,752 × 100 = 64.50%	35%
Net profit ratio	Net Profit / Sales ×100	728 / 4,000 × 100 = 18.2%	1,344 / 9,600 × 100 = 14%	1,680 / 16,000 × 100 = 10.5%	18%
Return on total assets	Net Profit after taxes / Total assets ×100	728 / 5,120 × 100 = 14.22%	1,344 / 11,200 × 100 = 12%	1,680 / 18,312 × 100 = 9.17%	10%
Interest coverage ratio (times interest earned)	EBIT / Interest	1,160 / 120 = 9.67	2,236 / 316 = 7.08	3,080 / 680 = 4.53	10

Conclusion:

In the last two years, the current ratio and quick ratio are less than the ideal ratio (2:1 and 1:1 respectively) indicating that the company is not having enough resources to meet its current obligations. Receivables are growing slower. Inventory turnover is slowing down as well, indicating a relative build-up in inventories or increased investment in stock. High Long-term debt to total debt ratio and Debt to equity ratio compared to that of industry average indicates high dependency on

long term debt by the company. The net profit ratio is declining substantially and is much lower than the industry norm. Additionally, though the Return on Total Asset(ROTA) is near to industry average, it is declining as well. The interest coverage ratio measures how many times a company can cover its current interest payment with its available earnings. A high interest coverage ratio means that an enterprise can easily meet its interest obligations, however, it is declining in the case of Jensen & Spencer and is also below the industry average indicating excessive use of debt or inefficient operations.

On overall comparison of the industry average of key ratios than that of Jensen & Spencer, the company is in deterioration position. The company's profitability has declined steadily over the period. However, before jumping to the conclusion relying only on the key ratios, it is pertinent to keep in mind the industry, the company dealing in with i.e. manufacturing of pharmaceutical drugs. The pharmaceutical industry is one of the major contributors to the economy and is expected to grow further. After the covid situation, people are more cautious towards their health and are going to spend relatively more on health medicines. Thus, while analysing the loan proposal, both the factors, financial and non-financial, needs to be kept in mind.

3. Option I : Cost of travel, in case Video Conferencing facility is not provided

Total Trip = No. of Locations × No. of Persons × No. of Trips per Person = 7×2×2 = 28 Trips

Total Travel Cost (including air fare, hotel accommodation and meals) (28 trips × ₹ 27,000 per trip) **= ₹ 7,56,000**

Option II : Video Conferencing Facility is provided by Installation of Own Equipment at Different Locations

Cost of Equipment at each location (₹ 8,25,000 × 8 locations) = ₹ 66,00,000

Economic life of Machines (5 years). Annual depreciation (66,00,000/5) = ₹ 13,20,000

Annual transmission cost (48 hrs. transmission × 8 locations × ₹ 300 per hour) = ₹ 1,15,200

Annual cost of operation (13,20,000 + 1,15,200) **= ₹ 14,35,200**

Option III : Engaging Video Conferencing Facility on Rental Basis

Rental cost (48 hrs. × 8 location × ₹ 1,500 per hr) = ₹ 5,76,000

Telephone cost (48 hrs.× 8 locations × ₹ 400 per hr.) = ₹ 1,53,600

Total rental cost of equipment (5,76,000 + 1,53,600) **= ₹ 7,29,600**

Analysis: The annual cash outflow is minimum, if video conferencing facility is engaged on rental basis. Therefore, Option III is suggested.

4. Forecast Profit and Loss Account for the period 01.04.2020 to 31.03.2021

Particulars	₹	Particulars	₹
Materials consumed 1,20,000 @ ₹ 3	3,60,000	By Sales 1,20,000 @ ₹ 5	6,00,000
Direct wages : 1,20,000 @ ₹ 0.50	60,000		
Overheads : 1,20,000 @ ₹ 1	1,20,000		

Gross profit c/d	60,000		
	6,00,000		**6,00,000**
Debenture interest (10% of 1,00,000)	10,000	By gross profit b/d	60,000
Net profit c/d	50,000		
	60,000		**60,000**

Working Capital Requirement Forecast for the year 01.04.2020 to 31.03.2021

Particulars	**Period (Months)**	**Total (₹)**	**Current Assets (₹)**				**Current Liabilities (₹)**
			Raw materials	Work-in-progress	Finished goods	Debtors	Creditors
1. Material							
In store	2		60,000				
In work-in-progress	1			30,000			
In finished goods	3				90,000		
Credit to debtors	3					90,000	
	9						
Less : Credit from creditors	2						60,000
Net block period	7	**2,10,000**					
2. Wages:							
In work-in-progress	1/2			2,500			
In finished goods	3				15,000		
Credit to debtors	3					15,000	
	6½						
Less : Time lag in payment	1						5,000

Net block period	**5 ½**	**27,500**					
3. Overheads:							
In work-in-progress	½			5,000			
In finished goods	3				30,000		
Credit to debtors	3					30,000	
Net block period	**6½**	**65,000**					
4. Profit							
Credit to debtors	3					15,000	
Net block period	**3**	**15,000**					
Total (₹)		**3,17,500**	**60,000**	**37,500**	**1,35,000**	**1,50,000**	**65,000**

Forecast Balance Sheet as on 31.03.2021

	(₹)			(₹)
Issued share capital	6,00,000	Fixed Assets		4,50,000
Profit and Loss A/c	50,000	Current Assets:		
10% Debentures	1,00,000	Stock:		
Sundry creditors	65,000	Raw materials	60,000	
Bank overdraft-		Work-in-progress	37,500	
Balancing figure	17,500	Finished goods	1,35,000	2,32,500
		Debtors		1,50,000
	8,32,500			**8,32,500**

The Total amount of working capital, thus, stands as follows:	₹
Requirement as per working capital	3,17,500
Less: Bank overdraft as per balance sheet	17,500
Net requirement	3,00,000

Notes:

1. Average monthly production: 1,20,000 ÷ 12 = 10,000 units
2. Average cost per month:

Raw Material	10,000 × (₹ 5 × 0.6) = ₹ 30,000
Direct wages	10,000 × (₹ 5 × 0.1) = ₹ 5,000
Overheads	10,000 × (₹ 5 × 0.2) = ₹ 10,000

3. Average profit per month: 10,000 × (₹ 5 × 0.1) = ₹ 5,000
4. Wages and overheads accrue evenly over the period and, hence, are assumed to be completely introduced for half the processing time.

5. (a) (i) Calculation of Net Present Value (NPV)

Year	Prob. = 0.2		Prob. = 0.7		Prob. = 0.1				
	Cash flow	Probable cash flow	Cash flow	Probable cash flow	Cash flow	Probable cash flow	Total Cash flow	PVF@ 12%	PV of Total cash flow
0							(2,25,00,000)	1.0000	(2,25,00,000)
1 to 5	50,00,000	10,00,000	75,00,000	52,50,000	1,00,00,000	10,00,000	72,50,000	3.6048	2,61,34,800
5	0	0	50,00,000	35,00,000	75,00,000	7,50,000	42,50,000	0.5674	24,11,450
Net Present Value (NPV)									**60,46,250**

(ii) Worst and Best case is the case where expected annual cash inflows are minimum and maximum respectively.

Calculation of Worst Case and Best Case NPV:

Year	PVF@ 12%	Worst case		Best Case	
		Cash flows	PV of Cash flows	Cash flows	PV of Cash flows
0	1.0000	(2,25,00,000)	(2,25,00,000)	(2,25,00,000)	(2,25,00,000)
1 to 5	3.6048	50,00,000	1,80,24,000	1,00,00,000	3,60,48,000
5	0.5674	0	0	75,00,000	42,55,500
NPV			**(44,76,000)**		**1,78,03,500**

Worst case NPV = ₹ (44,76,000)

Best Case NPV = ₹ 1,78,03,500

(iii) The cash flows are perfectly positively correlated over time means cash flow in first year will be cash flows in subsequent years. The cash flow of ₹ 50,00,000 is the worst case cash flow and its probability is 20%, thus, possibility of worst case is 20%.

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

1. Managers first choice is to use **internal finance.**

2. In absence of internal finance, they can use secured **debt**, unsecured debt, hybrid debt etc.

3. Managers may issue new **equity** shares as a last option.

6. (a)

Sl. No.	Type of Preference Shares	Salient Features
1	Cumulative	Arrear Dividend will accumulate.
2	Non-cumulative	No right to arrear dividend.
3	Redeemable	Redemption should be done.
4	Participating	Can participate in the surplus which remains after payment to equity shareholders.
5	Non- Participating	Cannot participate in the surplus after payment of fixed rate of Dividend.
6	Convertible	Option of converting into equity Shares.

(b) (i) **Clean packing credit:** This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighed according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(ii) **Packing credit against hypothecation of goods:** Export finance is made available on certain terms and conditions where the exporter has pledge able interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit, along with the firm export order or letter of credit relative stock statements and thereafter continue submitting them every fortnight and/or whenever there is any movement in stocks.

(iii) **Packing credit against pledge of goods:** Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.

(iv) **E.C.G.C. guarantee:** Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.

(v) **Forward exchange contract:** Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contact with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(c) (i) **Callable bonds:** A callable bond has a call option which gives the issuer the right to redeem the bond before maturity at a predetermined price known as the call price (Generally at a premium).

(ii) **Puttable bonds:** Puttable bonds give the investor a put option (i.e. the right to sell the bond) back to the company before maturity.

OR

(c) **Bridge Finance:** Bridge finance refers to loans taken by a company normally from commercial banks for a **short period because of pending disbursement of loans sanctioned by financial institutions**. Though it is of short-term nature but since it is an important step in the facilitation of long-term loan, therefore it is being discussed along with the long term sources of funds. Normally, it takes time for financial institutions to disburse loans to companies. However, once the loans are approved by the term lending institutions, companies, in order not to lose further time in starting their projects, arrange short term loans from commercial banks. The bridge loans are repaid/ adjusted out of the term loans as and when disbursed by the concerned institutions. Bridge loans are normally secured by hypothecating movable assets, personal guarantees and demand promissory notes. Generally, the rate of interest on bridge finance is higher as compared with that on term loans

Test Series: March, 2022

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Attempt any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) The following figures have been extracted from the annual report of Xee Ltd.:

Net Profit	₹ 75 lakhs
Outstanding 12% preference shares	₹ 250 lakhs
No. of equity shares	3 lakhs
Return on Investment	20%
Cost of capital i.e. (K_e)	16%

COMPUTE the approximate dividend pay-out ratio so as to keep the share price at ₹ 105 by using Walter's model?

(b) Owner's equity of Yay Ltd. is ₹ 6,00,000. The financial ratios of the company are given below:

Current debt to total debt	0.4
Total debt to Owner's equity	0.6
Fixed assets to Owner's equity	0.6
Total assets turnover	2 times
Inventory turnover	8 times

COMPLETE the following Balance Sheet from the information given above:

Liabilities	(₹)	Assets	(₹)
Current Debt	-	Cash	-
Long-term Debt	-	Inventory	-
Total Debt	-	Total Current Assets	-
Owner's Equity	-	Fixed Assets	-
	9,60,000		-

(c) The capital structure of Roshan Ltd. for the year ended 31st March, 2022 consisted as follows:

Particulars	**Amount (₹' 000)**
Equity share capital (face value ₹ 100 each)	1,50,000
10% debentures (₹ 100 each)	1,50,000

During the year 2021-22, sales of the company decreased to 15,00,000 units as compared to 18,00,000 units in the previous year. However, the selling price stood at ₹ 120 per unit and variable cost at ₹ 80 per unit for both the years. The fixed expenses were at ₹ 3 crore p.a. and the income tax rate is 30%.

You are required to CALCULATE the following:

(i) The degree of financial leverage at 18,00,000 units and 15,00,000 units.

(ii) The degree of operating leverage at 18,00,000 units and 15,00,000 units.

(iii) The percentage change in EPS.

(d) (i) A company's equity share is quoted in the market at ₹ 125 per share currently. The company pays a dividend of ₹ 10 per share and the investor's market expects a growth rate of 6% per year. CALCULATE the company's cost of equity capital.

(ii) If the company issues 10% debentures of face value of ₹ 100 each and realises ₹ 98 per debenture while the debentures are redeemable after 12 years at a premium of 10%, CALCULATE cost of debenture using YTM?

Assume Tax Rate to be 50%. **[4 × 5 Marks = 20 Marks]**

2. PRI Ltd. and SHA Ltd. are identical, however, their capital structure (in market-value terms) differs as follows:

Company	Debt	Equity
PRI Ltd.	60%	40%
SHA Ltd.	20%	80%

The borrowing rate for both companies is 8% in a no-tax world and capital markets are assumed to be perfect.

(a) (i) If Mr. Rhi, owns 6% of the equity shares of PRI Ltd., DETERMINE his return if the Company has net operating income of ₹ 9,00,000 and the overall capitalization rate of the company (K_o) is 18%.

(ii) CALCULATE the implied required rate of return on equity of PRI Ltd.

(b) SHA Ltd. has the same net operating income as PRI Ltd.

(i) CALCULATE the implied required equity return of SHA Ltd.

(ii) ANALYSE why does it differ from that of PRI Ltd. **[10 Marks]**

3. Following information is forecasted by Gween Limited for the year ending 31st March, 2022:

	Balance as at 31st March, 2022	Balance as at 31st March, 2021
	(₹ in lakh)	(₹ in lakh)
Raw Material	845	585
Work-in-progress	663	455
Finished goods	910	780
Receivables	1,755	1,456
Payables	923	884
Annual purchases of raw material (all credit)	5,200	
Annual cost of production	5,850	
Annual cost of goods sold	6,825	

Annual operating cost	4,225	
Annual sales (all credit)	7,605	

Considering one year as equal to 365 days, CALCULATE:

(i) Net operating cycle period.

(ii) Number of operating cycles in the year.

(iii) Amount of working capital requirement. **[10 Marks]**

4. A manufacturing company is presently paying a garbage disposer company ₹ 0.50 per kilogram to dispose-off the waste resulting from its manufacturing operations. At normal operating capacity, the waste is about 2,00,000 kilograms per year.

After spending ₹ 1,20,000 on research, the company discovered that the waste could be sold for ₹ 5 per kilogram if it was processed further. Additional processing would, however, require an investment of ₹ 12,00,000 in new equipment, which would have an estimated life of 10 years with no salvage value. Depreciation would be calculated by straight line method.

No change in the present selling and administrative expenses is expected except for the costs incurred in advertising ₹ 40,000 per year, if the new product is sold. Additional processing costs would include variable cost of ₹ 2.50 per kilogram of waste put into process along with fixed cost of ₹ 60,000 per year (excluding Depreciation).

There will be no losses in processing, and it is assumed that the total waste processed in a given year will be sold in the same year. Estimates indicate that 2,00,000 kilograms of the product could be sold each year.

The management when confronted with the choice of disposing off the waste or processing it further and selling it, seeks your ADVICE. Which alternative would you RECOMMEND? Assume that the firm's cost of capital is 15% and it pays on an average 50% Tax on its income.

Consider Present value of Annuity of ₹ 1 per year @ 15% p.a. for 10 years as 5.019. **[10 Marks]**

5. (a) X Ltd. is considering two mutually exclusive projects A and B.

Net Cash flow probability distribution of each project has been given below:

Project-A		Project-B	
Net Cash Flow (₹)	Probability	Net Cash Flow (₹)	Probability
1,72,000	0.30	3,38,000	0.20
1,82,000	0.30	3,18,000	0.30
1,92,000	0.40	2,98,000	0.50

(i) COMPUTE the following:

(I) Expected Net Cash Flow of each project.

(II) Variance of each project.

(III) Standard Deviation of each project.

(IV) Coefficient of Variation of each project.

(ii) IDENTIFY which project do you recommend? Give reason. **[8 Marks]**

(b) DISTINGUISH between Sensitivity Analysis & Scenario Analysis. **[2 Marks]**

6. (a) 'Financial distress is a position where Cash inflows of a firm are inadequate to meet all its current obligations.'

Based on above mentioned context, EXPLAIN Financial Distress along with Insolvency. **[4 Marks]**

(b) EXPLAIN any four types of Packing Credit. **[4 Marks]**

(c) EXPLAIN in brief Callable bonds and Puttable bonds.

Or

STATE in brief four features of Samurai Bond. **[2 Marks]**

Test Series: March, 2022

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

The solutions contained herein may be based on certain assumptions. Therefore, Question may be solved based on any other logical alternative assumption/ approach/ presentation.

1. (a)

Particulars	(₹' in lakhs)
Net Profit	75
Less: Preference dividend	30
Earnings for equity shareholders	45
Earnings per share	45/3 = ₹ 15

Let, the dividend per share be D to get share price of ₹ 105

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

$$105 = \frac{D + \frac{0.20}{0.16}(15-D)}{0.16}$$

$$16.8 = \frac{0.16D + 3 - 0.20D}{0.16}$$

$$0.04D = 3 - 2.688$$

$$D = 7.80$$

$$\text{D/P ratio} = \frac{DPS}{EPS} \times 100 = \frac{7.80}{15} \times 100 = 52\%$$

So, the required dividend pay-out ratio will be = 52%

(b) **Balance Sheet**

Liabilities	(₹)	Assets	(₹)
Current debt	1,44,000	Cash (balancing figure)	3,60,000
Long term debt	2,16,000	Inventory	2,40,000
Total Debt	3,60,000	Total Current Assets	6,00,000
Owner's Equity	6,00,000	Fixed Assets	3,60,000
Total liabilities	9,60,000	Total Assets	9,60,000

Working Notes:

1. Total debt = 0.60 x Owner's Equity = 0.60 x ₹ 6,00,000 = ₹ 3,60,000

Further, Current debt to Total debt = 0.40.

So, Current debt = 0.40 × ₹ 3,60,000 = ₹ 1,44,000

Long term debt = ₹ 3,60,000 - ₹ 1,44,000 = ₹ 2,16,000

2. Fixed assets = 0.60 × Owner's Equity = 0.60 × ₹ 6,00,000 = ₹ 3,60,000

3. Total Assets = Total Liabilities = ₹ 9,60,000

Total assets to turnover = 2 Times; Inventory turnover = 8 Times

Hence, Inventory /Total assets = 2/8=1/4,

Therefore, Inventory = ₹ 9,60,000/4 = ₹ 2,40,000

(c) Income Statement with required calculations

Particulars	Previous Year	Current Year
Sales (in units)	18,00,000	15,00,000
No. of shares	15,00,000	15,00,000
	(₹' 000)	**(₹' 000)**
Sales Value	2,16,000	1,80,000
Variable Cost	(1,44,000)	(1,20,000)
Contribution	72,000	60,000
Fixed expenses	(30,000)	(30,000)
EBIT	42,000	30,000
Debenture Interest	(15,000)	(15,000)
EBT	27,000	15,000
Tax @ 30%	(8,100)	(4,500)
Profit after tax (PAT)	18,900	10,500
(i) Financial Leverage $= \frac{EBIT}{EBT}$	$= \frac{₹\ 42,000}{₹\ 27,000}$ = 1.56	$= \frac{₹\ 30,000}{₹\ 15,000}$ = 2
(ii) Operating leverage $= \frac{Contribution}{EBIT}$	$= \frac{₹\ 72,000}{₹\ 42,000}$ = 1.71	$= \frac{₹\ 60,000}{₹\ 30,000}$ = 2
(iii) Earnings per share (EPS) $= \frac{PAT}{No.\ of\ shares}$	$= \frac{₹\ 18,900}{₹\ 1,500}$ = ₹ 12.6	$= \frac{₹\ 10,500}{₹\ 1,500}$ = ₹ 7
Decrease in EPS	= ₹ 12.6 – ₹ 7 = ₹ 5.6 % decrease in EPS $= \frac{5.6}{12.6} \times 100$ = 44.44%	

(d) (i) Cost of Equity Capital (Ke):

$$K_e = \frac{\text{Expected dividend per share (D1)}}{\text{Market price per share (P0)}} + \text{Growth rate(g)}$$

$$= \frac{₹\ 10 \times 1.06}{₹\ 125} + 0.06 = 0.1448 \text{ or } 14.48\%$$

(ii) Cost of Debenture (K_d):

Using Present Value method (YTM)

Identification of relevant cash flows

Year	Cash flows
0	Current market price (P_0) = ₹ 98
1 to 12	Interest net of tax [I(1-t)] = 10% of ₹ 100 (1 – 0.5) = ₹ 5
12	Redemption value (RV) = ₹ 100 (1.10) = ₹ 110

Calculation of Net Present Values (NPV) at two discount rates

Year	Cash flows (₹)	Discount factor @ 5% (L)	Present Value (₹)	Discount factor @ 10% (H)	Present Value (₹)
0	(98)	1.000	(98.00)	1.000	(98.00)
1 to 12	5	8.863	44.32	6.814	34.07
12	110	0.557	61.27	0.319	35.09
NPV			+7.59		-28.84

Calculation of IRR

$$IRR = L + \frac{NPVL}{NPVL - NPVH}(H-L)$$

$$= 5\% + \frac{7.59}{7.59-(-28.84)}(10\%-5\%) = 6.04\%$$

Therefore, K_d = 6.04%

2. Value of PRI Ltd. = $\frac{NOI}{K_o} = \frac{₹\ 9,00,000}{18\%} =$ ₹ 50,00,000

(a) (i) Return on Shares of Mr. Rhi on PRI Ltd.

Particulars	Amount (₹)
Value of the company	50,00,000
Market value of debt (60% x ₹ 50,00,000)	30,00,000
Market value of shares (40% x ₹ 50,00,000)	**20,00,000**
Particulars	**Amount (₹)**
Net operating income	9,00,000
Interest on debt (8% × ₹ 30,00,000)	2,40,000
Earnings available to shareholders	**6,60,000**
Return on 6% shares (6% × ₹ 6,60,000)	**39,600**

(ii) Implied required rate of return on equity of PRI Ltd. = $\frac{₹\ 6,60,000}{₹\ 20,00,000}$ = **33%**

(b) (i) Calculation of Implied rate of return of SHA Ltd.

Particulars	Amount (₹)
Total value of company	50,00,000

Market value of debt (20% × ₹ 50,00,000)	10,00,000
Market value of equity (80% × ₹ 50,00,000)	**40,00,000**
Particulars	**Amount (₹)**
Net operating income	9,00,000
Interest on debt (8% × ₹ 10,00,000)	80,000
Earnings available to shareholders	**8,20,000**

Implied required rate of return on equity = $\frac{₹\ 8,20,000}{₹\ 40,00,000}$ = **20.5%**

(ii) Implied required rate of return on equity of SHA Ltd. is lower than that of PRI Ltd. because SHA Ltd. uses less debt in its capital structure. As the equity capitalisation is a linear function of the debt-to-equity ratio when we use the net operating income approach, the decline in required equity return offsets exactly the disadvantage of not employing so much in the way of "cheaper" debt funds.

3. Working Notes:

1. **Raw Material Storage Period (R)**

$$= \frac{\text{Average Stock of Raw Material}}{\text{Annual Consumption of Raw Material}} \times 365$$

$$= \frac{\frac{₹\ 585 + ₹\ 845}{2}}{₹\ 4,940} \times 365 = 53 \text{ days}$$

Annual Consumption of Raw Material = Opening Stock + Purchases - Closing Stock

= ₹ 585 + ₹ 5,200 – ₹ 845 = ₹ 4,940 lakh

2. **Work – in - Progress (WIP) Conversion Period (W)**

$$= \frac{\text{Average Stock of WIP}}{\text{Annual Cost of Production}} \times 365$$

$$= \frac{\frac{₹\ 455 + ₹\ 663}{2}}{₹\ 5,850} \times 365 = 35 \text{ days}$$

3. **Finished Stock Storage Period (F)**

$$= \frac{\text{Average Stock of Finished Goods}}{\text{Cost of Goods Sold}} \times 365$$

$$= \frac{\frac{₹\ 780 + ₹\ 910}{2}}{₹\ 6,825} \times 365 = 45 \text{ days.}$$

4. **Receivables (Debtors) Collection Period (D)**

$$= \frac{\text{Average Receivables}}{\text{Annual Credit Sales}} \times 365$$

$$= \frac{\frac{₹\ 1,456 + ₹\ 1,755}{2}}{₹\ 7,605} \times 365 = 77 \text{ days}$$

5. **Payables (Creditors) Payment Period (C)**

$$= \frac{\text{Average Payables for materials}}{\text{Annual Credit purchases}} \times 365$$

$$= \frac{\frac{₹\ 884 + ₹\ 923}{2}}{₹\ 5,200} \times 365 = 64 \text{ days}$$

(i) Net Operating Cycle Period

= R + W + F + D - C

= 53 + 35 + 45 + 77 – 64 = 146 days

(ii) Number of Operating Cycles in the Year

$$= \frac{365}{\text{Operating Cycle Period}} = \frac{365}{146} = 2.5 \text{ times}$$

(iii) Amount of Working Capital Required

$$= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycles}} = \frac{₹\ 4,225}{2.5} = ₹\ 1,690 \text{ lakh}$$

Note: Number of days may vary due to fraction.

4. Evaluation of Alternatives:

Savings in disposing off the waste

Particulars	(₹)
Outflow (2,00,000 × ₹ 0.50)	1,00,000
Less: tax savings @ 50%	50,000
Net Outflow per year	**50,000**

Calculation of Annual Cash inflows in Processing of waste Material

Particulars	Amount (₹)	Amount (₹)
Sale value of waste (₹ 5 × 2,00,000 kilograms)		10,00,000
Less: Variable processing cost (₹ 2.50 × 2,00,000 kilograms)	5,00,000	
Less: Fixed processing cost	60,000	
Less: Advertisement cost	40,000	
Less: Depreciation	1,20,000	(7,20,000)
Earnings before tax (EBT)		**2,80,000**
Less: Tax @ 50%		(1,40,000)
Earnings after tax (EAT)		1,40,000
Add: Depreciation		1,20,000
Annual Cash inflows		**2,60,000**

Total Annual Benefits = Annual Cash inflows + Net savings (adjusting tax) in disposal cost

= ₹ 2,60,000 + ₹ 50,000 = ₹ 3,10,000

Calculation of Net Present Value

Year	Particulars	Amount (₹)
0	Investment in new equipment	(12,00,000)

1 to 10	Total Annual benefits × PVAF$_{(10\ years,\ 15\%)}$	
	₹ 3,10,000 × 5.019	15,55,890
	Net Present Value	**3,55,890**

Recommendation: Processing of waste is a better option as it gives a positive Net Present Value.
Note- Research cost of ₹ 1,20,000 is not relevant for decision making as it is sunk cost.

5 (a) (i) (I) Calculation of Expected Net Cash Flow (ENCF) of Project A and Project B

Project A			Project B		
Net Cash Flow (₹)	**Probability**	**Expected Net Cash Flow (₹)**	**Net Cash Flow (₹)**	**Probability**	**Expected Net Cash Flow (₹)**
1,72,000	0.30	51,600	3,38,000	0.20	67,600
1,82,000	0.30	54,600	3,18,000	0.30	95,400
1,92,000	0.40	76,800	2,98,000	0.50	1,49,000
ENCF		**1,83,000**			**3,12,000**

(II) Variance of Projects

Project A

Variance (σ^2) = (1,72,000 – 1,83,000)^2 × (0.3) + (1,82,000 - 1,83,000)^2 × (0.3) + (1,92,000 – 1,83,000)^2 × (0.4)

= 3,63,00,000 + 3,00,000 + 3,24,00,000 **= 6,90,00,000**

Project B

Variance($\sigma^{2)}$ = (3,38,000 – 3,12,000)^2 × (0.2) + (3,18,000 – 3,12,000)^2 × (0.3) + (2,98,000 – 3,12,000)^2 × (0.5)

= 13,52,00,000 + 1,08,00,000 + 9,80,00,000 **= 24,40,00,000**

(III) Standard Deviation of Projects

Project A

Standard Deviation (σ) = $\sqrt{\text{Variance}(\sigma^2)}$ = $\sqrt{6,90,00,000}$ **= 8,306.624**

Project B

Standard Deviation (σ) = $\sqrt{\text{Variance}(\sigma^2)}$= $\sqrt{24,40,00,000}$ **= 15,620.499**

(IV) Coefficient of Variation of Projects

Projects	Coefficient of variation $\left(\frac{\text{Standard Deviation}}{\text{Expected Net Cash Flow}}\right)$	Risk	Expected Net Cash Flow
A	$\frac{8,306.624}{1,83,000}$ **= 0.045 or 4.5%**	Less	Less
B	$\frac{15,620.499}{3,12,000}$ **= 0.050 or 5.0%**	More	More

(ii) In project A risk per rupee of cash flow is 0.045 (approx.) while in project B it is 0.050 (approx.). Therefore, Project A is better than Project B.

(b) Sensitivity Analysis Vs. Scenario Analysis: Sensitivity analysis and Scenario analysis both help to understand the impact of the change in input variable on the outcome of the project. However, there are certain basic differences between the two.

Sensitivity analysis calculates the impact of the change of a **single** input variable on the outcome of the project viz., NPV or IRR. The sensitivity analysis thus enables to identify that single critical variable which can impact the outcome in a huge way and the range of outcomes of the project given the change in the input variable.

Scenario analysis, on the other hand, is based on a **scenario**. The scenario may be recession or a boom wherein depending on the scenario, all input variables change. Scenario Analysis calculates the outcome of the project considering this scenario where the variables have changed simultaneously. Similarly, the outcome of the project would also be considered for the normal and recessionary situation. The variability in the outcome under the three different scenarios would help the management to assess the risk a project carries. Higher deviation in the outcome can be assessed as higher risk and lower to medium deviation can be assessed accordingly.

Scenario analysis is far more **complex** than sensitivity analysis because in scenario analysis all inputs are changed simultaneously, considering the situation in hand while in sensitivity analysis, only one input is changed and others are kept constant.

6 (a) Financial Distress and Insolvency: There are various factors like price of the product/ service, demand, price of inputs e.g., raw material, labour etc., which is to be managed by an organisation on a continuous basis. Proportion of debt also need to be managed by an organisation very delicately. Higher debt requires higher interest and if the cash inflow is not sufficient then it will put lot of pressure to the organisation. Both short term and long-term creditors will put stress to the firm. If all the above factors are not well managed by the firm, it can create situation known as distress, so financial distress is a position where Cash inflows of a firm are inadequate to meet all its current obligations.

Now if distress continues for a long period of time, firm may have to sell its asset, even many times at a lower price. Further when revenue is inadequate to revive the situation, firm will not be able to meet its obligations and become insolvent. So, insolvency basically means inability of a firm to repay various debts and is a result of continuous financial distress.

(b) Types of Packing Credit-

(i) **Clean packing credit:** This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighed according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(ii) **Packing credit against hypothecation of goods:** Export finance is made available on certain terms and conditions where the exporter has pledge able interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit, along with the firm export order or letter of credit relative stock statements and thereafter continue submitting them every fortnight and/or whenever there is any movement in stocks.

(iii) **Packing credit against pledge of goods:** Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved

clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.

(iv) **E.C.G.C. guarantee:** Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.

(v) **Forward exchange contract:** Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contact with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(c) (i) **Callable bonds:** A callable bond has a call option which gives the issuer the right to redeem the bond before maturity at a predetermined price known as the call price (Generally at a premium).

(ii) **Puttable bonds:** Puttable bonds give the investor a put option (i.e. the right to sell the bond) back to the company before maturity.

Or

Features of Samurai Bond:

- Samurai bonds are denominated in Japanese Yen JPY
- Issued in Tokyo
- Issuer Non- Japanese Company
- Regulations: Japanese
- Purpose: Access of capital available in Japanese market
- Issue proceeds can be used to fund Japanese operation
- Issue proceeds can be used to fund a company's local opportunities.
- It can also be used to hedge foreign exchange risk

Test Series: April, 2022

MOCK TEST PAPER – II

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT& ECONOMICS FOR FINANCE

PAPER 8A : FINANCIAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) Following data is available in respect of two companies having same business risk:

Capital employed = ₹ 4,00,000, EBIT = ₹ 60,000 and K_e = 12.5%

Sources	Levered Company (₹)	Unlevered Company (₹)
Debt (@10%)	2,00,000	Nil
Equity	2,00,000	4,00,000

An investor is holding 15% shares in levered company. CALCULATE the increase in annual earnings of investor if he switches his holding from Levered to Unlevered company.

(b) From the given details, PREPARE Income Statement for Alpha Ltd. and Beta Ltd.

Particulars	Alpha Ltd.	Beta Ltd.
Operating Leverage	1.875	1.800
Financial Leverage	1.600	1.250
PV Ratio	60%	50%
Profit after tax	₹ 3,00,000	₹ 2,40,000
Tax rate	40%	40%

(c) An enterprise is investing ₹ 100 lakhs in a project. The risk-free rate of return is 7%. Risk premium expected by the Management is 7%. The life of the project is 5 years. Following are the cash flows that are estimated over the life of the project.

Year	Cash flows (₹ in lakhs)
1	25
2	60
3	75
4	80
5	65

1

CALCULATE Net Present Value of the project based on Risk free rate and also on the basis of Risks adjusted discount rate.

(d) From the following information, you are required to PREPARE a summarised Balance Sheet for Rudra Ltd. for the year ended 31st March, 2022

Debt Equity Ratio	1:1
Current Ratio	3:1
Acid Test Ratio	8:3
Fixed Asset Turnover (on the basis of sales)	4
Stock Turnover (on the basis of sales)	6
Cash in hand	5,00,000
Stock to Debtor	1:1
Sales to Net Worth	4
Capital to Reserve	1:2
Gross Profit	20% of Cost
COGS to Creditor	10:1

Interest for entire year is yet to be paid on Long Term loan @ 10%. **(4 × 5 = 20 Marks)**

2. (a) The Modern Chemicals Ltd. requires ₹ 25,00,000 for a new plant. This plant is expected to yield earnings before interest and taxes of ₹ 5,00,000. While deciding about the financial plan, the company considers the objective of maximising earnings per share. It has three alternatives to finance the project- by raising debt of ₹ 2,50,000 or ₹ 10,00,000 or ₹ 15,00,000 and the balance, in each case, by issuing equity shares. The company's share is currently selling at ₹ 150, but is expected to decline to ₹ 125 in case the funds are borrowed in excess of ₹ 10,00,000. The funds can be borrowed at the rate of 10% upto ₹ 2,50,000, at 15% over ₹ 2,50,000 and upto ₹ 10,00,000 and at 20% over ₹ 10,00,000. The tax rate applicable to the company is 50%. ANALYSE, which form of financing should the company choose? **(7 Marks)**

(b) "Operating risk is associated with cost structure, whereas financial risk is associated with capital structure of a business concern." Critically EXAMINE this statement. **(3 Marks)**

3. The following annual figures relate to manufacturing entity:

A.	Sales at one month credit	84,00,000
B.	Material consumption	60% of sales value
C.	Wages (paid in a lag of 15 days)	12,00,000
D.	Cash Manufacturing Expenses	3,00,000
E.	Administrative Expenses	2,40,000

F. Creditors extend 3 months credit for payment.

G. Cash manufacturing and administrative expenses are paid 1 months in arrear.

The company maintains stock of raw material equal to economic order quantity. The company incurs ₹ 100 as per ordering cost per order and opportunity cost of capital is 15% p.a. The optimum cash balance is determined using Baumol's model. The bank charges ₹ 10 for each cash withdrawal. Finished goods are held in stock for 1 month. The company maintains a bank balance of ₹12,00,000 on an average. Creditors are paid through net banking and all other expenses are incurred in cash which is withdrawn from bank.

Assuming a 20% safety margin, you are required to ESTIMATE the amount of working capital that needs to be invested by the Company. **(10 Marks)**

4. Manoranjan Ltd is a News broadcasting channel having its broadcasting Centre in Mumbai. There are total 200 employees in the organisation including top management. As a part of employee benefit expenses, the company serves tea or coffee to its employees, which is outsourced from a third-party. The company offers tea or coffee three times a day to each of its employees. 120 employees prefer tea all three times, 40 employees prefer coffee all three times and remaining prefer tea only once in a day. The third-party charges ₹ 10 for each cup of tea and ₹ 15 for each cup of coffee. The company works for 200 days in a year.

   Looking at the substantial amount of expenditure on tea and coffee, the finance department has proposed to the management an installation of a master tea and coffee vending machine which will cost ₹ 10,00,000 with a useful life of five years. Upon purchasing the machine, the company will have to enter into an annual maintenance contract with the vendor, which will require a payment of ₹ 75,000 every year. The machine would require electricity consumption of 500 units p.m. and current incremental cost of electricity for the company is ₹ 12 per unit. Apart from these running costs, the company will have to incur the following consumables expenditure also:

   (1) Packets of Coffee beans at a cost of ₹ 90 per packet.

   (2) Packet of tea powder at a cost of ₹ 70 per packet.

   (3) Sugar at a cost of ₹ 50 per Kg.

   (4) Milk at a cost of ₹ 50 per litre.

   (5) Paper cup at a cost of 20 paise per cup.

   Each packet of coffee beans would produce 200 cups of coffee and same goes for tea powder packet. Each cup of tea or coffee would consist of 10g of sugar on an average and 100 ml of milk.

   The company anticipate that due to ready availability of tea and coffee through vending machines its employees would end up consuming more tea and coffee. It estimates that the consumption will increase by on an average 20% for all class of employees. Also, the paper cups consumption will be 10% more than the actual cups served due to leakages in them.

   The company is in the 25% tax bracket and has a current cost of capital at 12% per annum. Straight line method of depreciation is allowed for the purpose of taxation. You as a financial consultant is required to ADVISE on the feasibility of acquiring the vending machine.

   PV factors @ 12%:

Year	1	2	3	4	5
PVF	0.8929	0.7972	0.7118	0.6355	0.5674

(10 Marks)

3

5. The capital structure of RV Limited as on 31st March, 2022 as per its Balance Sheet is as follows:

Particulars	₹
Equity shares of ₹ 10 each	25,00,000
10% Preference shares of ₹ 100 each	5,00,000
Retained earnings	5,00,000
13% debentures of ₹ 100 each	20,00,000

The market price of equity shares is ₹ 50 per share. Expected dividend on equity shares is ₹ 3 per share. The dividend per share is expected to grow at the rate of 8%.

Preference shares are redeemable after eight years and the current market price is ₹ 80 per share.

Debentures are redeemable after five years and are currently selling at ₹ 90 per debenture.

The tax rate applicable to the company is 35%.

CALCULATE weighted average cost of capital using:

(i) Book value proportions

(ii) Market value proportions **(10 Marks)**

6. (a) DISCUSS in briefly any two long term sources of finance for a partnership firm.

(b) DISCUSS the limitations of financial ratios

(c) EXPLAIN the term 'Payback reciprocal'. **(4 + 4 + 2 =10 Marks)**

MOCK TEST PAPER – II

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT& ECONOMICS FOR FINANCE

PAPER 8A : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (a) Valuation of firms

Particulars	Levered Firm (₹)	Unlevered Firm (₹)
EBIT	60,000	60,000
Less: Interest on debt (10% × ₹ 2,00,000)	20,000	Nil
Earnings available to Equity shareholders	40,000	60,000
K_e	12.5%	12.5%
Value of Equity (S) (Earnings available to Equity shareholders/K_e)	3,20,000	4,80,000
Debt (D)	2,00,000	Nil
Value of Firm (V) = S + D	5,20,000	4,80,000

Value of Levered company is more than that of unlevered company. Therefore, investor will sell his shares in levered company and buy shares in unlevered company. To maintain the level of risk he will borrow proportionate amount and invest that amount also in shares of unlevered company.

Investment & Borrowings	**(₹)**
Sell shares in Levered company (₹ 3,20,000 x 15%)	48,000
Borrow money (₹ 2,00,000 x 15%)	30,000
Buy shares in Unlevered company	78,000
Change in Return	**(₹)**
Income from shares in Unlevered company (₹ 78,000 x 12.5%)	9,750
Less: Interest on loan (₹ 30,000 x 10%)	3,000
Net Income from unlevered firm	6,750
Less: Income from Levered firm (₹ 48,000 x 12.5%)	6,000
Incremental Income due to arbitrage	750

(b)

Particulars	Alpha Ltd. (₹)	Beta Ltd. (₹)	
Sales	25,00,000	18,00,000	
Less: Variable Cost	10,00,000	9,00,000	(Bal. fig.)
Contribution	15,00,000	9,00,000	

Less: Fixed Cost	7,00,000	4,00,000	(Bal. fig.)
EBIT	8,00,000	5,00,000	
Less: Interest	3,00,000	1,00,000	(Bal. fig.)
PBT	5,00,000	4,00,000	
Less: Tax (40%)	2,00,000	1,60,000	
PAT	3,00,000	2,40,000	

Working Note:

Particulars	Alpha Ltd.	Beta Ltd.
PAT	₹ 3,00,000	₹ 2,40,000
Tax Rate (t)	40%	40%
∴ PBT = PAT/(I-t)	$\frac{3,00,000}{1-0.4}$ = 5,00,000	$\frac{2,40,000}{1-0.4}$ = 4,00,000
Finance Leverage	1.60	1.25
∴ EBIT = PBT × FL	5,00,000 × 1.6 = 8,00,000	4,00,000 × 1.25 = 5,00,000
Operating Leverage	1.875	1.800
∴ Contribution = EBIT × OL	8,00,000 × 1.875 = 15,00,000	5,00,000 × 1.8 = 9,00,000
PV ratio	60%	50%
∴ Sales = $\frac{\text{Contribution}}{\text{PV ratio}}$	$\frac{15,00,000}{.60}$ = 25,00,000	$\frac{9,00,000}{.50}$ = 18,00,000

(c) The Present Value of the Cash Flows for all the years by discounting the cash flow at 7% is calculated as below:

Year	Cash flows (₹ in lakhs)	Discounting Factor @7%	Present value of Cash Flows (₹ in Lakhs)
1	25	0.935	23.38
2	60	0.873	52.38
3	75	0.816	61.20
4	80	0.763	61.04
5	65	0.713	46.35
Total of present value of Cash flow			244.34
Less: Initial investment			100
Net Present Value (NPV)			**144.34**

Now, when the risk-free rate is 7 % and the risk premium expected by the Management is 7 %. So, the risk adjusted discount rate is 7 % + 7 % =14%.

Discounting the above cash flows using the Risk Adjusted Discount Rate would be as below:

Year	Cash flows (₹ in Lakhs)	Discounting Factor @14%	Present Value of Cash Flows (₹ in lakhs)
1	25	0.877	21.93
2	60	0.769	46.14

3	75	0.675	50.63
4	80	0.592	47.36
5	65	0.519	33.74
Total of present value of Cash flow			199.80
Initial investment			100
Net present value (NPV)			**99.80**

(d) **Balance Sheet of Rudra Ltd.**

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	10,00,000	Fixed Assets	30,00,000
Reserves	20,00,000	Current Assets:	
Long Term Loan @ 10%	30,00,000	Stock in Trade	20,00,000
Current Liabilities:		Debtors	20,00,000
Creditors	10,00,000	Cash	5,00,000
Other Short-term Current Liability (Other STCL)	2,00,000		
Outstanding Interest	3,00,000		
	75,00,000		**75,00,000**

Working Notes:

Let sales be ₹ x

Balance Sheet of Rudra Ltd.

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital		Fixed Assets	x/4
Reserves		Current Assets:	
Net Worth	x/4	Stock in Trade	x/6
Long Term Loan @ 10%	x/4	Debtors	x/6
		Cash	5,00,000
Current liabilities:			
Creditors	x/12		
Other Short-term Current Liability			
Outstanding Interest			
Total Current Liabilities	x/9+5,00,000/3		
Total		**Total**	

1. Fixed Asset Turnover = 4 $= \frac{x}{\text{Fixed Assets}}$

Fixed Assets $= \frac{x}{4}$

2. Stock Turnover = 6 $= \frac{x}{\text{stock}}$

Stock $= \frac{x}{6}$

3. Sales to net worth = 4 $= \frac{x}{\text{net worth}}$

Net worth $= \frac{x}{4}$

4. Debt: Equity = 1 : 1

$\frac{\text{Long Term Loan}}{\text{Net worth}} = \frac{1}{1}$

Long term loan = Net worth $= \frac{x}{4}$

5. Gross Profit to Cost = 20%

$\frac{GP}{\text{Sales} - GP} = 20\%$

$\frac{GP}{x - GP} = 20\%$

$GP = 0.2x - 0.2GP$

$1.2\,GP = 0.2x$

$GP = \frac{0.2x}{1.2}$

$GP = x/6$

Cost of Goods Sold $= x - x/6 = 5/6\,x$

6. COGS to creditors = 10:1

$\frac{\text{COGS}}{\text{Creditors}} = \frac{10}{1}$

$\frac{\frac{5}{6}x}{\text{creditors}} = \frac{10}{1}$

Creditors $= \frac{5x}{60} = \frac{x}{12}$

7. $\frac{\text{Stock}}{\text{Debtor}} = 1$

Debtor = Stock $= \frac{x}{6}$

8. Current Ratio = 3 : 1

$$\frac{\text{Stock+Debtors+Cash}}{\text{Current Liabilities}} = \frac{3}{1}$$

$$\frac{\frac{x}{6}+\frac{x}{6}+5,00,000}{\text{Current Liabilities}} = 3$$

$$\frac{\frac{x}{3}+5,00,000}{3} = CL$$

$$CL = \frac{x}{9}+\frac{5,00,000}{3}$$

9. CA = 3CL

$$= 3\left(\frac{x}{9}+\frac{5,00,000}{3}\right)$$

$$CA = \frac{x}{3}+5,00,000$$

10. Net worth + Long Term Loan + Current Liability = Fixed Asset + Current Assets

$$\frac{x}{4}+\frac{x}{4}+\frac{x}{9}+\frac{5,00,000}{3} = \frac{x}{4}+\frac{x}{3}+5,00,000$$

$$\frac{x}{4}+\frac{x}{9}-\frac{x}{3} = 5,00,000-\frac{5,00,000}{3}$$

$$\frac{9x+4x-12x}{36} = \frac{15,00,000-5,00,000}{3}$$

$$\frac{x}{36} = \frac{10,00,000}{3}$$

$$x = 1,20,00,000$$

11. Now, from above calculations, we get,

-> Fixed Asset $= \frac{x}{4} = \frac{1,20,00,000}{4}$ = 30,00,000

-> Stock $= \frac{x}{6} = \frac{1,20,00,000}{6}$ = 20,00,000

-> Debtor $= \frac{x}{6} = \frac{1,20,00,000}{6}$ = 20,00,000

-> Net Worth = x / 4 = 30,00,000

Now, Capital to Reserve is 1 : 2

$\therefore$ Capital = ₹ 10,00,000

and, Reserve = ₹ 20,00,000

-> Long Term Loan = $\frac{x}{4}$ = 30,00,000

-> Outstanding Interest = 30,00,000×10% = 3,00,000

-> Creditors = $\frac{x}{12} = \frac{1,20,00,000}{12}$ = 10,00,000

-> Current Liabilities = Creditors + Other STCL + Outstanding Interest

$\frac{x}{9} + \frac{5,00,000}{3}$ = 10,00,000+ Other STCL + 3,00,000

$\frac{1,20,00,000}{9} + \frac{5,00,000}{3}$ = 13,00,000+ Other STCL

15,00,000 = Other STCL + 13,00,000

Other STCL = 2,00,000

2. (a) Calculation of Earnings per share for three alternatives to finance the project

Particulars	Alternatives		
	I To raise debt of ₹2,50,000 and equity of ₹ 22,50,000 (₹)	II To raise debt of ₹ 10,00,000 and equity of ₹ 15,00,000 (₹)	III To raise debt of ₹ 15,00,000 and equity of ₹ 10,00,000 (₹)
Earnings before interest and tax	5,00,000	5,00,000	5,00,000
Less: Interest on debt at the rate of	25,000 (10% on ₹ 2,50,000)	1,37,500 (10% on ₹ 2,50,000) (15% on ₹ 7,50,000)	2,37,500 (10% on ₹ 2,50,000) (15% on ₹ 7,50,000) (20% on ₹ 5,00,000)
Earnings before tax	4,75,000	3,62,500	2,62,500
Less: Tax (@ 50%)	2,37,500	1,81,250	1,31,250
Earnings after tax: (A)	2,37,500	1,81,250	1,31,250
Number of shares :(B) (Refer to working note)	15,000	10,000	8,000
Earnings per share: (A)/(B)	15.833	18.125	16.406

So, the earning per share (EPS) is higher in alternative II i.e. if the company finance the project by raising debt of ₹ 10,00,000 and issue equity shares of ₹ 15,00,000. Therefore, the company should choose this alternative to finance the project.

Working Note:

	Alternatives		
	I	II	III
Equity financing : (A)	₹ 22,50,000	₹ 15,00,000	₹ 10,00,000
Market price per share : (B)	₹ 150	₹ 150	₹ 125
Number of equity share: (A)/(B)	15,000	10,000	8,000

(b) "Operating risk is associated with cost structure whereas financial risk is associated with capital structure of a business concern".

Operating risk refers to the risk associated with the firm's operations. It is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses, which are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost. If there is no fixed cost, there would be no operating risk. Whereas financial risk refers to the additional risk placed on firm's shareholders as a result of debt and preference shares used in the capital structure of the concern. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity.

3. Statement of working capital Requirement

Particular	**(₹)**	**(₹)**
A. Current Assets		
Stock of Raw Material (W.N. 2)	81,975	
Stock of finished Goods $\left(65,40,000\times\frac{1}{12}\right)$	5,45,000	
Average Receivables (at Cost) $\left(67,80,000\times\frac{1}{12}\right)$	5,65,000	
Bank Balance	12,00,000	
Cash Balance (W.N. 3)	15,232	
Gross Working Capital		24,07,207
B. Current Liabilities		
Average Creditor for materials $\left(50,40,000\times\frac{3}{12}\right)$	12,60,000	
Outstanding Wages $\left(12,00,000\times\frac{0.5}{12}\right)$	50,000	
Outstanding Cash Manufacturing Expenses $\left(3,00,000\times\frac{1}{12}\right)$	25,000	
Outstanding administrative Expenses $\left(2,40,000\times\frac{1}{12}\right)$	20,000	
		13,55,000
Net Working Capital (A-B)		10,52,207

Add: Safety Margin @ 20%		2,10,441
Total Working Capital Requirement		**12,62,648**

Working Notes:

1. Computation of annual cash Cost of Production & Sales

Material Consumed (84,00,000 × 60%)	50,40,000
Wages	12,00,000
Manufacturing expenses	3,00,000
Cash Cost of production	**65,40,000**
(+) Administrative Expenses	2,40,000
Cash Cost of Sales	**67,80,000**

2. Computation of stock of Raw Material

A = 50,40,000

B = 100

C = 0.15

$$\therefore \text{EOQ} = \sqrt{\frac{2AB}{C}} = \sqrt{\frac{2\times 50,40,000\times 100}{0.15}} = ₹\ 81,975$$

3. Calculation of Cash Balance

A = 12,00,000+3,00,000+2,40,000

A = 17,40,000

B = 10

C = 0.15

$$\text{Optimal Cash Balance} = \sqrt{\frac{2AB}{C}} = \sqrt{\frac{2\times 17,40,000\times 10}{0.15}} = ₹\ 15,232$$

4. **A. Computation of CFAT (Year 1 to 5)**

Particulars		**Amount (₹)**
(a) Savings in existing Tea & Coffee charges	(120 × 10 ×3) + (40 ×15 × 3) + (40 ×10 × 1) x 200 days	11,60,000
(b) AMC of machine		(75,000)
(c) Electricity charges	500 ×12 ×12	(72,000)
(d) Coffee Beans	(W.N.) 144 × 90	(12,960)
(e) Tea Powder	(W.N.) 480 × 70	(33,600)
(f) Sugar	(W.N.) 1248 × 50	(62,400)
(g) Milk	(W.N.) 12480 × 50	(6,24,000)
(h) Paper Cup	(W.N.) 1,37,280 × 0.2	(27,456)
(i) Depreciation	10,00,000/5	(2,00,000)
Profit before Tax		**52,584**

(-) Tax @ 25%	(13,146)
Profit after Tax	**39,438**
Depreciation	2,00,000
CFAT	**2,39,438**

B. Computation of NPV

Year	Particulars	CF	PVF @ 12%	PV
0	Cost of machine	(10,00,00)	1	(10,00,000)
1-5	CFAT	2,39,438	3.6048	8,63,126
Net Present Value				**(1,36,874)**

Since NPV of the machine is negative, it should not be purchased.

Working Note:

Computation of Qty of consumable

No. of Tea Cups = [(120 × 3 × 200 days) + (40 × 1 × 200 days) × 1.2 = 96,000

No. of Coffee cups = 40 × 3 × 200 days × 1.2 = 28,800

No. of coffee beans packet $= \frac{28,800}{200}$ = 144

No. of Tea Powder Packets $= \frac{96,000}{200}$ = 480

Qty of Sugar $= \frac{(96,000 + 28,800) \times 10\ g}{1,000\ g}$ = 1248 kgs

Qty of Milk $= \frac{(96,000 + 28,800) \times 100\ ml}{1,000\ ml}$ = 12,480 litres

No. of paper cups = (96,000 + 28,800) × 1.1 = 1,37,280

5. Working Notes:

(i) Cost of Equity (K_e)

$$\frac{D_1}{P} + g = \frac{Rs.\ 3}{Rs.\ 50} + 0.08 = 0.14 \text{ i.e. } 14\%$$

(ii) Cost of preference shares (K_p)

$$\frac{D + \frac{RV - NP}{n}}{\frac{RV + NP}{2}} = \frac{10 + \frac{(100 - 80)}{8}}{\frac{100 + 80}{2}} = \frac{12.5}{90} = 0.1389 = 13.89\%$$

(iii) Cost of debenture (K_d)

$$\frac{I(1-t) + \frac{RV - NP}{n}}{\frac{RV + NP}{2}} = \frac{13(1 - 0.35) + \frac{(100 - 90)}{5}}{\frac{100 + 90}{2}} = \frac{8.45 + 2}{95} = 0.11 \text{ i.e. } 11\%$$

Or,

$$\left[\frac{I+\frac{RV-NP}{n}}{\frac{RV+NP}{2}}\right](1-t) = \left[\frac{13+\frac{(100-90)}{5}}{\frac{100+90}{2}}\right](1-0.35) = 0.1026 \text{ i.e. } 10.26\%$$

Weighted Average cost of capital (Book Value)

	Amount (₹)	Weight (W)	Cost (K)	W x K
Equity shares	25,00,000	0.4546	0.14	0.0636
Preference shares	5,00,000	0.0909	0.1389	0.0126
Retained Earnings	5,00,000	0.0909	0.14	0.0127
Debentures	20,00,000	0.3636	0.1026	0.0373
	55,00,000			0.1262

Or (if K_d is 11%) the WACC = 0.1289

Thus, WACC (Book value based) = 12.62% or 12.89%

Weighted Average cost of capital (Market Value)

	Amount (₹)	Weight (W)	Cost (K)	W x K
Equity shares	1,25,00,000	0.85	0.14	0.119
Preference shares	4,00,000	0.028	0.1389	0.0039
Debentures	18,00,000	0.122	0.1026	0.0125
	1,47,00,000			0.1354

Or (if K_d is 11%) the WACC = 0.1363

Thus, WACC (Market value based) = 13.54% or 13.63%

6. (a) The two sources of long-term finance for a partnership firm are as follows:

Loans from Commercial Banks: Commercial banks provide long term loans for the purpose of expansion or setting up of new units. Their repayment is usually scheduled over a long period of time. The liquidity of such loans is said to depend on the anticipated income of the borrowers.

As part of the long term funding for a partnership firm, the banks also fund the long term working capital requirement (it is also called WCTL i.e. working capital term loan).

Lease financing: Leasing is a general contract between the owner and user of the asset over a specified period of time. The asset is purchased initially by the lessor (leasing company) and thereafter leased to the user (lessee firm) which pays a specified rent at periodical intervals. Thus, leasing is an alternative to the purchase of an asset out of own or borrowed funds. Moreover, lease finance can be arranged much faster as compared to term loans from financial institutions.

(b) The limitations of financial ratios are listed below:

(i) Diversified product lines: Many businesses operate a large number of divisions in quite different industries. In such cases ratios calculated on the basis of aggregate data cannot be used for inter-firm comparisons.

(ii) Financial data are badly distorted by inflation: Historical cost values may be substantially different from true values. Such distortions of financial data are also carried in the financial ratios.

(iii) Seasonal factors may also influence financial data.

(iv) To give a good shape to the popularly used financial ratios (like current ratio, debt- equity ratios, etc.): The business may make some year-end adjustments. Such window dressing can change the character of financial ratios which would be different had there been no such change.

(v) Differences in accounting policies and accounting period: It can make the accounting data of two firms non-comparable as also the accounting ratios.

(vi) There is no standard set of ratios against which a firm's ratios can be compared: Sometimes a firm's ratios are compared with the industry average. But if a firm desires to be above the average, then industry average becomes a low standard. On the other hand, for a below average firm, industry averages become too high a standard to achieve.

(vii) Financial ratios are inter-related, not independent: Viewed in isolation one ratio may highlight efficiency. But when considered as a set of ratios they may speak differently. Such interdependence among the ratios can be taken care of through multivariate analysis.

(c) Financial ratios provide clues but not conclusions. These are tools only in the hands of experts because there is no standard ready-made interpretation of financial ratios

As the name indicates it is the **reciprocal of payback period**. A major drawback of the payback period method of capital budgeting is that it does not indicate any cut off period for the purpose of investment decision. It is, however, argued that the reciprocal of the payback would be a close approximation of the Internal Rate of Return (later discussed in detail) if the life of the project is at least twice the payback period and the project generates equal amount of the annual cash inflows. In practice, the payback reciprocal is a helpful tool for quickly estimating the rate of return of a project provided its life is at least twice the payback period.

The payback reciprocal can be calculated as follows:

$$\text{Payback Reciprocal} = \frac{\text{Average annual cash in flow}}{\text{Initial investment}}$$

Test Series: September, 2022

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Attempt any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) The capital structure of a Company is given below:

Source of capital	Book Value (₹)
Equity shares @ ₹ 100 each	24,00,000
9% Cumulative preference shares @ ₹ 100 each	4,00,000
11% Debentures	12,00,000
	40,00,000

The company had paid equity dividend @ 25% for the last year which is likely to grow @ 5% every year. The current market price of the company's equity share is ₹ 200.

Considering corporate tax @ 30%, you are required to CALCULATE:

(i) Cost of capital for each source of capital.

(ii) Weighted average cost of capital.

(b) Following information is provided relating to SVB Ltd.:

Sales price	₹ 21 per unit
Variable cost	₹ 13.50 per unit
Break-even point	30,000 units

You are required to CALCULATE operating leverage at sales volume 37,500 units and 45,000 units.

(c) PI Limited has the following Balance Sheet as on March 31, 2020 and March 31, 2021:

Balance Sheet

Particulars	March 31, 2020	March 31, 2021
Sources of Funds:		
Shareholders' Funds	87,500	87,500
Loan Funds	1,22,500	1,05,000
	2,10,000	1,92,500

Applications of Funds:		
Fixed Assets	87,500	1,05,000
Cash and bank	15,750	14,000
Receivables	49,000	38,500
Inventories	87,500	70,000
Other Current Assets	35,000	35,000
Less: Current Liabilities	(64,750)	(70,000)
	2,10,000	1,92,500

The Income Statement of the PI Ltd. for the year ended is as follows:

Particulars	March 31, 2020	March 31, 2021
Sales	7,87,500	8,33,000
Less: Cost of Goods sold	(7,30,100)	(7,38,500)
Gross Profit	57,400	94,500
Less: Selling, General and Administrative expenses	(38,500)	(61,250)
Earnings before Interest and Tax (EBIT)	18,900	33,250
Less: Interest Expense	(12,250)	(10,500)
Earnings before Tax (EBT)	6,650	22,750
Less: Tax	(1,995)	(6,825)
Profits after Tax (PAT)	4,655	15,925

You are required to CALCULATE for the year 2020-21:

(i) Inventory turnover ratio

(ii) Financial Leverage

(iii) Return on Capital Employed (after tax)

(d) Following information is given for WN Ltd.:

Earnings	₹ 30 per share
Dividend	₹ 9 per share
Cost of capital	15%
Internal Rate of Return on investment	20%

You are required to CALCULATE the market price per share using-

(i) Gordon's formula

(ii) Walter's formula **[4 × 5 Marks = 20 Marks]**

2. Embros Ltd. is planning to invest in a new product with a project life of 8 years. Initial equipment cost will be ₹ 35 crores. Additional equipment costing ₹ 2.50 crores will be purchased at the end of the third year from the cash inflow of this year. At the end of 8th year, the original equipment will have no resale value, but additional equipment can be sold at 10% of its original cost. A working capital of ₹ 4 crores will be needed, and it will be released at the end of 8th year. The project will be financed with sufficient amount of equity capital.

The sales volumes over eight years have been estimated as follows:

Year	1	2	3	4–5	6–8
Units	14,40,000	21,60,000	52,00,000	54,00,000	36,00,000

Sales price of ₹ 120 per unit is expected and variable expenses will amount to 60% of sales revenue. Fixed cash operating costs will amount ₹ 3.60 crores per year. The loss of any year will be set off from the profits of subsequent year. The company follows straight line method of depreciation and is subject to 30% tax rate. Considering 12% after-tax cost of capital for this project, you are required to CALCULATE the net present value (NPV) of the project and advise the management to take appropriate decision.

PV factors @ 12% are:

Year	1	2	3	4	5	6	7	8
	.893	.797	.712	.636	.567	.507	.452	.404

[10 Marks]

3. GT Ltd. is taking into account the revision of its credit policy with a view to increasing its sales and profit. Currently, all its sales are on one month credit. Other information is as follows:

Contribution 2/5th of Sales Revenue

Additional funds raising cost 20% per annum

The marketing manager of the company has given the following options along with estimates for considerations:

Particulars	Current Position	Option I	Option II	Option III
Sales Revenue (₹)	40,00,000	42,00,000	44,00,000	50,00,000
Credit period (in months)	1	1½	2	3
Bad debts (% of sales)	2	2½	3	5
Cost of Credit administration (₹)	24,000	26,000	30,000	60,000

You are required to ADVISE the company for the best option. **[10 Marks]**

4. A Ltd. is considering investing in new project with the following details:

Initial capital cost ₹ 100 Crores

Annual unit sales 1.25 Crores

Selling price ₹ 100 per unit

Variable cost ₹ 50 per unit

Fixed cost ₹ 12.50 Crores per year

Discounting Rate 6%

Considering life of the project as 3 years, you are required to:

(a) CALCULATE the NPV of the project.

(b) COMPUTE the impact on the project's NPV considering a 5% adverse variance in following variables:

(i) Selling Price per Unit

(ii) Variable Cost Per Unit

(iii) Fixed Cost Per Unit

WHICH variable is having maximum effect?

(c) MEASURE the maximum sensitivity of the project to change in the variable (as found in part (b) above) such that NPV becomes zero.

PV factors @ 6% are:

Year	1	2	3	4	5
PV Factor	0.943	0.890	0.840	0.792	0.747

[10 Marks]

5. (a) Leo Ltd. has a net operating income of ₹ 21,60,000 and the total capitalisation of ₹ 120 lakhs. The company is evaluating the options to introduce debt financing in the capital structure and the following information is available at various levels of debt value.

Debt value (₹)	Interest rate (%)	Equity Capitalisation rate (%)
0	N.A.	12.00
10,00,000	7.00	12.50
20,00,000	7.00	13.00
30,00,000	7.50	13.50
40,00,000	7.50	14.00
50,00,000	8.00	15.00
60,00,000	8.50	16.00
70,00,000	9.00	17.00
80,00,000	10.00	20.00

You are required to COMPUTE the equity capitalization rate if MM approach is followed. Assume that the firm operates in zero tax regime and calculations to be based on book values. **[8 Marks]**

(b) BRIEF OUT the remedies for Over-Capitalisation. **[2 Marks]**

6. (a) A finance executive of an organisation plays an important role in the company's goals, policies, and financial success. WHAT his responsibilities include? **[4 Marks]**

(b) WHAT is the meaning of Venture Capital Financing. STATE some characteristics of it. **[4 Marks]**

(c) BRIEF OUT certain sources of finance- Inter Corporate Deposits and Certificate of Deposit.

Or

STATE in brief four features of Plain Vanilla Bond. **[2 Marks]**

Test Series: September, 2022

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

1. (a) (i) Calculation of Cost of Capital for each source of capital:

(a) Cost of Equity share capital:

$$K_e = \frac{D_0(1+g)}{\text{Market Price per share } (P_0)} + g = \frac{25\% \times ₹100(1+0.05)}{₹200} + 0.05$$

$$= \frac{₹26.25}{₹200} + 0.05 = 0.18125 \text{ or } \mathbf{18.125\%}$$

(b) Cost of Preference share capital (K_p) = **9%**

(c) Cost of Debentures (K_d) = r (1 – t)

= 11% (1 – 0.3) = **7.7%**

(ii) Weighted Average Cost of Capital

Source	Amount (₹)	Weights (a)	After tax Cost of Capital (%) (b)	WACC (%) (c) = (a) × (b)
Equity share	24,00,000	0.60	18.125	10.875
9% Preference share	4,00,000	0.10	9.000	0.900
11% Debentures	12,00,000	0.30	7.700	2.310
	40,00,000	1.00		**14.085**

(b) Computation of Operating Leverage (OL)

Selling Price = ₹ 21 per unit

Variable Cost = ₹ 13.50 per unit

Fixed Cost = BEP × (Selling price – Variable cost) = 30,000 × (21 – 13.50) = 30,000 × 7.5 = 2,25,000

Particulars	For 37,500 units (₹)	For 45,000 units (₹)
Sales (@ ₹ 21 /unit)	7,87,500	9,45,000
Less: Variable Cost (@ 13.50 /unit)	5,06,250	6,07,500
Contribution	2,81,250	3,37,500
Less: Fixed Cost	2,25,000	2,25,000
Earnings before Interest and tax (EBIT)	56,250	1,12,500
Operating Leverage $\left(\frac{\text{Contribution}}{\text{EBIT}}\right)$	$\left(\frac{2,81,250}{56,250}\right)$	$\left(\frac{3,37,500}{1,12,500}\right)$

Operating Leverage	5 times	3 times

(c) Ratios for the year 2020-21

(i) Inventory turnover ratio

$$= \frac{\text{COGS}}{\text{Average Inventory}} = \frac{₹\ 7,38,500}{\frac{₹\ (87,500 + 70,000)}{2}} = 9.4$$

(ii) Financial leverage

$$= \frac{\text{EBIT}}{\text{EBT}} = \frac{₹\ 33,250}{₹\ 22,750} = 1.46$$

(iii) ROCE

$$= \frac{\text{EBIT}\,(1-t)}{\text{Average Capital Employed}} = \frac{₹\ 33,250\ (1-0.3)}{₹\left(\frac{2,10,000+1,92,500}{2}\right)} = \frac{₹\ 23,275}{₹\ 2,01,250} \times 100 = 11.56\ \%$$

(d) (i) As per **Gordon's Model**, Price per share is computed using the formula:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Where,

P_0 = Price per share

E_1 = Earnings per share

b = Retention ratio; (1 - b = Pay-out ratio)

K_e = Cost of capital

r = IRR

br = Growth rate (g)

Applying the above formula, price per share

$$P_0 = \frac{30 \times 0.3^*}{0.15 - 0.70 \times 0.2} = \frac{9}{0.01} = ₹\ 900$$

*Dividend pay-out ratio = $\frac{₹\ 9}{₹\ 30} = 0.3$ or 30%

(ii) As per Walter's Model, Price per share is computed using the formula:

$$\text{Price (P)} = \frac{D + \frac{r}{Ke}(E-D)}{K_e}$$

Where,

P = Market Price of the share

E = Earnings per share

D = Dividend per share

K_e = Cost of equity/ rate of capitalization/ discount rate

r = Internal rate of return/ return on investment

Applying the above formula, price per share

$$P = \frac{9 + \frac{0.20}{0.15}(30 - 9)}{0.15} = \frac{37}{0.15} = ₹\ 246.67$$

2. Calculation of year-wise Cash Inflow *(₹ in crores)*

Year	Sales	VC (60% of Sales Value)	FC	Dep.	Profit	Tax (@30%)	PAT	Dep.	Cash inflow
1	17.28	10.368	3.6	4.375	(1.063)	-	(1.0630)	4.375	3.312
2	25.92	15.552	3.6	4.375	2.393	0.3990*	1.9940	4.375	6.369
3	62.4	37.44	3.6	4.375	16.985	5.0955	11.8895	4.375	16.2645
4–5	64.8	38.88	3.6	4.825#	17.495	5.2485	12.2465	4.825	17.0715
6–8	43.2	25.92	3.6	4.825	8.855	2.6565	6.1985	4.825	11.0235

*(30% of 2.393 – 30% of 1.063) = 0.7179 – 0.3189 = 0.3990

#4.375 + (2.50 - .25)/5 = 4.825

Calculation of Cash Outflow at the beginning

Particulars	₹
Cost of New Equipment	35,00,00,000
Add: Working Capital	4,00,00,000
Outflow	39,00,00,000

Calculation of NPV

Year	Cash inflows	PV factor	NPV
	(₹)		(₹)
1	3,31,20,000	.893	2,95,76,160
2	6,36,90,000	.797	5,07,60,930
3	16,26,45,000 - 2,50,00,000 = 13,76,45,000	.712	9,80,03,240
4	17,07,15,000	.636	10,85,74,740
5	17,07,15,000	.567	9,67,95,405
6	11,02,35,000	.507	5,58,89,145
7	11,02,35,000	.452	4,98,26,220
8	11,02,35,000 + 4,00,00,000 + 25,00,000 = 15,27,35,000	.404	6,17,04,940
	Present Value of Inflow		55,11,30,780
	Less: Out flow		39,00,00,000
	Net Present Value		**16,11,30,780**

Advise: Since the project has a positive NPV, it may be accepted.

3. Statement Showing Evaluation of Credit Policies

(₹ in lakhs)

Particulars	**Current position (1 month)**	**Option I (1.5 months)**	**Option II (2 months)**	**Option III (3 months)**
Sales Revenue	40,00,000	42,00,000	44,00,000	50,00,000

Contribution @ 40%	16,00,000	16,80,000	17,60,000	20,00,000
Increase in contribution over current level (A)	–	80,000	1,60,000	4,00,000
Debtors = $(\frac{\text{Average Collection period x Credit Sale}}{12})$	$\frac{1 \times 40,00,000}{12}$ = 3,33,333.33	$\frac{1.5 \times 42,00,000}{12}$ = 5,25,000	$\frac{2 \times 44,00,000}{12}$ = 7,33,333.33	$\frac{3 \times 50,00,000}{12}$ = 12,50,000
Increase in debtors over current level	–	1,91,666.67	4,00,000.00	9,16,666.67
Cost of funds for additional amount of debtors @ 20% (B)	–	38,333.33	80,000.00	1,83,333.33
Credit administrative cost	24,000	26,000	30,000	60,000
Increase in credit administration cost over present level (C)	–	2,000	6,000	36,000
Bad debts	80,000	1,05,000	1,32,000	2,50,000
Increase in bad debts over current levels (D)	–	25,000	52,000	1,70,000
Net gain/loss A – (B + C + D)	–	14,666.67	22,000.00	10,666.67

Advise: It is suggested that the company GT Ltd. should implement Option II with a net gain of ₹ 22,000 which has a credit period of 2 months.

4. (a) Calculation of Net Cash Inflow per year

	Particulars	Amount (₹)
A	Selling price per unit	100
B	Variable cost per unit	50
C	Contribution per unit (A - B)	50
D	Number of units sold per year	1.25 Crores
E	Total Contribution (C × D)	₹ 62.50 Crores
F	Fixed cost per year	₹ 12.50 Crores
G	Net cash inflow per year (E - F)	₹ 50 Crores

Calculation of Net Present Value (NPV) of the Project

Year	Year Cash Flow (₹ in Cr.)	PV factor @ 6%	Present Value (PV) (₹ in Cr.)
0	(100.00)	1.000	(100.00)
1	50.00	0.943	47.15
2	50.00	0.890	44.50
3	50.00	0.840	42.00
Net Present Value			**33.65**

Here, NPV represent the most likely outcomes and not the actual outcomes. The actual outcome can be lower or higher than the expected outcome.

(b) Sensitivity Analysis considering 5 % Adverse Variance in following variable

	Particulars	Base	Selling Price per Unit Reduced to ₹ 95	Variable Cost Per Unit increased to ₹ 52.50	Fixed Cost increased to ₹ 13.125 crores per year
		(₹)	(₹)	(₹)	(₹)
A	Selling price per unit	100	95	100	100
B	Variable cost per unit	50	50	52.50	50
C	Contribution per unit (A - B)	50	45	47.50	50
		(₹ in Cr.)	(₹ in Cr.)	(₹ in Cr.)	(₹ in Cr.)
D	Number of units sold per year (units in Crores)	1.25	1.25	1.25	1.25
E	Total Contribution (C × D)	62.50	56.25	59.375	62.50
F	Fixed cost per year	12.50	12.50	12.50	13.125
G	Net Cash Inflow per year (E - F)	50.00	43.75	46.875	49.375
H	PV of Net cash Inflow per year (G × 2.673)	133.65	116.94	125.30	131.98
I	Initial capital cost	100.00	100	100	100
J	NPV (H - I)	33.65	16.94	25.30	31.98
	Difference in NPV	-	(16.71)	(8.35)	(1.67)
	Percentage Change in NPV	**-**	**(49.66%)**	**(24.81%)**	**(4.96%)**

The above table shows that by changing one variable at a time by 5% (adverse) while keeping the others constant, the impact in percentage terms on the NPV of the project is maximum in selling price by 49.66%.

(c) For 49.66% change in NPV, Selling Price per Unit needs to be reduced by 5%

Thus, for 100% change in NPV (such that NPV becomes zero), **sensitivity to change in Selling price would be** = $\frac{5}{49.66} \times 100$ **= 10.07%**

5. (a) As per MM approach, cost of the capital (K_o) remains constant, and cost of equity increases linearly with debt.

Value of a Firm = $\frac{NOI}{K_0}$

$\therefore$ 1,20,00,000 = $\frac{21,60,000}{k_0}$

$\therefore$ $K_0 = \frac{21,60,000}{1,20,00,000} = 18\%$

Under MM approach, $k_e = k_0 + \frac{D}{E}(k_0 - k_d)$

Statement of equity capitalization under MM approach

Debt Value (₹)	Equity Value (₹)	Debt/ Equity	K_d (%)	K_o (%)	K_o-k_d (%)	$K_e = K_o+(K_o-K_d)$ (D/E) (%)
-	1,20,00,000	0.0000	NA	18.00	18.00	18.00
10,00,000	1,10,00,000	0.0909	7.00	18.00	11.00	19.00
20,00,000	1,00,00,000	0.2000	7.00	18.00	11.00	20.20
30,00,000	90,00,000	0.3333	7.50	18.00	10.50	21.50
40,00,000	80,00,000	0.5000	7.50	18.00	10.50	23.25
50,00,000	70,00,000	0.7143	8.00	18.00	10.00	25.14
60,00,000	60,00,000	1.0000	8.50	18.00	9.50	27.50
70,00,000	50,00,000	1.4000	9.00	18.00	9.00	30.60
80,00,000	40,00,000	2.0000	10.00	18.00	8.00	34.00

(b) Remedies for Over-Capitalisation: Following steps may be adopted to avoid the negative consequences of over-capitalisation-

(i) Company should go for thorough reorganization.

(ii) Buyback of shares.

(iii) Reduction in claims of debenture-holders and creditors.

(iv) Value of shares may also be reduced. This will result in sufficient funds for the company to carry out replacement of assets.

6. (a) A finance executive of an organisation plays an important role in the company's goals, policies, and financial success. His responsibilities include:

(i) Financial analysis and planning: Determining the proper amount of funds to employ in the firm, i.e. designating the size of the firm and its rate of growth.

(ii) Investment decisions: The efficient allocation of funds to specific assets.

(iii) **Financing and capital structure decisions:** Raising funds on favourable terms as possible i.e. determining the composition of liabilities.

(iv) **Management of financial resources** (such as working capital).

(v) **Risk management:** Protecting assets.

(b) **Venture Capital Financing:** The venture capital financing refers to financing of new high risky venture promoted by qualified entrepreneurs who lack experience and funds to give shape to their ideas. In broad sense, under venture capital financing, venture capitalist make investment to purchase equity or debt securities from inexperienced entrepreneurs who undertake highly risky ventures with potential to succeed in future.

Some of the characteristics of Venture Capital financing are:

- It is basically an equity finance in new companies.
- It can be viewed as a long-term investment in growth-oriented small/medium firms.
- Apart from providing funds, the investor also provides support in form of sales strategy, business networking and management expertise, enabling the growth of the entrepreneur.

(c) **Inter Corporate Deposits:** The companies can borrow funds for a short period, say 6 months, from other companies which have surplus liquidity. The rate of interest on inter corporate deposits varies depending upon the amount involved and the time period.

Certificate of Deposit (CD): The certificate of deposit is a document of title similar to a time deposit receipt issued by a bank except that there is no prescribed interest rate on such funds.

The main advantage of CD is that banker is not required to encash the deposit before maturity period and the investor is assured of liquidity because he can sell the CD in secondary market.

Or

Features of Plain Vanilla Bond:

- The issuer would pay the principal amount along with the interest rate.
- This type of bond would not have any options.
- This bond can be issued in the form of discounted bond or can be issued in the form of coupon bearing bond.

Test Series: October 2022

MOCK TEST PAPER - 2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANCIAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) PREPARE a working capital estimate to finance an activity level of 52,000 units a year (52 weeks) based on the following data:

Raw Materials - ₹ 400 per unit

Direct Wages - ₹ 150 per unit

Overheads (Manufacturing) - ₹200 per unit

Overheads (Selling & Distribution) - ₹100perunit

Selling Price - ₹ 1,000 per unit, Raw materials & Finished Goods remain in stock for 4 weeks, Work in process takes 4 weeks. Debtors are allowed 8 weeks for payment whereas creditors allow us 4 weeks.

Minimum cash balance expected is ₹50,000. Receivables are valued at Selling Price.

(b) Axar Ltd. has a Sales of ₹ 68,00,000 with a Variable cost Ratio of 60%.

The company has fixed cost of ₹16,32,000. The capital of the company comprises of 12% long term debt, ₹1,00,000 Preference Shares of ₹ 10 each carrying dividend rate of 10% and 1,50,000 equity shares.

The tax rate applicable for the company is 30%.

At current sales level, DETERMINE the Interest, EPS and amount of debt for the firm if a 25% decline in Sales will wipe out all the EPS.

(c) Avesh Pvt. Ltd. is considering relaxing its present credit policy for accounts receivable and is in the process of evaluating two proposed policies. Currently, the company has annual credit sales of ₹ 55 lakhs and accounts receivable turnover ratio of 5 times a year. The current level of loss due to bad debts is ₹ 2,00,000. The company is required to give a return of 15% on the investment in new accounts receivable. The company's variable costs are 75% of the selling price. Given the following information, IDENTIFY which is the better policy?

(Amount in ₹)

Particulars	Present Policy	Proposed Policy 1	Proposed Policy 2
Annual credit sales	55,00,000	65,00,000	70,00,000

Accounts receivable turnover ratio	5 times	4 times	3 times
Bad debt losses	2,00,000	3,50,000	5,00,000

(d) The annual report of XYZ Ltd. provides the following information for the Financial Year 2019-20:

Particulars	Amount (₹)
Net Profit	78 lakhs
Outstanding 15% preference shares	120 lakhs
No. of equity shares	6 lakhs
Return on Investment	20%
Cost of capital i.e. (K_e)	16%

CALCULATE price per share using Gordon's Model when dividend pay-out is-

(i) 30%;

(ii) 50%;

(iii) 100%. **[4 × 5 Marks = 20 Marks]**

2. The financial advisor of Sun Ltd is confronted with following two alternative financing plans for raising ₹ 10 lakhs that is needed for plant expansion and modernization

Alternative I: Issue 80% of funds with 14% Debenture [Face value (FV) ₹ 100] at par and redeem at a premium of 10% after 10 years and balance by issuing equity shares at $33\frac{1}{3}$% premium.

Alternative II: Raise 10% of funds required by issuing 8% Irredeemable Debentures [Face value (FV) ₹ 100] at par and the remaining by issuing equity shares at current market price of ₹125.

Currently, the firm has an Earnings per share (EPS) of ₹ 21

The modernization and expansion programme is expected to increase the firm's Earnings before Interest and Taxation (EBIT) by ₹ 200,000 annually.

The firm's condensed Balance Sheet for the current year is given below:

Balance Sheet as on 31.3.2022

Liabilities	Amount (₹)	Assets	Amount (₹)
Current Liabilities	5,00,000	Current Assets	16,00,000
10% Long Term Loan	15,00,000	Plant & Equipment (Net)	34,00,000
Reserves & Surplus	10,00,000		
Equity Share Capital (FV: ₹ 100 each)	20,00,000		
TOTAL	50,00,000	TOTAL	50,00,000

However, the finance advisor is concerned about the effect that issuing of debt might have on the firm. The average debt ratio for firms in industry is 35%.He believes if this ratio is exceeded, the P/E ratio of the company will be 7 because of the potentially greater risk.

If the firm increases its equity capital by more than 10 %, he expects the P/E ratio of the company will increase to 8.5 irrespective of the debt ratio.

Assume Tax Rate of 25%. Assume target dividend pay-out under each alternative to be 60% for the next year and growth rate to be 10% for the purpose of calculating Cost of Equity

SUGGEST with reason which alternative is better on the basis of each of the below given criteria:

I. Earnings per share (EPS) & Market Price per share (MPS)

II. Financial Leverage

III. Weighted Average Cost of Capital & Marginal Cost of Capital (using Book Value weights)

[10 Marks]

3. From the following information and ratios, PREPARE the Balance sheet as at 31st March 2022 and Income statement for the year ended on that date for M/s Ganguly & Co -

Average Stock	₹10 lakh
Current Ratio	3:1
Acid Test Ratio	1:1
PBIT to PBT	2.2:1
Average Collection period (Assume 360 days in a year)	30 days
Stock Turnover Ratio (Use sales as turnover)	5 times
Fixed assets turnover ratio	0.8 times
Working Capital	₹10 lakh
Net profit Ratio	10%
Gross profit Ratio	40%
Operating expenses (excluding interest)	₹ 9 lakh
Long term loan interest	12%
Tax	Nil

[10 Marks]

4. The initial investment outlay for a capital investment project consists of ₹ 150 lacs for Plant & machinery and ₹ 60 lacs for Working Capital. Other details are summarized below:

Sales – 1.5 lakh units of output per year for years 1 to 5

Selling Price - 120 per unit of output

Variable cost - 60 per unit of output

Fixed overheads (excluding depreciation) - 22.5 lakhs per year for years 1 to 5

Salvage value of Plant & machinery Equal to the Written Down Value (WDV) at the end of year 5

Tax rate 40%

Time horizon 5 years

Post tax cut off rate 12%. PVAF (12%,5 Years) is 3.6048.PV @12% 5th year is 0.5674.

Rate of depreciation 20% on the Straight-Line Method (SLM)

Required:

(a) INDICATE the financial viability of the project by calculating the NPV

(b) DETERMINE the sensitivity of the project's NPV under each of the following conditions:

(i) Decrease in selling price by 10%

(ii) Increase in variable cost by 10%

(iii) Increase in cost of Plant & machinery by 10% **[10 Marks]**

5. (a) The following information is related to Navya Company Ltd. for the year ended 31st March 2022:

Equity share capital (₹ 10 each)	₹ 65,50,000
12% Bonds of ₹ 1,00 each	₹ 60,91,400
Sales	₹ 111 lakhs
Fixed cost (excluding interest)	₹ 7,15,000
Financial leverage	1.55
Profit-volume Ratio	25%
Income Tax Applicable	30%

You are required to CALCULATE:

(i) Operating Leverage.

(ii) Combined leverage; and

(iii) Earnings per share.

Show calculations upto two decimal points. **[8 Marks]**

(b) Write a short note on seed capital assistance. **[2 Marks]**

6. (a) DISTINGUISH between Net Present Value and Internal Rate of Return. **[4 Marks]**

(b) EXPLAIN in brief the features of Commercial Papers. **[4 Marks]**

(c) What do you UNDERSTAND by desirability factor/profitability index? **[2 Marks]**

Or

WRITE a short note on "Cut-off Rate".

Test Series: October 2022

MOCK TEST PAPER - 2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/ HINTS

1. (a)

Cost Structure for 52000 units	
Particulars	Amount (₹)
Raw Material @ ₹ 400	2,08,00,000
Direct Wages @ ₹ 150	78,00,000
Manufacturing Overheads@ ₹ 200	1,04,00,000
Selling and Distribution OH@ ₹ 100	52,00,000
Total Cost	4,42,00,000
Sales@₹1000	5,20,00,000

Particulars	Calculation	Amount (₹)
A. Current Assets:		
Raw Material Stock	$2,08,00,000 \times \frac{4}{52}$	16,00,000
Work in Progress (WIP) Stock	$2,08,00,000 + \frac{(78,00,000 + 1,04,00,000)}{2} \times \frac{4}{52}$	23,00,000
Finished Goods Stock	$4,42,00,000 \times \frac{4}{52}$	34,00,000
Receivables	$5,20,00,000 \times \frac{8}{52}$	80,00,000
Cash		50,000
	Total Current Assets	1,53,50,000
B. Current Liabilities:		
Creditors	$20800000 \times \frac{4}{52}$	16,00,000
C. **Working Capital Estimates(A-B)**		1,37,50,000

(b) Break Even Sales = ₹ 6800000×0.75 = ₹ 51,00,000

Income Statement (Amount in ₹)

	Original	Calculation of Interest at BEP (backward calculation)	Now at present level
Sales	68,00,000	51,00,000	68,00,000
Less: Variable Cost	40,80,000	30,60,000	40,80,000

Contribution	27,20,000	20,40,000	27,20,000
Less: Fixed Cost	16,32,000	16,32,000	16,32,000
EBIT	10,88,000	4,08,000	10,88,000
Less: Interest (EBIT-PBT)	?	**3,93,714**	**3,93,714**
PBT	?	14,286(10,000/70%)	6,94,286
Less: Tax @ 30%(or PBT-PAT)	?	4,286	2,08,286
PAT	?	10,000(Nil+10,000)	4,86,000
Less: Preference Dividend	10,000	10,000	10,000
Earnings for Equity share holders	?	**Nil (at BEP)**	4,76,000
Number of Equity Shares	1,50,000	1,50,000	1,50,000
EPS	?	-	3.1733

So Interest=₹3,93,714, EPS=₹3.1733, Amount of debt=3,93,714/12%=₹ 32,80,950

(c) Statement showing the Evaluation of Accounts Receivable Policies

(Amount in ₹)

	Particulars	Present Policy	Proposed Policy 1	Proposed Policy 2
A	Expected Profit:			
	(a) Credit Sales	55,00,000	65,00,000	70,00,000
	(b) Total Cost other than Bad Debts:			
	(i) Variable Costs (75%)	41,25,000	48,75,000	52,50,000
	(c) Bad Debts	2,00,000	3,50,000	5,00,000
	(d) Expected Profit [(a) – (b) – (c)]	11,75,000	12,75,000	12,50,000
B	Opportunity Cost of Investments in Accounts Receivable (Working Note)	1,23,750	1,82,813	2,62,500
C	Net Benefits (A – B)	10,51,250	10,92,187	9,87,500

Recommendation: The Proposed Policy 1 should be adopted since the net benefits under this policy are higher as compared to other policies.

Working Note:

Calculation of Opportunity Cost of Average Investments

Opportunity Cost = Total Cost × Collection period/12 × Rate of Return/100

Present Policy = ₹ 41,25,000 × 2.4/12 × 15% = ₹1,23,750

Proposed Policy 1 = ₹ 48,75,000× 3/12 × 15% = ₹ 1,82,813

Proposed Policy 2 = ₹ 52,50,000× 4/12 × 15% = ₹ 2,62,500

(d) Price per share according to Gordon's Model is calculated as follows:

Particulars	Amount in ₹
Net Profit	78 lakhs
Less:Preference dividend(120 lakhs@15%)	18 lakhs
Earnings for equity shareholders	60 lakhs

Earnings Per Share	60 lakhs/6 lakhs = ₹ 10.00

Price per share according to Gordon's Model is calculated as follows:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Here, E_1 = 10, K_e = 16%

(i) When dividend pay-out is 30%

$$P_0 = \frac{10 \times 0.30}{0.16 - (0.70 \times 0.2)} = \frac{3}{0.16 - 0.14} = ₹150$$

(ii) When dividend pay-out is 50%

$$P_0 = \frac{10 \times 0.5}{0.16 - (0.5 \times 0.2)} = \frac{5}{0.16 - 0.10} = ₹83.33$$

(iii) When dividend pay-out is 100%

$$P_0 = \frac{10 \times 1}{0.16 - (0 \times 0.2)} = \frac{10}{0.16} = ₹\ 62.5$$

2. Calculation of Equity Share capital and Reserves and surplus:

Alternative 1:

$$\text{Equity Share capital} = ₹20,00,000 + \frac{₹2,00,000 \text{ x } 100}{133.3333} = ₹21,50,000$$

$$\text{Reserves} = ₹10,00,000 + \frac{₹2,00,000 \text{ x } 33.3333}{133.3333} = ₹10,50,000$$

Alternative 2:

$$\text{Equity Share capital} = ₹\ 20,00,000 + \frac{₹\ 9,00,000 \text{x} 100}{125} = ₹27,20,000$$

$$\text{Reserves} = ₹10,00,000 + \frac{₹\ 9,00,000 \text{ x} 25}{125} = ₹11,80,000$$

Capital Structure Plans

Amount in ₹

Capital	Alternative 1	Alternative 2
Equity Share capital	21,50,000	27,20,000
Reserves and surplus	10,50,000	11,80,000
10% long term debt	15,00,000	15,00,000
14% Debentures	8,00,000	-
8% Irredeemable Debentures	-	1,00,000
Total Capital Employed	55,00,000	55,00,000

Computation of Present Earnings before interest and tax (EBIT)

EPS (₹)	21
No. of equity shares	20,000

Earnings for equity shareholders (I x II) (₹)	4,20,000
Profit Before Tax (III/75%) (₹)	5,60,000
Interest on long term loan (1500000 x 10%) (₹)	1,50,000
EBIT (IV + V) (₹)	7,10,000

EBIT after expansion = ₹7,10,000 +₹ 2,00,000 = ₹9,10,000

Evaluation of Financial Plans on the basis of EPS, MPS and Financial Leverage

Amount in ₹

Particulars	Alternative I	Alternate II
EBIT	9,10,000	9,10,000
Less: Interest: 10% on long term loan	(1,50,000)	(1,50,000)
14% on Debentures	(1,12,000)	Nil
8% on Irredeemable Debentures	Nil.	(8000)
PBT	6,48,000	7,52,000
Less: Tax @25%	(1,62,000)	(1,88,000)
PAT	4,86,000	5,64,000
No. of equity shares	21,500	27,200
EPS	**22.60**	**20.74**
Applicable P/E ratio (Working Note 1)	7	8.5
MPS (EPS X P/E ratio)	**158.2**	**176.29**
Financial Leverage EBIT/PBT	**1.40**	**1.21**

Working Note 1

	Alternative I	Alternative II
Debt:		
₹15,00,000 +₹8,00,000	23,00,000	-
₹15,00,000 +₹1,00,000	-	16,00,000
Total capital Employed (₹)	55,00,000	55,00,000
Debt Ratio (Debt/Capital employed)	=0.4182	=0.2909
	=41.82%	=29.09%
Change in Equity: ₹21,50,000-₹20,00,000	1,50,000	
₹27,20,000-₹20,00,000		7,20,000
Percentage change in equity	7.5%	**36%**
Applicable P/E ratio	**7**	**8.5**

Calculation of Cost of equity and various type of debt

	Alternative I	Alternative II
A) Cost of equity		
EPS	22.60	20.74
DPS (EPS X 60%)	13.56	12.44
Growth (g)	10%	10%
Po (MPS)	158.2	176.29

Ke= Do (1 + g)/ Po	$\frac{13.56\,(1.1)}{158.2}$ =9.43%	$\frac{12.44\,(1.1)}{176.29}$ =7.76%
B) Cost of Debt:		
10% long term debt	10% + (1-0.25) = 7.5%	10% +(1-0.25) = 7.5%
14% redeemable debentures	$\frac{14(1-0.25) + (110-100/10)}{110+100/2}$ = 10.5 + 1 / 10.5 = 10.95%	nil
8% irredeemable debenture	NA	8000(1-0.25)/1,00,00 = 6%

Calculation of Weighted Average cost of capital (WACC)

	Alternative 1			Alternative 2		
Capital	Weights	Cost (%)	WACC	Weights	Cost (%)	WACC
Equity Share Capital	0.3909	9.43	3.69%	0.4945	7.76	3.84%
Reserves and Surplus	0.1909	9.43	1.80%	0.2145	7.76	1.66%
10% Long term Debt	0.2727	7.50	2.05%	0.2727	7.50	2.05%
14% Debenture	0.1455	10.95	1.59%			
8% Irredeemable Debentures	-			0.0182	6	0.11%
			9.12%			**7.66%**

Calculation Marginal Cost of Capital (MACC)

	Alternative 1			Alternative 2		
Capital	Amount(weight)	Cost (%)	MACC	Amount (weight)	Cost (%)	MACC
Equity Share Capital	₹ 1,50,000(0.15)	9.43	1.41%	₹7,20,000(0.72)	7.76	5.59%
Reserves and Surplus	₹ 50,000(0.05)	9.43	0.47%	₹1,80,000(0.18)	7.76	1.40%
14% Debenture	₹ 8,00,000(0.80)	10.95	8.76%	-		0.00%
8% Irredeemable Debentures	-			₹1,00,000(0.10)	6	0.60%
Total Capital Employed	₹10,00,000		**10.65%**	₹10,00,000		**7.58%**

Summary of solution:

	Alternate I	Alternate II
Earning per share (EPS)	22.60	20.74
Market price per share (MPS)	158.20	176.29
Financial leverage	1.4043	1.2101
Weighted Average cost of capital (WACC)	9.12%	7.66%
Marginal cost of capital (MACC)	10.65%	7.58%

Alternative 1 of financing will be preferred under the criteria of EPS, whereas Alternative II of financing will be preferred under the criteria of MPS, Financial leverage, WACC and marginal cost of capital.

3. 1. Current Ratio = 3:1

Current Assets (CA)/Current Liability (CL) = 3:1

CA = 3CL

WC = 10,00,000

CA – CL = 10,00,000

3CL – CL = 10,00,000

2CL = 10,00,000

$$CL = \frac{10,00,000}{2}$$

CL = ₹5,00,000

CA = 3 x 5,00,000

CA = ₹15,00,000

2. Acid Test Ratio = CA – Stock / CL = 1:1

$$= \frac{15,00,000 - Stock}{5,00,000} = 1$$

15,00,000 – stock = 5,00,000

Stock = ₹10,00,000

3. Stock Turnover ratio (on sales) = 5

$$\frac{Sales}{Avg\ stock} = 5$$

$$\frac{Sales}{10,00,000} = 5$$

Sales = ₹50,00,000

4. **Gross Profit** = 50,00,000 x 40% = **₹20,00,000**

Net profit (PBT) = 50,00,000 x 10% = **₹5,00,000**

5. PBIT/PBT = 2.2

PBIT = 2.2 x 5,00,000

PBIT= 11,00,000

Interest = 11,00,000 – 5,00,000 = **₹6,00,000**

Long term loan = $\frac{6,00,000}{0.12}$ = **₹50,00,000**

6. Average collection period = 30 days

Receivables = $\frac{30}{360} \times 50.00.000 = 4,16,667$

7. Fixed Assets Turnover Ratio = 0.8

50,00,000/ Fixed Assets = 0.8

Fixed Assets = ₹**62,50,000**

Income Statement

	Amount (₹)
Sales	50,00,000
Less: Cost of Goods Sold	30,00,000
Gross Profit	20,00,000
Less: Operating Expenses	9,00,000
Less: Interest.	6,00,000
Net Profit	5,00,000

Balance sheet

Liabilities	Amount (₹)	Assets		Amount (₹)
Equity share capital	22,50,000	Fixed asset		62,50,000
Long term debt	50,00,000	Current assets:		
Current liability	5,00,000	Stock	10,00,000	
		Receivables	4,16,667	
		Other	83,333	15,00,000
	77,50,000			77,50,000

4. (a) Calculation of Cash Flow After Tax (CFAT) in original scenario

Sr. No.	Particulars	
1	Sales units	1,50,000
		(₹)
2	Sale Price p.u.	120
3	Sales	1,80,00,000
4	Variable Cost p.u.	60
5	Variable Cost	90,00,000
6	Contribution (3-4)	90,00,000
7	Fixed OH (Excluding Depreciation)	22,50,000
8	Depreciation	30,00,000
9	EBIT or PBT (6-7-8)	37,50,000
10	Tax@40%	15,00,000
11	Profit After Tax (PAT)	22,50,000
12	Add: Depreciation	30,00,000
13	CFAT	52,50,000

Calculation of NPV in original Scenario

Years	Particulars	Cash Flows	PVF	PV
0	Initial Investment	(1,50,00,000)	1	(1,50,00,000)
0	Initial WC introduced	(60,00,000)	1	(60,00,000)
1 to 5	CFAT	52,50,000	3.6048	189,25,075
5	WC released	60,00,000	0.5674	34,04,561
	NPV			13,29,636

Since the NPV of the project is Positive the project is viable.

(b) Sensitivity Analysis of the project under various conditions

Sr. No.	Particulars	(i)Selling Price reduced by 10%	(ii)Variable Cost increased by 10%	(iii)Plant &Machinery cost increased by 10%
1	Sales units	1,50,000	1,50,000	1,50,000
		₹	₹	₹
2	Sale Price p.u.	108	120	120
3	Sales	162,00,000	180,00,000	180,00,000
4	Variable Cost p.u.	60	66	60
5	Variable Cost	90,00,000	99,00,000	90,00,000
6	Contribution (3-4) [or Contribution per unit x1,50,000 units)	72,00,000	81,00,000	90,00,000
7	Fixed OH (Excluding Depreciation)	22,50,000	22,50,000	22,50,000
8	Depreciation	30,00,000	30,00,000	33,00,000
9	EBIT or PBT (6-7-8)	19,50,000	28,50,000	34,50,000
10	Tax	7,80,000	11,40,000	13,80,000
11	PAT	11,70,000	17,10,000	20,70,000
12	Add: Depreciation	30,00,000	30,00,000	33,00,000
13	CFAT	41,70,000	47,10,000	53,70,000
14	PV of CFAT (CFAT x3.6048)	150,31,917	169,78,496	193,57,648
15	WC released (60,00,000 x0.5674)	34,04,561	34,04,561	34,04,561
16	Initial Investment	(1,50,00,000)	(1,50,00,000)	(1,50,00,000)
17	Initial WC introduced	(60,00,000)	(60,00,000)	(60,00,000)
18	NPV (14+15-16-17)	(25,63,522)	(6,16,943)	2,62,209
19	% Change in NPV [Based on original NPV (13,29,636)]	-292.80%	-146.40%	-80.28%

From the above calculations it can be seen that change in selling price is most sensitive and has the maximum effect on the NPV.

5. (a) **Income Statement**

Particulars	Amount (₹)
Sales	1,11,00,000
Contribution (Sales × P/V ratio)	27,75,000
Less: Fixed cost (excluding Interest)	(7,15,000)
EBIT (Earnings before interest and tax)	20,60,000
Less: Interest on debentures (12% × ₹ 60,91,400)	(7,30,968)
EBT (Earnings before tax)	13,29,032
Less: Tax @ 30%	3,98,710
PAT (Profit after tax)	9,30,322

(i) Operating Leverage:

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{₹27,75,000}{₹20,60,000} = 1.35$$

(ii) Combined Leverage:

= Operating Leverage × Financial Leverage

= 1.35 × 1.55 = 2.09 (Approx)

Or,

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}}$$

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBT}} = \frac{₹20,60,000}{₹13,29,032} = 2.09 \text{ (Approx)}$$

(iii) Earnings per share (EPS):

$$= \frac{\text{PAT}}{\text{No. of shares outstanding}} = \frac{₹\ 9,30,322}{6,55,000 \text{ equity shares}} = ₹\ 1.42$$

(b) **Seed Capital Assistance**: The seed capital assistance has been designed by IDBI for professionally or technically qualified entrepreneurs. All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme. The project cost should not exceed ₹ 2 crores and the maximum assistance under the project will be restricted to 50% of the required promoter's contribution or ₹ 15 lacs whichever is lower.

The seed capital assistance is interest free but carries a security charge of one percent per annum for the first five years and an increasing rate thereafter

6. (a) **NPV versus IRR**: NPV and IRR methods differ in the sense that the results regarding the choice of an asset under certain circumstances are mutually contradictory under two methods. In case of mutually exclusive investment projects, in certain situations, they may give contradictory results such that if the NPV method finds one proposal acceptable, IRR favours another. The different rankings given by the NPV and IRR methods could be due to size disparity problem, time disparity problem and unequal expected lives.

The net present value is expressed in financial values whereas internal rate of return (IRR) is expressed in percentage terms.

In the net present value cash flows are assumed to be re-invested at cost of capital rate. In IRR reinvestment is assumed to be made at IRR rates.

(b) Commercial Paper: A Commercial Paper is an unsecured money market instrument issued in the form of a promissory note. The Reserve Bank of India introduced the commercial paper scheme in the year 1989 with a view to enabling highly rated corporate borrowers to diversify their sources of short- term borrowings and to provide an additional instrument to investors. Subsequently, in addition to the Corporate, Primary Dealers and All India Financial Institutions have also been allowed to issue Commercial Papers. Commercial papers are issued in denominations of ₹ 5 lakhs or multiples thereof and the interest rate is generally linked to the yield on the one-year government bond.

All eligible issuers are required to get the credit rating from Credit Rating Information Services of India Ltd, (CRISIL), or the Investment Information and Credit Rating Agency of India Ltd (ICRA) or the Credit Analysis and Research Ltd (CARE) or the FITCH Ratings India Pvt. Ltd or any such other credit rating agency as is specified by the Reserve Bank of India.

(c) Desirability Factor/Profitability Index

In certain cases, we have to compare a number of proposals each involving different amount of cash inflows. One of the methods of comparing such proposals is to work out what is known as the 'Desirability factor' or 'Profitability index'. In general terms, a project is acceptable if its profitability index value is greater than 1.

Mathematically, the desirability factor is calculated as below:

$$\frac{\text{Sum of Discounted Cash inflows}}{\text{Initial Cash outlay or Total Discounted Cash outflow (as the case may be)}}$$

OR

(c) Cut-off Rate: It is the minimum rate which the management wishes to have from any project. Usually this is based upon the cost of capital. The management gains only if a project gives return of more than the cut - off rate. Therefore, the cut - off rate can be used as the discount rate or the opportunity cost rate.

Test Series: March, 2023

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Attempt any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) Following are the selected financial Information of Alt Car Limited for the year ended 31st March 2022:

Financial Leverage	3
Interest	₹ 85,000
Operating Leverage	2
Variable cost as a percentage of sales	85%
Income tax rate	25%

You are required to PREPARE the Income Statement.

(b) Roma Nov Ltd. has a capital of ₹25,00,000 in equity shares of ₹100 each. The shares are currently quoted at ₹120. The company proposes to declare a dividend of ₹15 per share at the end of the current financial year. The capitalization rate for the risk class of which the company belongs is 15%. COMPUTE market price of the share at the end of the year, if

(i) Dividend is not declared.

(ii) Dividend is declared.

Assuming that the company pays the dividend and has net profits of ₹9,00,000 and makes new investments of ₹15,00,000 during the period, CALCULATE number of new shares to be issued? Use the MM model.

(c) Based on the following particulars SHOW various assets and liabilities of Raina Ltd.

Fixed assets turnover ratio (Based on Cost of sales)	10 times
Capital turnover ratio (Based on Cost of sales)	3 times
Inventory Turnover	10 times
Receivable turnover	5 times
Payable turnover	5 times
GP Ratio	40%

Gross profit during the year amounts to Rs.15,00,000. There is no long-term loan or overdraft. Reserve and surplus amount to Rs.5,00,000. Ending inventory of the year is Rs. 40,000 above the beginning inventory.

(d) Aeron We Ltd. is considering two alternative financing plans as follows:

Particulars	Plan – A (₹)	Plan – B (₹)
Equity shares of ₹ 100 each	90,00,000	90,00,000
Preference Shares of ₹ 100 each	-	20,00,000
9% Debentures	20,00,000	-
	1,10,00,000	1,10,00,000

The indifference point between the plans is ₹7,60,000. Corporate tax rate is 25%. CALCULATE the rate of dividend on preference shares. **(4 × 5 Marks = 20 Marks)**

2. RML Limited needs ₹6,50,00,000 for the Expansion purposes. The following three plans are feasible:

(I) The Company may issue 6,50,000 equity shares at ₹100 per share.

(II) The Company may issue 4,00,000 equity shares at ₹100 per share and 2,50,000 debentures of ₹100 denomination bearing a 9% rate of interest.

(III) The Company may issue 4,00,000 equity shares at ₹100 per share and 2,50,000 cumulative preference shares at ₹100 per share bearing a 9% rate of dividend.

(i) If the Company's earnings before interest and taxes are ₹15,62,500, ₹22,50,000, ₹62,50,000, ₹93,75,000 and ₹1,56,25,000, CALCULATE the earnings per share under each of three financial plans? Assume a Corporate Income tax rate of 25%.

(ii) WHICH alternative would you recommend and why? **(10 Marks)**

3. You are given the following information:

(i) Estimated monthly Sales are as follows:

	₹		₹
January	5,50,000	June	4,40,000
February	6,60,000	July	5,50,000
March	7,70,000	August	4,40,000
April	4,40,000	September	3,30,000
May	3,30,000	October	5,50,000

(ii) Wages and Salaries are estimated to be payable as follows:

	₹		₹
April	49,500	July	55,000
May	44,000	August	49,500
June	55,000	September	49,500

(iii) Of the sales, 75% is on credit and 25% for cash. 60% of the credit sales are collected within one month and the balance in two months. There are no bad debt losses.

(iv) Purchases amount to 75% of sales and are made and paid for in the month preceding the sales.

(v) The firm has taken a loan of ₹6,00,000. Interest @ 12% p.a. has to be paid quarterly in January, April and so on.

(vi) The firm is to make payment of tax of ₹26,000 in July 2023.

(vii) The firm had a cash balance of ₹35,000 on 1St April 2023 which is the minimum desired level of cash balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored).

Required:

PREPARE monthly cash budgets for six months beginning from April, 2023 on the basis of the above information. **(10 Marks)**

4. Yellow bells Ltd. wants to replace its old machine with new automatic machine. The old machine had been fully depreciated for tax purpose but has a book value of ₹3,50,000 on 31st March 2022. The machine cannot fetch more than ₹45,000 if sold in the market at present. It will have no realizable value after 10 years. The company has been offered ₹1,60,000 for the old machine as a trade in on the new machine which has a price (before allowance for trade in) of ₹6,50,000. The expected life of new machine is 10 years with salvage value of ₹63,000.

Further, the company follows straight line depreciation method but for tax purpose, written down value method depreciation @ 9% is allowed taking that this is the only machine in the block of assets.

Given below are the expected sales and costs from both old and new machine:

	Old machine (₹)	New machine (₹)
Sales	11,74,500	11,74,500
Material cost	2,61,000	1,83,063
Labour cost	1,95,750	1,59,500
Variable overhead	81,563	68,875
Fixed overhead	1,30,500	1,41,375
Depreciation	34,800	60,175
Profit Before Tax (PBT)	4,70,888	5,61,513
Tax @ 25%	1,17,722	1,40,378
Profit After Tax (PAT)	3,53,166	4,21,134

From the above information, ANALYSE whether the old machine should be replaced or not if required rate of return is 10%? Ignore capital gain tax.

PV factors @ 10%:

Year	1	2	3	4	5	6	7	8	9	10
PVF	0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467	0.424	0.386

(10 Marks)

5. BIG BLOCK Ltd. is considering two mutually exclusive projects X and Y. You have been given below the Net Cash flow probability distribution of each project:

Project- X		Project – Y	
Net Cash Flow (₹)	**Probability**	**Net Cash Flow (₹)**	**Probability**
3,12,500	0.2	9,75,000	0.1
3,75,000	0.2	8,25,000	0.3
4,37,500	0.6	6,75,000	0.6

(i) REQUIRED:

(a) Expected Net Cash Flow of each project.

(b) Variance of each project.

(c) Standard Deviation of each project.

(d) Coefficient of Variation of each project.

(ii) IDENTIFY which project would you recommend? Give reasons. **(10 Marks)**

6. (a) What is debt securitisation? EXPLAIN the basics of debt securitisation process.

(b) DISCUSS Agency Problem and Agency Cost.

(c) DEFINE Security Premium Notes. **(4 + 4+ 2 =10 Marks)**

Test Series: March, 2023

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

1. (a) (i) Financial Leverage $= \frac{EBIT}{EBIT - Interest}$

Or, $3 = \frac{EBIT}{EBIT - Interest}$

Or, $3 = \frac{EBIT}{EBIT - ₹\ 85000}$

Or, EBIT = ₹1,27,500

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

Or, $= \frac{Contribution}{1,27,500} = 2$

Or, Contribution = ₹ 2,55,000

(iii) Sales = $\frac{Contribution}{P/V\ Ratio} = \frac{2,55,000}{15\%} = ₹17,00,000$

(iv) Now, Contribution – Fixed cost = EBIT

Or ₹ 2,55,000 – Fixed cost = ₹1,27,500

Or Fixed Cost =₹1,27,500

Income Statement for the year ended 31st March 2022

Particulars	₹
Sales	17,00,000
Less: Variable Cost (85% of Rs.17,00,000)	(14,45,000)
Contribution	2,55,000
Less: Fixed Cost (Contribution - EBIT)	(1,27,500)
Earnings Before Interest and Tax (EBIT)	1,27,500
Less: Interest	(85,000)
Earnings Before Tax (EBT)	42,500
Less: Income Tax @ 25%	(10,625)
Earnings After Tax (EAT or PAT)	31,875

(b) Given,

Cost of Equity (K_e)	**15%**
Number of shares in the beginning (n)	25,000
Current Market Price (P_0)	120
Net Profit (E)	9,00,000
Expected Dividend (D_1)	15
Investment (I)	15,00,000

Computation of market price per share, when:

(i) No dividend is declared:

$$Po = \frac{P_1 + D_1}{1 + k_e}$$

$$₹120 = \frac{P_1 + 0}{1 + 0.15}$$

P_1 = ₹138 – 0 = ₹ 138

(ii) Dividend is declared:

$$₹120 = \frac{P_1 + 15}{1 + 0.15}$$

P_1 = ₹138 – ₹15 = ₹ 123

Calculation of number of shares required for investment.

	₹
Earnings	9,00,000
Dividend distributed	3,75,000
Fund available for investment	12,75,000
Total Investment	15,00,000
Balance Funds required	15,00,000 – 12,75,000 = 2,25,000

$$\text{No. of shares} = \frac{\text{Funds required}}{\text{Price at end}(P_1)}$$

$$= \frac{2,25,000}{123} = 1,830 \text{ Shares(approx.)}$$

(c) $$G.P.\ ratio = \frac{Gross\ Profit}{Sales} = 40$$

(a) $$Sales = \frac{Gross\ Profit}{40} \times 100 = \frac{15,00,000}{40} \times 100$$

= 37,50,000

(b) Cost of Sales = Sales Gross Profit = = ₹ 37,50,000 - ₹ 15,00,000

= ₹ 22,50,000

(c) Receivable turnover = $\frac{\text{Sales}}{\text{Receivables}} = 5$

$= \text{Receivables} = \frac{\text{Sales}}{5} = \frac{37,50,000}{5}$

= ₹7,50,000

(d) Fixed assets turnover = $\frac{\text{Cost of Sales}}{\text{Fixed Assets}} = 10$

Or Fixed assets = $\frac{\text{Cost of Sales}}{10} = \frac{₹\ 22,50,000}{10}$

= ₹ 2,25,000

(e) Inventory turnover = $\frac{\text{Cost of Sales}}{\text{Average Stock}} = 10$

Average Stock = $\frac{\text{Cost of Sales}}{10} = \frac{22,50,000}{10}$ = ₹ 2,25,000

Average Stock = $\frac{\text{Opening Stock + Closing stock}}{2} = \frac{\text{Opening stock + Opening stock + 40,000}}{2}$

Average Stock = Opening+ ₹ 20,000

Opening Stock= Average Stock- ₹ 20,000

Average Stock = ₹ 2,25,000 – ₹ 20,000

Opening Stock = ₹ 2,05,000

Closing Stock = Opening Stock + ₹ 40,000

Closing Stock = ₹ 2,05,000 +₹ 40,000 =₹ 2,45,000

(f) Payable turnover = $\frac{\text{Purchase}}{\text{Payables}} = 5$

Purchases = Cost of Sales + Increase in Stock

Purchases = ₹22,50,000 + ₹40,000 = ₹22,90,000

Payables = $\frac{\text{Purchase}}{5} = \frac{₹\ 22,90,000}{5}$ = ₹4,58,000

(h) Capital Employed = $\frac{\text{Cost of Sales}}{3} = \frac{₹\ 22,50,000}{3}$

= ₹7,50,000

Equity share Capital = Capital Employed – Reserves & Surplus

= ₹7,50,000 – ₹5,00,000 = ₹2,50,000

Balance Sheet of T Ltd as on……

Liabilities	₹	Assets	₹
Capital	2,50,000	Fixed Assets	2,25,000
Reserve & Surplus	5,00,000	Stock	2,45,000
Payables	4,58,000	Receivables	7,50,000
		Other Current Assets (balancing figure)	2,38,000
	14,58,000		14,58,000

(d) Computation of Rate of Preference Dividend

$$\frac{\text{(EBIT- Interest) (1 -t)}}{\text{No. of Equity Shares } (N_1)} = \frac{\text{(EBIT(1-t) - Preference Dividend}}{\text{No. of Equity Shares } (N_2)}$$

$$\frac{(7,60,000 - 1,80,000) \times (1-0.25)}{90,000 \text{ shares}} = \frac{7,60,000\ (1-0.25) - \text{Preference Dividend}}{90,000 \text{ shares}}$$

$$\frac{4,35,000}{90,000 \text{ shares}} = \frac{5,70,000 - \text{Preference Dividend}}{90,000 \text{ shares}}$$

₹ 4,35,000 = ₹ 5,70,000 – Preference Dividend

Preference Dividend = ₹ 5,70,000 – ₹ 4,35,000 = ₹ 1,35,000

$$\text{Rate of Dividend} = \frac{\text{Preference Dividend}}{\text{Preference share capital}} \times 100$$

$$= \frac{1,35,000}{20,00,000} \times 100 = 6.75\ \%$$

2. Computation of EPS under three-financial plans.

Plan I: Equity Financing

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Interest	0	0	0	0	0
EBT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Tax @ 25%	3,90,625	5,62,500	15,62,500	23,43,750	39,06,250
PAT	11,71,875	16,87,500	46,87,500	70,31,250	1,17,18,750
No. of equity shares	6,50,000	6,50,000	6,50,000	6,50,000	6,50,000
EPS	1.80	2.60	7.21	10.82	18.03

Plan II: Debt – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Interest	22,50,000	22,50,000	22,50,000	22,50,000	22,50,000
EBT	(6,87,500)	0	40,00,000	71,25,000	1,33,75,000
Less: Tax @ 25%	1,71,875*	0	10,00,000	17,81,250	33,43,750
PAT	(5,15,625)	0	30,00,000	53,43,750	1,00,31,250
No. of equity shares	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000
EPS (₹)	(1.29)	0.00	7.50	13.36	25.08

* The Company can set off losses against the overall business profit or may carry forward it to next financial years.

Plan III: Preference Shares – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Interest	0	0	0	0	0

EBT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Tax @ 25%	3,90,625	5,62,500	15,62,500	23,43,750	39,06,250
PAT	11,71,875	16,87,500	46,87,500	70,31,250	1,17,18,750
Less: Pref. dividend *	22,50,000	22,50,000	22,50,000	22,50,000	22,50,000
PAT after Pref. dividend.	(10,78,125)	(5,62,500)	24,37,500	47,81,250	94,68,750
No. of Equity shares	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000
EPS	(2.70)	(1.41)	6.09	11.95	23.67

* In case of cumulative preference shares, the company has to pay cumulative dividend to preference shareholders.

(ii) In case of lower EBIT Plan I i.e Equity Financing is better however in case of higher EBIT Plan II i.e Debt=Equity Mix is best.

3. Computation – Collections from Customers

Particulars	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Total Sales	6,60,000	7,70,000	4,40,000	3,30,000	4,40,000	5,50,000	4,40,000	3,30,000
Credit Sales (75% of total Sales)	4,95,000	5,77,500	3,30,000	2,47,500	3,30,000	4,12,500	3,30,000	2,47,500
Collection (within one month)		2,97,000	3,46,500	1,98,000	1,48,500	1,98,000	2,47,500	1,98,000
Collection (within two months)			1,98,000	2,31,000	1,32,000	99,000	1,32,000	1,65,000
Total Collections			**5,44,500**	**4,29,000**	**2,80,500**	**2,97,000**	**3,79,500**	**3,63,000**

Monthly Cash Budget for Six Months: April to September 2023

Particulars	April	May	June	July	August	Sept.
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Receipts:						
Opening Balance	35,000	35,000	35,000	35,000	35,000	35,000
Cash Sales	1,10,000	82,500	1,10,000	1,37,500	1,10,000	82,500
Collections from Debtors	5,44,500	4,29,000	2,80,500	2,97,000	3,79,500	3,63,000
Total Receipts (A)	**6,89,500**	**5,46,500**	**4,25,500**	**4,69,500**	**5,24,500**	**4,80,500**
Payments:						
Purchases	2,47,500	3,30,000	4,12,500	3,30,000	2,47,500	4,12,500
Wages and Salaries	49,500	44,000	55,000	55,000	49,500	49,500
Interest on Loan	18,000	-----	-----	18,000	-----	-----
Tax Payment	-----	-----	-----	26,000	-----	-----
Total Payment (B)	**3,15,000**	**3,74,000**	**4,67,500**	**4,29,000**	**2,97,000**	**4,62,000**
Minimum Cash Balance	35,000	35,000	35,000	35,000	35,000	35,000
Total Cash Required (C)	**3,50,000**	**4,09,000**	**5,02,500**	**4,64,000**	**3,32,000**	**4,97,000**
Surplus/ (Deficit) (A)-(C)	3,39,500	1,37,500	-77,000	5,500	1,92,500	-16,500

Investment/Financing:						
Total effect of (Invest)/ Financing (D)	-3,39,500	-1,37,500	77,000	-5,500	-1,92,500	16,500
Closing Cash Balance (A) + (D) - (B)	35,000	35,000	35,000	35,000	35,000	35,000

4. (i) Calculation of Base for depreciation or Cost of New Machine

Particulars	**(₹)**
Purchase price of new machine	6,50,000
Less: Sale price of old machine	1,60,000
	4,90,000

(ii) Calculation of Profit before tax as per books

Particulars	**Old machine**	**New machine**	**Difference**
	(₹)	**(₹)**	**(₹)**
PBT as per books	4,70,888	5,61,513	90,625
Add: Depreciation as per books	34,800	60,175	25,375
Profit before tax and depreciation (PBTD)	5,05,688	6,21,688	1,16,000

Calculation of Incremental NPV

Year	**PVF**	**PBTD**	**Dep. @ 9%**	**PBT**	**Tax @ 25%**	**Cash Inflows**	**PV of Cash Inflows**
	@ 10%	**(₹)**	**(₹)**	**(₹)**	**(₹)**	**(₹)**	**(₹)**
	1	**2**	**3**	**4(2-3)**	**(5) = (4) x 0.25**	**(6) = (4) – (5) + (3)**	**(7) = (6) x (1)**
1	0.909	1,16,000.00	44,100.00	71,900.00	17,975.00	98,025.00	89,104.73
2	0.826	1,16,000.00	40,131.00	75,869.00	18,967.25	97,032.75	80,149.05
3	0.751	1,16,000.00	36,519.21	79,480.79	19,870.20	96,129.80	72,193.48
4	0.683	1,16,000.00	33,232.48	82,767.52	20,691.88	95,308.12	65,095.45
5	0.621	1,16,000.00	30,241.56	85,758.44	21,439.61	94,560.39	58,722.00
6	0.564	1,16,000.00	27,519.82	88,480.18	22,120.05	93,879.95	52,948.29
7	0.513	1,16,000.00	25,043.03	90,956.97	22,739.24	93,260.76	47,842.77
8	0.467	1,16,000.00	22,789.16	93,210.84	23,302.71	92,697.29	43,289.63
9	0.424	1,16,000.00	20,738.14	95,261.86	23,815.47	92,184.53	39,086.24
10	0.386	1,16,000.00	18,871.70	97,128.30	24,282.07	91,717.93	35,403.12
							5,83,834.77
Add: PV of Salvage value of new machine (₹ 63,000 ´ 0.386)							24,318.00
Total PV of incremental cash inflows							6,08,152.77
Less: Cost of new machine [as calculated in point(i)]							4,90,000.00
Incremental Net Present Value							1,18,152.77

Analysis: Since the Incremental NPV is positive, the old machine should be replaced.

5. (i) (a) Expected Net Cash Flow (ENCF) of Projects

Project X			Project Y		
Net Cash Flow (₹)	Probability	Expected Net Cash Flow (₹)	Net Cash Flow (₹)	Probability	Expected Net Cash Flow (₹)
3,12,500	0.2	62,500	9,75,000	0.1	97,500
3,75,000	0.2	75,000	8,25,000	0.3	2,47,500
4,37,500	0.6	2,62,500	6,75,000	0.6	4,05,000
		4,00,000			**7,50,000**

(b) Variance of Projects

Project X

= (₹3,12,500 – ₹4,00,000)^2 (0.2) + (₹3,75,000 – ₹4,00,000)^2 (0.2) + (₹4,37,500 – ₹4,00,000)^2 (0.6)

= ₹1,53,12,50,000 + ₹12,50,00,000 + ₹84,37,50,000

= ₹2,50,00,00,000

Project Y

= (₹9,75,000 – ₹7,50,000)^2 (0.1) + ₹ (8,25,000 – ₹7,50,000)^2 (0.3) + (₹6,75,000 – ₹7,50,000)^2 (0.6)

= ₹5,06,25,00,000 + ₹1,68,75,00,000 + ₹3,37,50,00,000

= ₹10,12,50,00,000

(c) Standard Deviation of Projects

Project X

$= \sqrt{\text{Variance}}$

$= \sqrt{2,50,00,00,000}$ = ₹ 50,000

Project Y

$= \sqrt{\text{Variance}}$

$= \sqrt{10,12,50,00,000}$

= ₹10,0623.06

(d) Coefficient of Variation of Projects

Project	Coefficient of variation = $\frac{\text{Standard Deviation}}{\text{Expected Net Cash Flow}}$
X	$\frac{50,000}{4,00,000}$ **= 0.125 or 12.5%**
Y	$\frac{1,00,623.06}{7,50,000}$ **= 0.1342 or 13.42%**

(ii) Coefficient of Variation of Project X is 0.125 and Project Y is 0.1342. So, the risk per rupee of net cash flow is less of Project X, therefore, Project X is better than Project Y.

6. (a) Debt Securitisation: It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.

Process of Debt Securitisation

(i) *The origination function* – A borrower seeks a loan from a finance company, bank, HDFC. The credit worthiness of borrower is evaluated and contract is entered into with repayment schedule structured over the life of the loan.

(ii) *The pooling function* – Similar loans on receivables are clubbed together to create an underlying pool of assets. The pool is transferred in favour of Special purpose Vehicle (SPV), which acts as a trustee for investors.

(iii) *The securitisation function* – SPV will structure and issue securities on the basis of asset pool. The securities carry a coupon and expected maturity which can be asset-based/mortgage based. These are generally sold to investors through merchant bankers. Investors are – pension funds, mutual funds, insurance funds.

The process of securitization is generally without recourse i.e. investors bear the credit risk and issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral. The benefits to the originator are that assets are shifted off the balance sheet, thus giving the originator recourse to off-balance sheet funding.

(b) Agency Problem and Agency Cost: Though in a sole proprietorship firm, partnership etc., owners participate in management but incorporates, owners are not active in management so, there is a separation between owner/ shareholders and managers. In theory, managers should act in the best interest of shareholders however in reality, managers may try to maximise their individual goal like salary, perks etc., so there is a principal agent relationship between managers and owners, which is known as **Agency Problem**. In a nutshell, Agency Problem is the chances that managers may place personal goals ahead of the goal of owners. Agency Problem leads to Agency Cost. **Agency cost** is the additional cost borne by the shareholders to monitor the manager and control their behaviour to maximise shareholders wealth. Generally, Agency Costs are of four types (i) monitoring (ii) bonding (iii) opportunity (iv) structuring.

(c) Secured Premium Notes: Secured Premium Notes is issued along with a detachable warrant and is redeemable after a notified period of say 4 to 7 years. The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

Test Series: April 2023

MOCK TEST PAPER –2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANICAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

Question No. **1** is compulsory.

Attempt any **four** questions from the remaining **five** questions.

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) Rambow Ltd. is contemplating purchasing machinery that would cost ₹ 10,00,000 plus GST @ 18% at the beginning of year 1. Cash inflows after tax from operations have been estimated at ₹ 2,56,000 per annum for 5 years. The company has two options for the smooth functioning of the machinery - one is service, and another is replacement of parts. The company has the option to service a part of the machinery at the end of each of the years 2 and 4 at ₹ 1,00,000 plus GST @ 18% for each year. In such a case, the scrap value at the end of year 5 will be ₹ 76,000. However, if the company decides not to service the part, then it will have to be replaced at the end of year 3 at ₹ 3,00,000 plus GST@ 18% and in this case, the machinery will work for the 6th year also and get operational cash inflow of ₹ 1,86,000 for the 6th year. It will have to be scrapped at the end of year 6 at ₹ 1,36,000.

Assume cost of capital at 12% and GST paid on all inputs including capital goods are eligible for input tax credit in the same month as and when incurred.

(i) DECIDE whether the machinery should be purchased under option 1 or under option 2 or it shouldn't be purchased at all.

(ii) If the supplier gives a discount of ₹ 90,000 for purchase, WHAT would be your decision?

Note: The PV factors at 12% are:

Year	0	1	2	3	4	5	6
PV Factor	1	0.8928	0.7972	0.7118	0.6355	0.5674	0.5066

(5 Marks)

(b) Sundaram limited a plastic manufacturing company had invested enormous amount of money in a new expansion project. Due to such a great amount of capital investment, Company needs an additional ₹ 2,00,00,000 in working capital immediately. The CFO has determined the following three feasible sources of working capital funds:

Bank Loan: The company's bank will lend ₹2,30,00,000 at 12% per annum. However, the bank will require 15% of the loan granted to be kept in a current account as the minimum average balance which otherwise would have been just ₹ 50,000.

Trade Credit: A major supplier with 2/20 net 80 credit terms has approached for supply of raw material worth ₹1,90,00,000 p.m.

Factoring: factoring firm will buy the companies receivables of ₹ 2,50,00,000 per month, which have a collection period of 60 days. factor will advance up to 75% of the face value of the receivables at 14 percent per annum. Factor Commission will amount to 2% on all receivables purchased. Factoring will save credit department expense and bad debts of ₹ 1,75,000 p.m. and ₹ 2,25,000 p.m.

Based on annual percentage cost, ADVISE which alternative should the company select. Assume 360 days a year **(5 Marks)**

(c) Manchow Limited and Noodles Limited are generating same level of Operating Income. The margin of safety for Manchow Ltd is 0.4 and for Noodles Limited it is 1.25 times of Manchow Ltd. The Interest expense of Manchow Limited is ₹ 22,50,000 and it is 40% lower for Noodles Limited. Financial Leverages of Manchow Limited and Noodles Limited are 3 and 2 respectively. Profit Volume Ratio for both companies stand as 40% and 50% respectively. Assuming a tax rate of 30%, PREPARE income statement for both companies **(5 Marks)**

(d) Using the following information, PREPARE the balance sheet:

Long-term debt to net worth	0.25
Total asset turnover	3
Average collection period	9 days
Inventory turnover	13
Gross profit margin	20%
Acid-test ratio	1.5

*Assume a 360-day year and all sales on credit.

Liabilities	₹	Assets	₹
Notes and payables	2,50,000	Cash	?
Long-term debt	?	Accounts receivable	?
Common stock	8,00,000	Inventory	?
Retained earnings	16,00,000	Plant and equipment	?
Total liabilities and equity	?	Total assets	?

(5 Marks)

2. Based on the details given below, you are required to UNDERTAKE NPV sensitivity analysis for the factors of Sales Price, Sales units, Variable cost, Fixed Cost and Initial Investment for a 10% adverse variation in each of the mentioned factors Assume straight line depreciation is allowed for tax purpose

Initial Investment	₹ 15,00,000
Tenure of Project (Years)	4
Sales Units	6000
Sales Price p.u.	₹ 250
Variable Cost p.u.	₹ 80
Fixed Cost	₹ 2,00,000
Tax Rate	30%
Salvage Value	₹ 1,50,000
Cost of Capital	14%

Use the below PV factors for calculation purpose

Year	0	1	2	3	4
PVF @ 14%	1.00	0.8772	0.7695	0.6750	0.5921

(10 Marks)

3. Rex Ltd has 20 lakh equity shares outstanding at the start of the accounting year 2023. The existing market price per share is ₹ 300. Expected dividend is ₹ 20 per share. The rate of capitalization appropriate to the risk class to which the company belongs is 20%.

   CALCULATE the market price per share when expected dividends are: (a) declared, and (b) not declared, based on the Miller – Modigliani approach.

   CALCULATE number of shares to be issued by the company at the end of the accounting year on the assumption that the net income for the year is ₹ 5 crore; investment budget is ₹ 8 crores, when (a) Dividends are declared, and (b) Dividends are not declared.

   PROVE that the market value of the shares at the end of the accounting year will remain unchanged irrespective of whether (a) Dividends are declared, or (ii) Dividends are not declared.

   WHAT is the implied growth rate in dividends as per Gordon's model, if expected dividend payment is considered imminent? **(10 Marks)**

4. Following data is available in respect of two companies having same business risk:

   Capital employed = ₹ 12,00,000, EBIT = ₹ 2,40,000 and Ke = 15%

Sources	Dumbo Ltd (₹)	Jumbo Ltd (₹)
Debt (@12%)	4,00,000	Nil
Equity	8,00,000	12,00,000

   An investor is holding 20% shares in the levered company. CALCULATE the increase in annual earnings of investor if arbitrage process is undertaken.

   Also EXPLAIN the arbitrage process if Ke = 20% for Dumbo Ltd instead of 15%. **(10 Marks)**

5. Genzy Ltd. is planning to introduce a new product with a project life of 10 years. The initial equipment cost will be ₹ 2.5 crores. At the end of 10 years, the equipment will have a resale value of 50 lakhs. A working capital of ₹ 30,00,000 will be needed and it will be released at the end of the tenth year. The project will be financed with the following capital sources.

Particulars	Amount (₹)	Issue Price (Market price)
Equity Share Capital of Face value ₹ 10 each	1,50,00,000	₹30
Debentures of face value ₹ 100 each with a maturity of 10 years	90,00,000	₹90
Preference shares of ₹ 100 each with a maturity of 10 years	60,00,000	₹96

   The existing yield on T-bills is averaging 8% p.a. The systematic risk measure for the proposed project is 1.6. NSE NIFTY is expected to yield 14% p.a. on average for the foreseeable future. Debenture holders have been promised a coupon of 12% and preference shareholders have been committed a dividend of 15%.

The sales volumes over 10 years have been estimated as follows:

Year	1	2	3-5	6-8	9-10
Units per year	70,000	98,000	2,10,000	2,50,000	1,20,000

A sales price of ₹ 300 per unit is expected and variable expenses will amount to 60% of sales revenue. Fixed cash operating costs will amount to ₹ 40,00,000 per year. The loss of any year will be set off from the profits of subsequent years.

The company is subject to a 30 per cent tax rate. The company follows straight line method of depreciation which is to be assumed to be admissible for tax purpose also.

CALCULATE the net present value of the project for the company and advise the management to take appropriate decision.

The PV factors are to be taken as rounded figures upto 2 decimals. Use market value weights to COMPUTE overall cost of capital. **(10 Marks)**

6. Attempt any **2**

(i) DISTINGUISH between Profit maximisation vis-a-vis wealth maximization.

(ii) WRITE a note on agency problem and agency cost.

(iii) EXPLAIN the determinants of dividend decisions. **(10 Marks)**

Test Series: April 2023

MOCK TEST PAPER –2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

The solutions contained herein may be based on certain assumptions. Therefore, Question may be solved based on any other logical alternative assumption/ approach/ presentation.

1. (a) Option I: Purchase Machinery and Service Part at the end of Year 2 and 4.

Net Present value of cash flow @ 12% per annum discount rate.

NPV (in ₹) = - 10,00,000 + 2,56,000 x (0.8928+0.7972+0.7118+0.6355+0.5674) – (1,00,000 x 0.7972+1,00,000 x 0.6355) + (76,000 x 0.5674)

= - 10,00,000 + (2,56,000 x 3.6047) – 1,43,270+43,122.4

= - 10,00,000 + 9,22,803.2 – 1,43,270+ 43,122.4

NPV = - 1,77,344.4

Since Net Present Value is negative; therefore, this option is not to be considered.

If Supplier gives a discount of ₹ 90,000, then:

NPV (in ₹) = + 90,000 - 1,77,344.4 = -87,344.4

In this case, Net Present Value is still negative; therefore, this option may not be advisable

Option II: Purchase Machinery and Replace Part at the end of Year 2.

NPV (in ₹)= - 10,00,000 + 2,56,000 x (0.8928+0.7972+0.7118+0.6355+0.5674) – (3,00,000 x 0.7118) + (1,86,000 x 0.5066+1,36,000 x 0.5066)

= - 10,00,000 + (2,56,000 x 3.6047) – 2,13,540+1,63,125.2

= - 10,00,000 + 9,22,803.2 – 2,13,540+1,63,125.2

NPV = - 1,27,611.6

Net Present Value is negative, the machinery should not be purchased.

If the Supplier gives a discount of ₹ 90,000, then:

NPV (in ₹) = 90,000 - 1,27,611.6 = - 37,611.6

In this case, Net Present Value is still negative; therefore, this option may not be advisable.

Decision: The Machinery should not be purchased as it will earn a negative NPV in both options of repair and replacement.

(b) (i) Bank Loan: As the minimum average balance more than ₹ 50,000 need not be kept if loan is not undertaken, the incremental money made available by bank through bank loan is ₹ 2,30,00,000- (15% x ₹ 2,30,00,000-₹ 50,000) = ₹ 1,96,00,000. Real annual cost of bank loan = (₹ 2.3 crores x 12%) / ₹ 1.96 crores = 14.08%.

(ii) Trade Credit: The real annual cost of trade credit will be 2/98 x 360/60 x 100 = 12.24%.

(iii) Factoring:

Commission charges per year = 2% x 2.5 crores x 12 = ₹ 60,00,000

Savings per year = (1,75,000+2,25,000) x 12 = ₹ 48,00,000

Net Factoring cost per year = ₹ 60,00,000 – ₹ 48,00,000 = ₹12,00,000

Annual cost of borrowing ₹ 2.5 crores x 75% i.e. ₹ 1,87,50,000 will be

$$\frac{1,87,50,000 \times 14\% + ₹\,12,00,000}{1,87,50,000} = 20.4\%$$

Conclusion: The company should select trade credit as a preferred mode of financing the working capital requirement as it results in lowest cost on an annual basis.

(c)

Particulars	Manchow Ltd (₹)	Noodle Ltd (₹)
Sales	2,10,93,750	1,08,00,000
Less: Variable Cost	1,26,56,250	54,00,000
Contribution	84,37,500	54,00,000
Less: Fixed Cost	50,62,500	27,00,000
EBIT	33,75,000	27,00,000
Less: Interest	22,50,000	13,50,000
EBT	11,25,000	13,50,000
Less: Tax	3,37,500	4,05,000
PAT	7,87,500	9,45,000

Workings:

(i) Margin of Safety

For Manchow Ltd= 0.4

For Noodles Ltd= 0.4 x 1.25 = 0.5

(ii) Interest Expense

For Manchow Ltd = ₹ 22,50,000

For Noodles Ltd = ₹ 22,50,000 x 60%= ₹ 13,50,000

(iii) For Manchow Ltd:

Financial Leverage = 3

$$\frac{EBIT}{EBT} = \frac{EBIT}{EBIT\text{-}Interest} = 3$$

$$\frac{EBIT}{EBIT - 22,50,000} = 3$$

EBIT = 3 EBIT- 67,50,000

67,50,000 = 2 EBIT

EBIT = 33,75,000

For Noodles Ltd:

Financial Leverage = 2

$$\frac{EBIT}{EBT} = \frac{EBIT}{EBIT\text{-}Interest} = 2$$

$$\frac{EBIT}{EBIT\text{-}13,50,000} = 2$$

EBIT = 2 EBIT-27,00,000

EBIT =27,00,000

(iv) Contribution:

For Manchow Ltd

Operating Leverage = 1/ Margin of Safety

= 1/0.4

= 2.5

Operating Leverage = Contribution/EBIT

2.5 = Contribution/33,75,000

Contribution = 84,37,500

For Noodles Ltd

Operating Leverage = 1/ Margin of Safety

= 1/0.5

= 2

Operating Leverage = Contribution/EBIT

2 = Contribution/27,00,000

Contribution = 54,00,000

(v) Sales:

For Manchow Ltd

P/V Ratio	= 40%
P/V Ratio	= Contribution/Sales
0.4	= 84,37,500/Sales
Sales	= 2,10,93,750

For Noodles Ltd

P/V Ratio	= 50%
P/V Ratio	= Contribution/Sales
0.5	= 54,00,000/Sales
Sales	= 1,08,00,000

(d) Working Notes:

(i) Long term Debt

Long Term Debt/ Net worth = 0.25

Long Term Debt/ (8,00,000+16,00,000) = 0.25

Long term debt = 6,00,000

(ii) Total assets

Total liabilities and Equity = Notes and payables + Long-term debt + Common stock + Retained earnings

= 2,50,000+6,00,000+8,00,000+16,00,000

Total assets = Total liabilities and Equity = 32,50,000

(iii) Sales and Cost of Goods sold

Total asset turnover = 3 = Sales/ Total Assets = Sales/32,50,000

Sales = 97,50,000

Cost of goods sold = (100% - Gross Profit margin) x Sales

= (100% - 20%) x 97,50,000 =78,00,000.

(iv) Current Assets

Inventory turnover = 13 = COGS/ Inventory = 78,00,000/Inventory

Inventory = ₹ 6,00,000

Average collection period = 9 = Receivables/Sales x 360 = Receivables/ 97,50,000 x 360

Accounts receivables = 2,43,750

Acid-test ratio = 1.5 = (Cash+ Accounts Receivables) /Notes and Payables

= (Cash +2,43,750)/2,50,000 = 1.5

Cash = 1,31,250

(v) Plant and equipment

= Total Assets - Current Assets

= 32,50,000 - (1,31,250+2,43,750+6,00,000) = 22,75,000

Balance Sheet

Liabilities	**₹**	**Assets**	**₹**
Notes and payables	2,50,000	Cash	1,31,250
Long-term debt	6,00,000	Accounts receivable	2,43,750
Common stock	8,00,000	Inventory	6,00,000
Retained earnings	16,00,000	Plant and equipment	22,75,000
Total liabilities and equity	**32,50,000**	**Total assets**	**32,50,000**

2.

Computation of CFAT (year 1 to year 4)					
Sr. No.	**Particulars**	**Original Case**	**Sales Units reduced by 10%**	**SP reduced by 10%**	**Variable Cost increased by 10%**
A	Sale Price p.u.	₹ 250	₹ 250	₹ 225	₹ 250
B	Sale units	6000	5400	6000	6000
C	Sales (A x B)	₹ 15,00,000	₹ 13,50,000	₹ 13,50,000	₹ 15,00,000
D	Variable Cost p.u.	₹ 80	₹ 80	₹ 80	₹ 88
E	Variable Cost (B x D)	₹ 4,80,000	₹ 4,32,000	₹ 4,80,000	₹ 5,28,000
F	Contribution (C - E)	₹ 10,20,000	₹ 9,18,000	₹ 8,70,000	₹ 9,72,000
G	Less: Fixed Cost	₹ -2,00,000	₹ -2,00,000	₹ -2,00,000	₹ -2,00,000
H	PBDT (F-G)	₹ 8,20,000	₹ 7,18,000	₹ 6,70,000	₹ 7,72,000
I	Less: Depreciation				
	(1500000-150000)/4	₹ -3,37,500	₹ -3,37,500	₹ -3,37,500	₹ -3,37,500
	(1600000-150000)/4	-	-	-	-
J	PBT	₹ 4,82,500	₹ 3,80,500	₹ 3,32,500	₹ 4,34,500
K	Less: Taxes @ 30%	₹ -1,44,750	₹ -1,14,150	₹ -99,750	₹ -1,30,350
L	PAT	₹ 3,37,750	₹ 2,66,350	₹ 2,32,750	₹ 3,04,150
M	Add: Depreciation	₹ 3,37,500	₹ 3,37,500	₹ 3,37,500	₹ 3,37,500
N	CFAT	₹ 6,75,250	₹ 6,03,850	₹ 5,70,250	₹ 6,41,650

Sr. No.	**Particulars**	**Fixed Cost increased by 10%**	**Initial Investment increased by 10%**
A	Sale Price p.u.	₹ 250	₹ 250
B	Sale units	6000	6000
C	Sales (A x B)	₹ 15,00,000	₹ 15,00,000
D	Variable Cost p.u.	₹ 80	₹ 80
E	Variable Cost (B x D)	₹ 4,80,000	₹ 4,80,000
F	Contribution (C - E)	₹ 10,20,000	₹ 10,20,000
G	Less: Fixed Cost	₹ -2,20,000	₹ -2,00,000
H	PBDT (F-G)	₹ 8,00,000	₹ 8,20,000
I	Less: Depreciation		
	(1500000-150000)/4	₹ -3,37,500	-
	(1600000-150000)/4	-	₹ -3,62,500
J	PBT	₹ 4,62,500	₹ 4,57,500
K	Less: Taxes @ 30%	₹ -1,38,750	₹ -1,37,250
L	PAT	₹ 3,23,750	₹ 3,20,250
M	Add: Depreciation	₹ 3,37,500	₹ 3,62,500
N	CFAT	₹ 6,61,250	₹ 6,82,750

Calculation of NPV and sensitivity analysis					
Sr. No.	**Particulars**	**Original Case**	**Sales Units reduced by 10%**	**SP reduced by 10%**	**Variable Cost increased by 10%**
I	CFAT	₹ 6,75,250	₹ 6,03,850	₹ 5,70,250	₹ 6,41,650
II	PVAF @ 14%	2.9138	2.9138	2.9138	2.9138
III	PV of CFATs (I x II)	₹ 19,67,543	₹ 17,59,498	₹ 16,61,594	₹ 18,69,640
IV	Salvage	₹ 1,50,000	₹ 1,50,000	₹ 1,50,000	₹ 1,50,000
V	PVF @ 14%	0.5921	0.5921	0.5921	0.5921
VI	PV of Salvage (IV x V)	₹ 88,815	₹ 88,815	₹ 88,815	₹ 88,815
VII	Initial Investment	₹ 15,00,000	₹ 15,00,000	₹ 15,00,000	₹ 15,00,000
VIII	NPV (III+VI-VII)	₹ 5,56,358	₹ 3,48,313	₹ 2,50,409	₹ 4,58,455
IX	Sensitivity (Case NPV-Original NPV)/ Original NPV		-37.39%	-54.99%	-17.60%
				Most sensitive	

Sr. No.	**Particulars**	**Fixed Cost increased by 10%**	**Initial Investment increased by 10%**
I	CFAT	₹ 6,61,250	₹ 6,82,750
II	PVAF @ 14%	2.9138	2.9138
III	PV of CFATs (I x II)	₹ 19,26,750	₹ 19,89,397
IV	Salvage	₹ 1,50,000	₹ 1,50,000
V	PVF @ 14%	0.5921	0.5921
VI	PV of Salvage (IV x V)	₹ 88,815	₹ 88,815
VII	Initial Investment	₹ 15,00,000	₹ 16,50,000
VIII	NPV (III+VI-VII)	₹ 5,15,565	₹ 4,28,212
IX	Sensitivity Sensitivity (Case NPV-Original NPV)/ Original NPV	-7.33%	-23.03%
		Least sensitive	

3. (a) (i) Calculation of market price per share

According to Miller – Modigliani (MM) Approach:

$$P_o = \frac{P_1 + D_1}{1 + K_e}$$

Where,

Existing market price (P_o) = ₹ 300

Expected dividend per share (D_1) = ₹ 20

Capitalization rate (k_e) = 0.20 Market price at year end (P_1) = ?

a. If expected dividends are declared, then

300=(P1+20)/(1+0.2)

300 x 1.2 = P1+20

P1= 340

b. If expected dividends are not declared, then

300=(P1+0)/(1+0.2)

300 x 1.2 = P1

P1= 360

(ii) Calculation of number of shares to be issued

	(a)	(b)
	Dividends are declared. (₹ lakh)	**Dividends are not Declared (₹ lakh)**
Net income	500	500
Total dividends	(400)	-
Retained earnings	100	500
Investment budget	800	800
Amount to be raised by new issues	700	300
Relevant market price (₹ per share)	340	360
No. of new shares to be issued (in lakh) (₹ 700 ÷ 340; ₹ 300 ÷ 360)	2.0588	0.8333

(iii) Calculation of market value of the shares

	(a)	(b)
Particulars	**Dividends are declared**	**Dividends are not Declared**
Existing shares (in lakhs)	20.00	20.00
New shares (in lakhs)	2.0588	0.8333
Total shares (in lakhs)	22.0588	20.8333
Market price per share (₹)	340	360
Total market value of shares at the end of the year (₹ in lakh)	22.0588 × 340 = 7,500 (approx.)	20.8333 × 360 = 7,500 (approx.)

Hence, it is proved that the total market value of shares remains unchanged irrespective of whether dividends are declared, or not declared.

(iv) P0=D1/(Ke-g)

300 = 20/(0.2-g)

0.2-g = 20/300

0.2-g = 0.0667

G = 0.133333

g = 13.3333%

4. (I). Valuation of firms

Particulars	Dumbo Ltd (₹)	Jumbo Ltd (₹)
EBIT	2,40,000	2,40,000
Less: Interest on debt (12% × ₹ 4,00,000)	48,000	Nil
Earnings available to Equity shareholders	1,92,000	2,40,000
K_e	15%	15%
Value of Equity (S) (Earnings available to Equity shareholders/K_e)	12,80,000	16,00,000
Debt (D)	4,00,000	Nil
Value of Firm (V) = S + D	16,80,000	16,00,000

Value of Levered company is more than that of unlevered company. Therefore, investor will sell his shares in levered company and buy shares in unlevered company. To maintain the level of risk he will borrow proportionate amount and invest that amount also in shares of unlevered company

(II). Investment & Borrowings

	₹
Sell shares in Levered company (12,80,000 x 20%)	2,56,000
Borrow money (4,00,000 x 20%)	80,000
Buy shares in Unlevered company	3,36,000

(III). Change in Return

	₹
Income from shares in Unlevered company (2,40,000 x 3,36,000/16,00,000)	50,400
Less: Interest on loan (80,000 x 12%)	9,600
Net Income from unlevered firm	40,800
Less: Income from Levered firm (1,92,000 x 20%)	38,400
Incremental Income due to arbitrage	2,400

Arbitrage process if Ke = 20%

(I). Valuation of firms

Particulars	Dumbo Ltd (₹)	Jumbo Ltd (₹)
EBIT	2,40,000	2,40,000
Less: Interest on debt (12% × ₹ 4,00,000)	48,000	Nil
Earnings available to Equity shareholders	1,92,000	2,40,000
K_e	20%	15%
Value of Equity (S) (Earnings available to Equity shareholders/K_e)	9,60,000	16,00,000

Debt (D)	4,00,000	Nil
Value of Firm (V) = S + D	13,80,000	16,00,000

Value of unlevered company is more than that of levered company. Therefore, investor will sell his shares in unlevered company and buy proportionate shares and debt in levered company i.e. 20% share.

(II). Investment & Borrowings

	₹
Sell shares in unlevered company (16,00,000 x 20%)	3,20,000
Buy shares in levered company (9,60,000 x 20%)	1,92,000
Buy Debt of levered company	1,28,000

(III). Change in Return

	₹
Income from shares in levered company (1,92,000 x 20%)	38,400
Add: Interest on debt of levered (1,28,000 x 12%)	15,360
Net Income from levered firm	53,760
Less: Income from unlevered firm (2,40,000 x 20%)	48,000
Incremental Income due to arbitrage	5,760

5. Cost of Equity

Ke = Rf + Beta * (Rm – Rf)

Ke = 8% + 1.6 * (14% - 8%)

Ke = 8% + (1.6 * 6%)

Ke = 17.6%

1. Cost of Redeemable Debentures (Post-Tax)

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

$$Kd = \frac{12,00,000 * (1 - 30\%) + ((1,00,00,000 - 90,00,000) / 10)}{(1,00,00,000 + 90,00,000) / 2}$$

$$Kd = \frac{8,40,000 + 1,00,000}{95,00,000}$$

Kd = 9.89%

2. Cost of Redeemable Preference Shares

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

2

$$Kp = \frac{(62,50,000 * 15\%) + ((62,50,000 - 60,00,000) / 10)}{(62,50,000 + 60,00,000) / 2}$$

$$Kp = \frac{9,37,500 + 25,000}{61,25,000}$$

Kp = 15.71%

3. Weighted Average Cost of Capital (WACC) – Book Value Method

Source of Capital	Market Value	Weights	After Tax Cost of Capital	WACC
Equity Share Capital	1,50,00,000	0.5	17.6%	0.088
Debentures	90,00,000	0.3	9.89%	0.030
Preference Share Capital	60,00,000	0.2	15.71%	0.031
	3,00,00,000	**1.000**		**0.149**

WACC = 14.9%

4. Computation of CFAT

	(year 1 to year 4)					
Sr. No.	**Particulars / Year**	**1**	**2**	**3-5**	**6-8**	**9-10**
A	Sale Price p.u.	300	300	300	300	300
	Sale units	70,000	98,000	2,10,000	2,50,000	1,20,000
C	Sales (A x B)	2,10,00,000	2,94,00,000	6,30,00,000	7,50,00,000	3,60,00,000
D	Variable Cost p.u.	180	180	180	180	180
E	Variable Cost (B x D)	1,26,00,000	1,76,40,000	3,78,00,000	4,50,00,000	2,16,00,000
F	Contribution (C - E)	84,00,000	1,17,60,000	2,52,00,000	3,00,00,000	1,44,00,000
G	Less: Fixed Cost	40,00,000	40,00,000	40,00,000	40,00,000	40,00,000
H	PBDT (F-G)	44,00,000	77,60,000	2,12,00,000	2,60,00,000	1,04,00,000
I	Less: Depreciation (2,50,00,000-50,00,000) / 10	20,00,000	20,00,000	20,00,000	20,00,000	20,00,000
J	PBT	24,00,000	57,60,000	1,92,00,000	2,40,00,000	84,00,000
K	Less: Taxes @ 30%	7,20,000	17,28,000	57,60,000	72,00,000	25,20,000
L	PAT	16,80,000	40,32,000	1,34,40,000	1,68,00,000	58,80,000
M	Add: Depreciation	20,00,000	20,00,000	20,00,000	20,00,000	20,00,000
N	CFAT	36,80,000	60,32,000	1,54,40,000	1,88,00,000	78,80,000

5. Computation of NPV

Sr. No.	Particulars / Year	1	2	3-5	6-8	9-10
I	CFAT	36,80,000	60,32,000	1,54,40,000	1,88,00,000	78,80,000
II	PVAF @ 14.9%	0.87	0.76	(0.66+0.57+0.50) = 1.73	(0.43+0.38+0.33) = 1.14	(0.29+0.25) = 0.54
III	PV of CFATs (I x II)	32,01,600	45,84,320	2,67,11,200	2,14,32,000	42,55,200

IV	Salvage + Release of WC					80,00,000
V	PVF @ 14.9%					0.25
VI	PV of Salvage (IV x V)					20,00,000

PV of Inflows = 32,01,600 + 45,84,320 + 2,67,11,200 + 2,14,32,000 + 42,55,200 + 20,00,000

PV of Inflows = 6,21,84,320

PV of Outflows = Investment + Introduction of Working Capital

PV of Outflows = 2,50,00,000 + 30,00,000

PV of Outflows = 2,80,00,000

NPV = PV of Inflows – PV of Outflows

NPV = 6,21,84,320 - 2,80,00,000

NPV = 3,41,84,320

The management should consider taking up the project as the Net Present Value of the Project is Positive.

6. **(i)** It has traditionally been argued that the primary objective of a company is to earn profit; hence the objective of financial management is also profit maximisation. This implies that the finance manager has to make his decisions in a manner so that the profits of the concern are maximised. Each alternative, therefore, is to be seen as to whether or not it gives maximum profit.

However, profit maximisation cannot be the sole objective of a company. It is at best a limited objective. If profit is given undue importance, a number of problems can arise. Some of these have been discussed below:

(i) The term profit is vague. **It does not clarify what exactly it means.** It conveys a different meaning to different people. For example, profit may be in short term or long term period; it may be total profit or rate of profit etc.

(ii) Profit maximisation has to be attempted with a realisation of risks involved. There is a direct relationship between risk and profit. Many risky propositions yield high profit. Higher the risk, higher is the possibility of profits. If profit maximisation is the only goal, then risk factor is altogether ignored. This implies that finance manager will accept highly risky proposals also, if they give high profits. In practice, however, risk is very important consideration and has to be balanced with the profit objective.

(iii) Profit maximisation as an objective does not take into account the time pattern of returns. Proposal A may give a higher amount of profits as compared to proposal B, yet if the returns of proposal A begin to flow say 10 years later, proposal B may be preferred which may have lower overall profit but the returns flow is more early and quick.

(iv) Profit maximisation as an objective is too narrow. It fails to take into account the social considerations as also the obligations to various interests of workers, consumers, society, as well as ethical trade practices. If these factors are ignored, a company cannot survive for long. Profit maximization at the cost of social and moral obligations is a short sighted policy.

Wealth / Value Maximisation

We will first like to define what is Wealth / Value Maximization Model. Shareholders wealth are the result of cost benefit analysis adjusted with their timing and risk i.e. time value of money.

So, It is important that benefits measured by the finance manager are in terms of cash flow. Finance manager should emphasis on Cash flow for investment or financing decisions not on Accounting

profit. The shareholder value maximization model holds that the primary goal of the firm is to maximize its market value and implies that business decisions should seek to increase the net present value of the economic profits of the firm. So for measuring and maximising shareholders wealth finance manager should follow:

A) Cash Flow approach not Accounting Profit

B) Cost benefit analysis

C) Application of time value of **money.**

How do we measure the value/wealth of a firm?

According to Van Horne, "Value of a firm is represented by the market price of the company's common stock. The market price of a firm's stock represents the focal judgment of all market participants as to what the value of the particular firm is. It takes into account present and prospective future earnings per share, the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock. The market price serves as a performance index or report card of the firm's progress. It indicates how well management is doing on behalf of stockholder's".

Why Wealth Maximization Works? Before we answer this question it is important to first understand and know what other goals a business enterprise may have. Some of the other goals a business enterprise may follow are:-

A) Achieving a higher growth rate

B) Attaining a larger market share

C) Gaining leadership in the market in terms of products and technology

D) Promoting employee welfare

E) Increasing customer satisfaction

F) Improving community life, supporting education and research, solving societal problems, etc.

Though, the above goals are important but the primary goal remains to be wealth maximization, as it is critical for the very existence of the business enterprise. If this goal is not met, public/institutions would lose confidence in the enterprise and will not invest further in the growth of the organization. If the growth of the organization is restricted than the other goals like community welfare will not get fulfilled.

Conflicts in Profit vs. Value maximisation principle

In any company, the management is the decision taking authority. As a normal tendency the management may pursue its own personal goals (profit maximization). But in an organization where there is a significant outside participation (shareholding, lenders etc.), the management may not be able to exclusively pursue its personal goals due to the constant supervision of the various stakeholders of the company-employees, creditors, customers, government, etc.

Every entity associated with the company will evaluate the performance of the management from the fulfilment of its own objective. The survival of the management will be threatened if the objective of any of the entities remains unfulfilled.

The wealth maximization objective is generally in accord with the interests of the various groups such as owners, employees, creditors and society, and thus, it may be consistent with the management objective of survival.

Owing to limitation (timing, social consideration etc.) in profit maximization, in today's real world situations which is uncertain and multi-period in nature, wealth maximization is a better objective. Where the time period is short and degree of uncertainty is not great, wealth maximization and profit maximization amount to essentially the same.

The table below highlights some of the advantages and disadvantages of both profit maximization and wealth maximization goals:-

Goal	Objective	Advantages	Disadvantages
Profit Maximization	Large amount of profits	(i) Easy to calculate profits (ii) Easy to determine the link between financial decisions and profits.	(i) Emphasizes the short term gains (ii) Ignores risk or uncertainty (iii) Ignores the timing of returns (iv) Requires immediate resources.
Shareholders Wealth Maximisation	Highest market value of shares.	(i) Emphasizes the long term gains (ii) Recognises risk or uncertainty (iii) Recognises the timing of returns (iv) Considers shareholders' return.	(i) Offers no clear relationship between financial decisions and share price. (ii) Can lead to management anxiety and frustration.

Example: Profit maximization can be achieved in the short term at the expense of the long term goal, that is, wealth maximization. For example, a costly investment may experience losses in the short term but yield substantial profits in the long term. Also, a firm that wants to show a short term profit may, for example, postpone major repairs or replacement, although such postponement is likely to hurt its long term profitability.

(ii) Though in a sole proprietorship firm, partnership etc., owners participate in management but in corporates, owners are not active in management so, there is a separation between owner/ shareholders and managers. In theory managers should act in the best interest of shareholders however in reality, managers may try to maximise their individual goal like salary, perks etc., so there is a **principal agent relationship between managers and owners, which is known as Agency Problem**. In a nutshell, Agency Problem is the chances that managers may place personal goals ahead of the goal of owners Agency Problem leads to Agency Cost. Agency cost is the additional cost borne by the shareholders to monitor the manager and control their behaviour so as to maximise shareholders wealth. Generally, Agency Costs are of four types (i) monitoring (ii) bonding (iii) opportunity (iv) structuring.

Addressing the agency problem

The agency problem arises if manager's interests are not aligned to the interests of the debt lender and equity investors. The agency problem of debt lender would be addressed by imposing negative covenants i.e. the managers cannot borrow beyond a point. This is one of the most important concepts of modern day finance and the application of this would be applied in the Credit Risk Management of Bank, Fund Raising, Valuing distressed companies.

Agency problem between the managers and shareholders can be addressed if the interests of the managers are aligned to the interests of the share- holders. It is easier said than done.

However, following efforts have been made to address these issues:

(A) Managerial compensation is linked to profit of the company to some extent and also with the long term objectives of the company.

(B) Employee is also designed to address the issue with the underlying assumption that maximisation of the stock price is the objective of the investo₹

(C) Effecting monitoring can be done.

(iii) The dividend policy is affected by the following factors:

1. **Availability of funds:** If the business is in requirement of funds, then retained earnings could be a good source. The reason being the saving of floatation cost and prevention of dilution of control which happens in case of new issue of equity shares to public.
2. **Cost of capital:** If the financing requirements are to be executed through debt (relatively cheaper source of finance), then it would be preferable to distribute more dividend. On the other hand, if the financing is to be done through fresh issue of equity shares, then it is better to use retained earnings as much as possible.
3. **Capital structure:** An optimum Debt Equity ratio should also be considered for the dividend decision.
4. **Stock price:** Stock price here means market price of the shares. Generally, higher dividends increase market value of shares and low dividends decrease the value.
5. **Investment opportunities in hand:** The dividend decision is also affected if there are investment opportunities in hand. In that situation, the company may prefer to retain more earnings.
6. **Internal rate of return (IRR):** If the internal rate of return (IRR) is more than the cost of retained earnings (K_r), it is better to distribute the earnings as much as possible.
7. **Trend of industry:** The investors depend on some industries for their regular dividend income. Therefore, in such cases, the firms have to pay dividend in order to survive in the market.
8. **Expectation of shareholders:** The shareholders can be categorised into two categories: (i) those who invests for regular income, & (ii) those who invests for growth. Generally, the investor prefers current dividend over the future growth.
9. **Legal constraints:** Section 123 of the Companies Act, 2013 which provides for declaration of dividend sates that Dividend shall be declared or paid by a company for any financial year only:

   (a) out of the profits of the company for that year arrived at after providing for depreciation in accordance with the relevant provisions, or

   (b) out of the profits of the company for any previous financial year or years arrived at after providing for depreciation in accordance with the relevant provisions and remaining undistributed, or

   (c) out of both, or

   (d) out of money provided by the Central Government or a State Government for the payment of dividend by the company in pursuance of a guarantee given by that Government.

It may be noted that, while computing the profits for payment of dividends any amount representing unrealised gains, notional gains or revaluation of assets and any change in carrying amount of an asset or of a liability on measurement of the asset or the liability at fair value shall be excluded.

10. **Taxation:** Before 1st April 2020, as per Section 115-O of Income Tax Act, 1961, dividend was subject to dividend distribution tax (DDT) in the hands of the company. Dividend on which DDT was paid, was to be exempted in the hands of the shareholder u/s 10(34). However, as per amendment made by the Finance Act 2020, the exemption u/s 10(34) shall not apply to dividend received on or after 1st April 2020 and the dividend income from shares held as investment shall be taxable under the head of 'Other income' at the applicable slab rate.

Test Series: September 2023

MOCK TEST PAPER 1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER – 8A: FINANCIAL MANAGEMENT

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

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

Working notes should form part of the answer.

1. (a) Bhaskar Manufactures Ltd. have Equity Share Capital of ₹ 5,00,000 (face value ₹100) to meet the expenditure of an expansion programme, the company wishes to raise ₹ 3,00,000 and is having following four alternative sources to raise the funds:

Plan A: To have full money from equity shares.

Plan B: To have ₹ 1 lakhs from equity and ₹ 2 lakhs from borrowing from the financial institution @ 10% p.a.

Plan C: Full money from borrowing @ 10% p.a.

Plan D: ₹1 lakh in equity and ₹ 2 lakhs from preference shares at 8% p.a.

The company is expected to have an earning of ₹ 1,50,000. The corporate tax is 50%. Suggest a suitable plan of the above four plans to raise the required funds. **(5 Marks)**

(b) Following information has been provided from the books of Laxmi Pvt. Ltd. for the year ending on 31st March 2022:

Net Working Capital	₹ 5,40,000
Bank overdraft	₹ 1,00,000
Fixed Assets to Proprietary ratio	0.75
Reserves and Surplus	₹ 4,80,000
Current ratio	2.5
Liquid ratio (Quick Ratio)	1.5

You are required to PREPARE a summarised Balance Sheet as of 31st March 2022 assuming that there is no long-term debt. **(5 Marks)**

(c) A new project "Ambar" requires an initial outlay of ₹ 4,50,000. The company uses certainty equivalent method approach to evaluate the project. The risk-free rate is 7%. Following information is available:

Year	Cash Flow After Tax (₹)	Certainty Equivalent Coefficient
1	1,50,000	0.90
2	2,25,000	0.80
3	1,75,000	0.58
4	1,50,000	0.56
5	70,000	0.50

PV Factor at 7%

Year	1	2	3	4	5
PV Factor	0.935	0.873	0.816	0.763	0.713

Is investment in the project beneficial based on above information? **(5 Marks)**

(d) ABC Company's equity share is quoted in the market at ₹ 30 per share currently. The company pays a dividend of ₹ 3 per share and the investor's market expects a growth rate of 7% per year.

You are required to:

(i) CALCULATE the company's cost of equity capital.

(ii) If the company issues 10% debentures of face value of ₹ 100 each and realises ₹ 95 per debenture while the debentures are redeemable after 10 years at a premium of 10%, CALCULATE cost of debenture using YTM?

Assume Tax Rate to be 50%. **(5 Marks)**

2. ZX Ltd. has a paid-up share capital of ₹ 2,00,00,000, face value of ₹ 100 each. The current market price of the shares is ₹ 100 each. The Board of Directors of the company has an agenda of meeting to pay a dividend of 50% to its shareholders. The company expects a net income of ₹ 1,50,00,000 at the end of the current financial year. Company also plans for a capital expenditure for the next financial year for a cost of ₹ 1,90,00,000, which can be financed through retained earnings and issue of new equity shares.

Company's desired rate of investment is 15%.

Required:

Following the Modigliani- Miller (MM) Hypothesis, DETERMINE value of the company when:

(i) It does not pay dividend and

(ii) It does pay dividend **(10 Marks)**

3. Following are the selected financial information of A Ltd. and B Ltd. for the current Financial Year:

	A Ltd.	B Ltd.
Variable Cost Ratio	60%	50%
Interest	₹ 30,000	₹ 1,20,000
Operating Leverage	6	3
Financial Leverage	4	3
Tax Rate	30%	30%

You are required to FIND out:

(i) EBIT

(ii) Sales

(iii) Fixed Cost

(iv) Identify the company which is better placed with reasons based on leverages. **(10 Marks)**

4. A company needs ₹ 42,50,000 for the construction of a new plant. The following three plans are feasible:

I The company may issue 4,25,000 equity shares at ₹ 10 per share.

II The company may issue 2,12,500 equity shares at ₹ 10 per share and 21,250 debentures of ₹ 100 denominations bearing an 8% rate of interest.

III The company may issue 2,12,500 equity shares at ₹ 10 per share and 21,250 cumulative preference shares at ₹ 100 per share bearing an 8% rate of dividend.

(i) The company's earnings before interest and taxes are ₹ 75,000, ₹ 1,50,000, ₹ 3,00,000, ₹ 4,50,000 and ₹ 7,50,000. DETERMINE earnings per share under each of three financial plans? Assume a corporate income tax rate of 40%.

(ii) IDENTIFY which alternative would you recommend and why?

(iii) DETERMINE the EBIT-EPS indifference points by formulae between Financing Plan I and Plan II and Plan I and Plan III. **(10 Marks)**

5. A firm can make investment in either of the following two projects. The firm anticipates its cost of capital to be 10%. The pre-tax cash flows of the projects for five years are as follows:

Year	0	1	2	3	4	5
Project A (₹)	(3,00,000)	55,000	1,20,000	1,30,000	1,05,000	40,000
Project 8 (₹)	(3,00,000)	3,18,000	20,000	20,000	8,000	6,000

Ignore Taxation.

An amount of ₹ 45,000 will be spent on account of sales promotion in year 3 in case of Project A. This has not been considered in calculation of pre-tax cash flows.

The discount factors are as under:

Year	0	1	2	3	4	5
PVF (10%)	1	0.91	0.83	0.75	0.68	0.62

You are required to calculate for each project:

(i) The payback period

(ii) The discounted payback period

(iii) Desirability factor

(iv) Net Present Value **(10 Marks)**

6. (a) EXPLAIN the difference between Business risk and financial risk. **(4 Marks)**

(b) EXPLAIN in brief the features of Commercial Papers. **(4 Marks)**

(c) EXPLAIN in short, the term Letter of Credit. **(2 Marks)**

OR

"Financing a business through borrowing is cheaper than using equity." Briefly EXPLAIN.

Test Series: September 2023

MOCK TEST PAPER – 1

INTERMEDIATE : GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A: FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/ HINTS

1. (a) Statement showing the EPS under the four plans

	Plan A	Plan B	Plan C	Plan D
Equity share capital	₹ 8,00,000	₹ 6,00,000	₹ 5,00,000	₹ 6,00,000
8% Pref. Share capital	-	-	-	₹ 2,00,000
Borrowing @ 10%	-	₹ 2,00,000	₹ 3,00,000	-
	₹ 8,00,000	₹ 8,00,000	₹ 8,00,000	₹ 8,00,000
E.B.I.T	₹ 1,50,000	₹ 1,50,000	₹ 1,50,000	₹ 1,50,000
Less: Interest @ 10%		₹ 20,000	₹ 30,000	
E.B.T	₹ 1,50,000	₹ 1,30,000	₹1,20,000	₹ 1,50,000
Less: Tax	₹ 75,000	₹65,000	₹60,000	₹ 75,000
Less: Pref Divided				₹ 16,000
Earnings available to equity share holders	₹ 75,000	₹ 65,000	₹ 60,000	₹ 59,000
No.of equity shares (₹100)	8,000	6,000	5,000	6,000
Earning per share	**₹ 9.38**	**₹ 10.83**	**₹ 12.00**	**₹ 9.83**

Plan C given the highest EPS and therefore to be accepted.

(b) Working notes:

(i) Computation of Current Assets and Current Liabilities

$$\frac{\text{Current assets}}{\text{Current liabilities}} = 2.5$$

Current assets = 2.5 Current liabilities

Now, Working capital = Current assets – Current liabilities

₹ 5,40,000 = 2.5 Current liability – Current liability

Or 1.5 Current liability = ₹ 5,40,000

∴ Current Liabilities = ₹ 3,60,000

So, Current Assets = ₹ 3,60,000 × 2.5 = ₹ 9,00,000

(ii) Computation of Inventories

$$\text{Liquid ratio} = \frac{\text{Liquid assets}}{\text{Current liabilities}}$$

$$1.5 = \frac{\text{Current assets - Inventories}}{₹\ 3,60,000}$$

1.5 × ₹ 3, 60,000 = ₹ 9,00,000 – Inventories

Inventories =₹ 9,00,000 – ₹ 5,40,000 = ₹ 3,60,000

(iii) Computation of Proprietary fund; Fixed assets; Capital and Sundry creditors

Fixed Asset to Proprietary ratio $= \frac{\text{Fixed assets}}{\text{Proprietary fund}} = 0.75$

∴ Fixed Assets = 0.75 Proprietary fund

Proprietary fund = Fixed Assets + Net Working Capital - Long Term Debt

= 0.75 Proprietary fund + ₹ 5,40,000 - 0

∴ Proprietary fund = ₹ 21,60,000

And Fixed Assets = 0.75 proprietary fund

= 0.75 × ₹ 21,60,000 = ₹ 16,20,000

Capital = Proprietary fund – Reserves & Surplus

= ₹ 21,60,000 – ₹ 4,80,000 = ₹ 16,80,000

Sundry Creditors = Current liabilities – Bank overdraft

= ₹ 3,60,000 – ₹ 1,00,000 = ₹ 2,60,000

Balance Sheet as of 31st March 2022

Liabilities	**₹**	**Assets**	**₹**
Capital	16,80,000	Fixed Assets	16,20,000
Reserves & Surplus	4,80,000	Inventories	3,60,000
Bank overdraft	1,00,000	Other Current Assets	5,40,000
Sundry creditors	2,60,000	(Balancing figure)	
	25,20,000		**25,20,000**

(c) Calculation of Net Present Value of the Project

Year	Cash Inflows After Tax (in ₹)	C.E.	Adjusted Cash Inflows (in ₹)	Present Value Factor	Present Value (in ₹)
1	1,50,000	0.90	1,35,000	0.935	1,26,225
2	2,25,000	0.80	1,80,000	0.873	1,57,140
3	1,75,000	0.58	1,01,500	0.816	82,824
4	1,50,000	0.56	84,000	0.763	64,092
5	70,000	0.50	35,000	0.713	24,955
Total Present Value of Cash Inflows					**4,55,236**
Less: Initial Investment or Cash Outflow required for "Ambar"					(4,50,000)
Net Present Value					**5,236**

Conclusion: As the Net Present Value of the project after considering the Certainty Equivalent factors is still positive, it may be advised to invest in project "Ambar".

(d) (i) Cost of Equity Capital (K_e):

$$K_e = \frac{\text{Expected dividend per share}\,(D_1)}{\text{Market price per share}\,(P_0)} + \text{Growth rate}\,(g)$$

$$= \frac{₹\ 3\times1.07}{₹\ 30} + 0.07 = 0.177 \text{ or } 17.7\%$$

(ii) Cost of Debenture (K_d):

Using Present Value method (YTM)

Identification of relevant cash flows

Year	Cash flows
0	Current market price (P_0) = ₹ 95
1 to 10	Interest net of tax [I(1-t)] = 10% of ₹ 100 (1 – 0.5) = ₹ 5
10	Redemption value (RV) = ₹ 100 (1.10) = ₹ 110

Calculation of Net Present Values (NPV) at two discount rates

Year	Cash flows (₹)	Discount factor @ 5% (L)	Present Value (₹)	Discount factor @ 10% (H)	Present Value (₹)
0	(95)	1.000	(95.00)	1.000	(95.00)
1 to 10	5	7.722	38.61	6.145	30.725
10	110	0.614	67.54	0.386	42.46
NPV			+11.15		-21.815

Calculation of IRR

$$IRR = L + \frac{NPV_L}{NPV_L - NPV_H}(H-L)$$

$$= 5\% + \frac{₹\,11.15}{₹\,11.15-(₹\,-21.815)}(10\%-5\%) = 5\% + \frac{₹\,55.75}{₹\,32.965} = 6.69\%$$

Therefore, K_d = 6.69%

2. As per MM Hypothesis, value of firm/ company is calculated as below:

$$V_f \text{ or } nP_0 = \frac{(n+\Delta n)P_1 - I + E}{(1+K_e)}$$

Where,

V_f = Value of firm in the beginning of the period

n = number of shares in the beginning of the period

Δn = number of shares issued to raise the funds required

I = Amount required for investment

E = total earnings during the period

(i) Value of the ZX Ltd. when dividends are not paid.

$$nP_o = \frac{(n+\Delta n)P_1 - I + E}{1+K_e}$$

$$nP_0 = \frac{\left(2,00,000 + \frac{40,00,000}{115}\right) \times ₹115 - Rs.1,90,00,000 + ₹1,50,00,000}{(1+0.15)}$$

$$= \frac{₹2,70,00,000 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)} = ₹\ 2,00,00,000$$

Working notes:

1. Price of share at the end of the period (P_1)

$$P_o = \frac{P_1 + D_1}{1+K_e}$$

$$100 = \frac{P_1 + 0}{1+0.15} \quad \text{or,} \quad P_1 = 115$$

2. Calculation of funds required for investment

Earnings	₹1,50,00,000
Dividend distributed	Nil
Fund available for investment	₹ 1,50,00,000
Total Investment	₹ 1,90,00,000
Balance Funds required	₹ 40,00,000

3. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{40,00,000}{115} \text{ shares}$$

(ii) Value of the ZX Ltd. when dividends are paid.

$$nP_o = \frac{(n+\Delta n)P_1 - I + E}{1+K_e}$$

$$nP_0 = \frac{\left(2,00,000 + \frac{1,40,00,000}{65}\right) \times ₹65 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)}$$

$$= \frac{₹2,70,00,000 - ₹1,90,00,000 + ₹1,50,00,000}{(1+0.15)} = ₹\ 2,00,00,000$$

Working notes:

4. Price of share at the end of the period (P_1)

$$P_o = \frac{P_1 + D_1}{1+K_e}$$

$$100 = \frac{P_1 + 50}{1+0.15} \quad \text{or,} \quad P_1 = ₹65$$

5. Calculation of funds required for investment

Earnings	₹ 1,50,00,000
Dividend distributed	₹ 1,00,00,000
Fund available for investment	₹ 50,00,000
Total Investment	₹ 1,90,00,000
Balance Funds required	₹ 1,40,00,000

6. Calculation of no. of shares required to be issued for balance fund

$$\text{No. of shares } (\Delta n) = \frac{\text{Funds required}}{\text{Price at end } (P_1)} = \frac{1,40,00,000}{65} = 2,15,385 \text{ shares(approx.)}$$

Note- *As per MM-hypothesis of dividend irrelevance, value of firm remains same irrespective of dividend paid. In the solution, there may be variation in value, which is due to rounding off error.*

3. Company A

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 4 $= \frac{\text{EBIT}}{\text{EBIT} - ₹\ 30,000}$

Or, 4 (EBIT – 30,000) = EBIT

Or, 3 EBIT = 1,20,000

Or, EBIT = 40,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$ Or, $6 = \frac{\text{Contribution}}{₹\ 40,000}$

Or Contribution = ₹ 2, 40,000

$\text{Sales} = \frac{\text{Contribution}}{\text{P/V Ratio (1 - variable cost ratio)}} = \frac{₹\ 2,40,000}{40\%} = ₹\ 6,00,000$

(iii) Fixed Cost = Contribution – EBIT

= ₹ 2, 40,000 – 40,000

Or Fixed cost = ₹ 2,00,000

Company B

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 3 $= \frac{\text{EBIT}}{\text{EBIT} - 1,20,000}$

Or, 3 (EBIT – ₹1,20,000) = EBIT

Or, 3 EBIT - ₹3,60,000 = EBIT

Or, 2 EBIT = ₹ 3,60,000

Or, EBIT = ₹ 1,80,000

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

Or, 3 $= \frac{\text{Contribution}}{₹1,80,000}$

Or, Contribution = ₹ 5,40,000

Sales = $\frac{\text{Contribution}}{\text{P/V Ratio (1 - variable cost ratio)}}$ $= \frac{₹\ 5,40,000}{50\%}$ = ₹ 10,80,000

(iii) Fixed Cost = Contribution – EBIT

= ₹ 5,40,000 – ₹ 1,80,000

Or, Fixed cost = ₹ 3,60,000

Income Statements of Company A and Company B

	Company A (₹)	Company B (₹)
Sales	6,00,000	10,80,000
Less: Variable cost	3,60,000	5,40,000
Contribution	2,40,000	5,40,000
Less: Fixed Cost	2,00,000	3,60,000
Earnings before interest and tax (EBIT)	40,000	1,80,000
Less: Interest	30,000	1,20,000
Earnings before tax (EBT)	10,000	60,000
Less: Tax @ 30%	3,000	18,000
Earnings after tax (EAT)	7,000	42,000

Comment based on Leverage

Comment based on leverage – Company B is better than company A of the following reasons:

- Capacity of Company B to meet interest liability is better than that of companies A (from EBIT/Interest ratio)

[A = $\frac{₹40,000}{₹30,000}$ = 1.33, B = $\frac{₹1,80,000}{₹1,20,000}$ = 1.50]

Company B has the least financial risk as the total risk (business and financial) of company B is lower (combined leverage of Company A – 24 and Company B- 9)

4. (i) Computation of EPS under three-financial plans.

Plan I: Equity Financing

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	75,000	1,50,000	3,00,000	4,50,000	7,50,000
Interest	0	0	0	0	0
EBT	75,000	1,50,000	3,00,000	4,50,000	7,50,000
Less: Tax @ 40%	30,000	60,000	1,20,000	1,80,000	3,00,000
PAT	45,000	90,000	1,80,000	2,70,000	4,50,000

No. of equity shares	4,25,000	4,25,000	4,25,000	4,25,000	4,25,000
EPS	0.11	0.21	0.42	0.64	1.06

Plan II: Debt – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	75,000	1,50,000	3,00,000	4,50,000	7,50,000
Less: Interest	1,70,000	1,70,000	1,70,000	1,70,000	1,70,000
EBT	(95,000)	(20,000)	1,30,000	2,80,000	5,80,000
Less: Tax @ 40%	38,000*	8000*	52,000	1,12,000	2,32,000
PAT	(57,000)	(12,000)	78,000	1,68,000	3,48,000
No. of equity shares	2,12,500	2,12,500	2,12,500	2,12,500	2,12,500
EPS	(₹ 0.27)	(0.056)	0.37	0.79	1.64

* The Company can set off losses against the overall business profit or may carry forward it to next financial years.

Plan III: Preference Shares – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	75,000	1,50,000	3,00,000	4,50,000	7,50,000
Less: Interest	0	0	0	0	0
EBT	75,000	1,50,000	3,00,000	4,50,000	7,50,000
Less: Tax @ 40%	30,000	60,000	1,20,000	1,80,000	3,00,000
PAT	45,000	90,000	1,80,000	2,70,000	4,50,000
Less: Pref. dividend	1,70,000*	1,70,000*	1,70,000	1,70,000	1,70,000
PAT after Pref. dividend.	(1,25,000)	(80,000)	10,000	1,00,000	2,80,000
No. of Equity shares	2,12,500	2,12,500	2,12,500	2,12,500	2,12,500
EPS	(0.59)	(0.38)	0.05	0.47	1.32

* In case of cumulative preference shares, the company must pay cumulative dividend to preference shareholders, when company earns sufficient profits.

(ii) From the above EPS computations tables under the three financial plans we can see that when EBIT is ₹ 4,50,000 or more, Plan II: Debt-Equity mix is preferable over the Plan I and Plan III, as rate of EPS is more under this plan. On the other hand, an EBIT of less than ₹4,50,000, Plan I: Equity Financing has higher EPS than Plan II and Plan III. Plan III Preference Share-Equity mix is not acceptable at any level of EBIT, as EPS under this plan is lower.

The choice of the financing plan will depend on the performance of the company and other macro-economic conditions. If the company is expected to have higher operating profit Plan II: Debt – Equity Mix is preferable. Moreover, debt financing gives more benefit due to availability of tax shield.

(iii) EBIT – EPS Indifference point: Plan I and Plan II

$$\frac{EBIT_1 \times (1-t)}{\text{No. of equity shares } (N_1)} = \frac{(EBIT_2 - \text{Interest}) \times (1-t)}{\text{No. of equity shares } (N_2)}$$

$$\frac{EBIT(1-0.40)}{4,25,000\ shares} = \frac{(EBIT - ₹1,70,000)\times(1-0.40)}{2,12,500\ shares}$$

$$0.6\ EBIT = 1.2\ EBIT - ₹2,04,000$$

$$EBIT = \frac{₹2,04,000}{0.6} = ₹\ 3,40,000$$

Indifference points between Plan I and Plan II is ₹ 3,40,000

EBIT – EPS Indifference Point: Plan I and Plan III

$$\frac{EBIT_1\times(1-t)}{No.of\ equity\ shares\ (N_1)} = \frac{EBIT_3\times(1-t)-Pref.dividend}{No.of\ equity\ shares\ (N_3)}$$

$$\frac{EBIT_1(1-0.40)}{4,25,000\ shares} = \frac{EBIT_3(1-0.40)-Rs.1,70,000}{2,12,500\ shares}$$

$$0.6\ EBIT = 1.2\ EBIT - ₹\ 3,40,000$$

$$EBIT = \frac{₹3,40,000}{0.6} = ₹\ 5,66,667$$

Indifference points between Plan I and Plan III is ₹ 5,66,667.

5. Calculation of Present Value of cash flows

Year	PV factor @ 10%	Project A		Project B	
		Cash flows (₹)	Discounted Cash flows	Cash flows (₹)	Discounted Cash flows
0	1.00	(3,00,000)	(3,00,000)	(3,00,000)	(3,00,000)
1	0.91	55,000	50,050	3,18,000	2,89,380
2	0.83	1,20,000	99,600	20,000	16,600
3	0.75	85,000(1,30,000-45,000)	63,750	20,000	15,000
4	0.68	1,05,000	71,400	8,000	5,440
5	0.62	40,000	24,800	6,000	3,720
Net Present Value			**9,600**		**30,140**

(i) The Payback period of the projects:

Project-A: The cumulative cash inflows up-to year 3 is ₹2,60,000 and remaining amount required to equate the cash outflow is ₹ 40,000 i.e. (₹ 3,00,000 – ₹ 2,60,000) which will be recovered from year-4 cash inflow. Hence, Payback period will be calculated as below:

$$3\ years + \frac{40,000}{1,05,000} = 3.381\ years\ or\ 3\ years,\ 4\ months,\ 9\ days\ (approx.)$$

Project-B: The cash inflow in year-1 is ₹ 3,18,000 and the amount required to equate the cash outflow is ₹ 3,00,000, which can be recovered in a period less than a year. Hence, Payback period will be calculated as below:

$$\frac{3,00,000}{3,18,000} = 0.943\ years\ or\ 11\ months$$

(ii) Discounted Payback period for the projects:

Project-A: The cumulative discounted cash inflows up-to year 4 is ₹ 2,84,800 and remaining amount required to equate the cash outflow is ₹ 15,200 i.e. (₹ 3,00,000 – ₹ 2,84,800) which will be recovered from year-5 cash inflow. Hence, Payback period will be calculated as below:

$$4 \text{ years} + \frac{15,200}{24,800} = 4.613 \text{ years or 4 years, 2 months, and 11 days}$$

Project-B: The cash inflow in year-1 is ₹2,89,380 and remaining amount required to equate the cash outflow is ₹ 10,620 i.e. (₹ 3,00,000 – ₹ 2,89,380) which will be recovered from year-2 cash inflow. Hence, Payback period will be calculated as below:

$$1 \text{ year} + \frac{10,620}{16,600} = 1.640 \text{ years or 1 Year, 7 months and 23 days.}$$

(iii) Desirability factor of the projects

$$\text{Desirability Factor (Profitability Index)} = \frac{\text{Discounted value Cash Inflows}}{\text{Discounted value of Cash Outflows}}$$

$$\textbf{Project A} = \frac{3,09,600}{3,00,000} = 1.032$$

$$\textbf{Project B} = \frac{3,30,140}{3,00,000} = 1.100$$

(iv) Net Present Value (NPV) of the projects:

Please refer the above table.

Project A- ₹ 9,600

Project B- ₹ 30,140

6. (a) Business Risk and Financial Risk

Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm must operate, and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

On the other hand, financial risk refers to the additional risk placed on firm's shareholders because of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

(b) Commercial Paper: A Commercial Paper is an unsecured money market instrument issued in the form of a promissory note. The Reserve Bank of India introduced the commercial paper scheme in the year 1989 with a view to enabling highly rated corporate borrowers to diversify their sources of short- term borrowings and to provide an additional instrument to investors. Subsequently, in addition to the Corporate, Primary Dealers and All India Financial Institutions have also been allowed to issue Commercial Papers. Commercial papers are issued in denominations of ₹ 5 lakhs or multiples thereof and the interest rate is generally linked to the yield on the one-year government bond.

All eligible issuers are required to get the credit rating from Credit Rating Information Services of India Ltd, (CRISIL), or the Investment Information and Credit Rating Agency of India Ltd (ICRA) or the Credit Analysis and Research Ltd (CARE) or the FITCH Ratings India Pvt. Ltd or any such other credit rating agency as is specified by the Reserve Bank of India.

(c) Letter of Credit: It is an arrangement by which the issuing bank on the instructions of a customer or on its own behalf undertakes to pay or accept or negotiate or authorizes another bank to do so against stipulated documents subject to compliance with specified terms and conditions.

Or

"Financing a business through borrowing is cheaper than using equity".

(i) Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.

(ii) Issue of new equity dilutes existing control pattern while borrowing does not result in dilution of control.

(iii) In a period of rising prices, borrowing is advantageous. The fixed monetary outgo decreases in real terms as the price level increases.

Test Series: October, 2023

MOCK TEST PAPER - 2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A: FINANCIAL MANAGEMENT

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answers in Hindi will not be valued.

*Question No. **1** is compulsory.*

*Attempt any **four** questions from the remaining **five** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours (Total time for 8A and 8B) **Maximum Marks – 60**

1. Answer the following:

(a) The capital structure of AB Ltd. for the year ended 31st March, 2023 consisted as follows:

Particulars	Amount in ₹
Equity share capital (face value ₹ 100 each)	20,00,000
10% debentures (₹ 100 each)	10,00,000

During the year 2022-23, sales decreased to 2,00,000 units as compared to 2,20,000 units in the previous year. However, the selling price stood at ₹ 10 per unit and variable cost at ₹ 6 per unit for both the years. The fixed expenses were at ₹ 4,00,000 p.a. and the income tax rate is 30%.

You are required to CALCULATE the following:

(i) The degree of financial leverage at 2,20,000 units and 2,00,000 units.

(ii) The degree of operating leverage at 2,20,000 units and 2,00,000 units.

(iii) The percentage change in EPS.

(b) PQR Ltd. is a blue-chip company listed in NSE in India with a face value of ₹ 100 per share. The company is expected to grow @ 15% p.a. for next four years then 5% for an indefinite period. The shareholders expect 20% return on their share investments. Company paid ₹ 150 as dividend per share for the current Financial Year. The shares of the company traded at an average price of ₹ 2,052 on last day. FIND out the intrinsic value per share and state whether shares are overpriced or underpriced.

(c) A company proposes to install a machine involving a Capital Cost of ₹72,00,000. The life of the machine is 5 years and its salvage value at the end of the life is nil. The machine will produce the net operating income after depreciation of ₹13,60,000 per annum. The Company's tax rate is 35%.

The Net Present Value factors for 5 years are as under:

Discounting Rate	:	14	15	16	17	18	19
Cumulative factor	:	3.43	3.35	3.27	3.20	3.13	3.06

You are required to COMPUTE the internal rate of return (IRR) of the proposal.

(d) ABC Ltd. has total sales of 12,00,000 all of which are credit sales. It has a gross profit ratio of 20% on sales and a current ratio of 2. The company's current liabilities are ₹ 3,00,000. Further, it has inventories of ₹ 1,00,000, marketable securities of ₹ 70,000 and cash of ₹ 50,000. From the above information:

(i) CALCULATE the average inventory if the expected inventory turnover ratio is three times?

(ii) Also CALCULATE the average collection period if the opening balance of debtors is expected to be ₹ 1,20,000.

Assume 360 days a year. **[4 × 5 Marks = 20 Marks]**

2. A Company earns a profit of ₹7,00,000 per annum after meeting its interest liability of ₹1,00,000 on 10% debentures. The Tax rate is 40%. The number of Equity Shares of ₹10 each are 1,00,000 and the retained earnings amount to ₹20,00,000. The company proposes to take up an expansion scheme for which a sum of ₹10,00,000 is required. It is anticipated that after expansion, the company will be able to achieve the same return on investment as at present. The funds required for expansion can be raised either through debt at the rate of 12% or by issuing equity shares at par.

Required:

(i) COMPUTE the Earnings per Share (EPS), if:

- The additional funds were raised as debt
- The additional funds were raised by issue of equity shares.

(ii) ADVISE the company as to which source of finance is preferable. **[10 Marks]**

3. Q Ltd. has the following capital structure at book-value as on 31st March 2022:

Particulars	(₹)
Equity share capital (10,00,000 shares)	4,00,00,000
12% Preference shares	80,00,000
11% Debentures	2,00,00,000
	6,80,00,000

The equity shares of the company are sold for ₹ 400. It is expected that the company will pay next year a dividend of ₹ 20 per equity share, which is expected to grow by 5% p.a. forever. Assume a 30% corporate tax rate.

Required:

(i) COMPUTE weighted average cost of capital (WACC) of the company based on the existing capital structure.

(ii) COMPUTE the new WACC, if the company raises an additional ₹ 50 lakhs debt by issuing 12% debentures. This would result in increasing the expected equity dividend to ₹ 25 and leave the growth rate unchanged, but the price of equity share will fall to ₹ 300 per share. **[10 Marks]**

4. A&R Ltd. has undertaken a project which has an initial investment of ₹2,000 lakhs in plant & machinery and ₹ 600 lakhs for working capital. The plant & machinery would have a salvage value of ₹ 525 lakhs at the end of the fifth year. The plant & machinery would depreciate at the rate of 20% p.a. on the WDV method. The other details of the project for the five-year period are as follows:

Sales	10,00,000 units p.a.
Selling price per unit	₹500
Variable cost	50% of selling price
Fixed overheads (excluding depreciation)	₹400 lakh p.a.

Corporate tax rate	30%
Rate of interest on bank loan	12%
After tax required rate of return	15%

Required:

(i) CALCULATE net present value (NPV) of the project and DETERMINE the viability of the project.

(ii) DETERMINE the sensitivity of project's NPV under each of the following condition:

a. Decrease in selling price by 10%.

b. Increase in cost of plant & machinery by 10%.

PV factor	Year-1	Year-2	Year-3	Year-4	Year-5
12%	0.892	0.797	0.711	0.635	0.567
15%	0.869	0.756	0.657	0.571	0.497

[10 Marks]

5. (a) Cost sheet of X&Y Ltd. provides the following particulars:

	Amount per unit (₹)
Raw materials cost	260.00
Direct labour cost	125.00
Overheads cost	200.00
Total cost	585.00
Profit	75.00
Selling Price	660.00

The Company keeps raw material in stock, on an average for four weeks; work-in-progress, on an average for one week; and finished goods in stock, on an average for two weeks.

The credit allowed by suppliers is three weeks and company allow four weeks credit to its debtors. The lag in payment of wages is one week and lag in payment of overhead expenses is two weeks.

The Company sells one-fifth of the output against cash and maintains cash-in-hand and at bank put together at ₹ 2,70,000.

Required:

PREPARE a statement showing estimate of Working Capital needed to finance an activity level of 2,40,000 units of production. Assume that production is carried on evenly throughout the year, and wages and overheads accrue similarly. Work-in-progress stock is 75% complete in all respects.

[8 Marks]

(b) The following information is provided by the Shrishti Ltd. for the year ending 31st March 2022.

Raw Material storage period	54 days
Work in progress conversion period	20 days
Finished Goods storage period	22 days
Debt Collection period	74 days
Creditors' payment period	25 days

		Annual Operating Cost	45 crore
		(Including depreciation of ₹42,00,000)	
		(1 year = 360 days)	

You are required to CALCULATE Operating Cycle period and Number of Operating Cycles in a year. **[2 Marks]**

6. (a) DESCRIBE the different types of packing credit. **[4 Marks]**

(b) EXPLAIN the concept of risk adjusted discount rate. **[4 Marks]**

(c) Write a short note on role of finance controller.

Or

DISCUSS the dividend-price approach to estimate cost of equity capital. **[2 Marks]**

Test Series: October 2023

MOCK TEST PAPER - 2

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A: FINANCIAL MANAGEMENT

Suggested Answers/ Hints

1. (a) Income Statement with required calculations

Particulars	**(₹)**	**(₹)**
Sales in units	2,20,000	2,00,000
Sales Value	22,00,000	20,00,000
Variable Cost	(13,20,000)	(12,00,000)
Contribution	8,80,000	8,00,000
Fixed expenses	(4,00,000)	(4,00,000)
EBIT	4,80,000	4,00,000
Debenture Interest	(1,00,000)	(1,00,000)
EBT	3,80,000	3,00,000
Tax @ 30%	(1,14,000)	(90,000)
Profit after tax (PAT)	2,66,000	2,10,000
No. of shares	20,000	20,000
(i) Financial Leverage $= \frac{EBIT}{EBT}$	$= \frac{₹\,4,80,000}{₹\,3,80,000}$ = 1.26	$= \frac{₹\,4,00,000}{₹\,3,00,000}$ = 1.33
(i) Operating Leverage $= \frac{Contribution}{EBIT}$	$= \frac{₹\,8,80,000}{₹\,4,80,000}$ = 1.83	$= \frac{₹\,8,00,000}{₹\,4,00,000}$ = 2
(iii) Earnings per share (EPS) $= \frac{PAT}{No.\ of\ shares}$	$= \frac{₹\,2,66,000}{20,000}$ = ₹ 13.3	$= \frac{₹\,2,10,000}{20,000}$ = ₹ 10.5
Decrease in EPS	= ₹ 13.3 – ₹ 10.5 = ₹ 2.8	
% decrease in EPS	$= \frac{2.8}{13.3} \times 100 = 21.05\%$	

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

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

Where,

P = Price per share

K_e = Required rate of return on equity

g = Growth rate

$$P = \frac{₹150x1.15}{(1+0.2)^1} + \frac{₹172.5x1.15}{(1+0.2)^2} + \frac{₹198.38x1.15}{(1+0.2)^3} + \frac{₹228.13x1.15}{(1+0.2)^4} + \frac{₹262.35x1.05}{(0.2-0.05)^1} \times \frac{1}{(1+0.2)^4}$$

P = 143.75 + 137.76 + 132.02 + 126.52 + 885.63 = ₹ 1425.68

Intrinsic value of share is ₹ 1425.68 as compared to latest market price of ₹ 2052. Market price of a share is overpriced by ₹ 626.32.

(c)

Computation of cash inflow per annum	₹
Net operating income per annum	13,60,000
Less: Tax @ 35%	4,76,000
Profit after tax	8,84,000
Add: Depreciation (₹72,00,000 / 5 years)	14,40,000
Cash inflow	23,24,000

The IRR of the investment can be found as follows:

NPV = – ₹ 72,00,000 + ₹ 23,24,000 ($PVAF_5$, r) = 0

or PVA F_5 r (Cumulative factor) = $\frac{₹72,00,000}{₹23,24,000}$ = 3.09

Computation of Internal Rate of Return (IRR)

Discounting rate	15%	19%
Cumulative factor	3.35	3.06
Total NPV (₹)	77,85,400	71,11,440
	(₹23,24,000 × 3.35)	(₹23,24,000 × 3.06)
Internal outlay (₹)	72,00,000	72,00,000
Surplus (Deficit) (₹)	5,85,400	(88,560)

$$IRR = LR + \frac{NPV\ at\ LR}{NPV\ at\ LR - NPV\ at\ HR} \times (HR - LR)$$

$$= 15\% + \frac{5,85,400}{5,85,400 - (-88,560)} \times (19\% - 15\%)$$

= 15% +3.47 =18.47%

Note: Lower rate can be 18% or less than 18%. However, there will be no change in the final answer.

(d) (i) Calculation of Average Inventory

Since gross profit is 20% of sales, the cost of goods sold should be 80% of the sales.

Cost of goods sold = 12,00,000 x $\frac{80}{100}$ = 9,60,000

$$Inventory\ Turnover = \frac{Cost\ of\ goods\ sold}{Average\ Inventory}$$

$$3 = \frac{9,60,000}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{9,60,000}{3} = 3,20,000$$

(ii) Calculation of Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Average Receivables}}{\text{Credit Sales}} \times 360$$

$$\text{Where, Average Receivables} = \frac{\text{Opening Receivables} + \text{Closing Receivables}}{2}$$

Calculation of Closing balance of Receivables

	₹	₹
Current Assets (2 x 3,00,000)		6,00,000
Less: Inventories	1,00,000	
Less: Marketable Securities	70,000	
Less: Cash	50,000	2,20,000
Receivables (Closing Balance)		**3,80,000**

$$\text{Now, Average Receivables} = \frac{1,20,000 + 3,80,000}{2} = 2,50,000$$

$$\text{So, Average Collection Period} = \frac{2,50,000}{12,00,000} \times 360 = 75 \text{ days}$$

2. Working Notes:

1. Capital employed before expansion plan:

	(₹)
Equity shares (₹10 × 1,00,000 shares)	10,00,000
Debentures {(₹1,00,000/10) × 100}	10,00,000
Retained earnings	20,00,000
Total capital employed	40,00,000

2. Earnings before the payment of interest and tax (EBIT):

	(₹)
Profit (EBT)	7,00,000
Add: Interest	1,00,000
EBIT	8,00,000

3. Return on Capital Employed (ROCE):

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital employed}} \times 100 = \frac{\text{Rs.8,00,000}}{\text{Rs.40,00,000}} \times 100 = 20\%$$

4. Earnings before interest and tax (EBIT) after expansion scheme:

After expansion, capital employed = ₹40,00,000 + ₹10,00,000

= ₹ 50,00,000

Desired EBIT = 20% × ₹50,00,000 = ₹10,00,000

(i) Computation of Earnings Per Share (EPS) under the following options:

	Present situation	Expansion scheme Additional funds raised as	
		Debt	Equity
	(₹)	(₹)	(₹)
Earnings before Interest and Tax (EBIT)	8,00,000	10,00,000	10,00,000
Less: Interest - Old capital	1,00,000	1,00,000	1,00,000
- New capital	--	1,00,000 (₹10,00,000 × 10%)	--
Earnings before Tax (EBT)	7,00,000	8,00,000	9,00,000
Less: Tax (40% of EBT)	2,80,000	3,20,000	3,60,000
PAT	4,20,000	4,80,000	5,40,000
No. of shares outstanding	1,00,000	1,00,000	2,00,000
Earnings per Share (EPS)	4.20 $\left(\frac{₹4,20,000}{1,00,000}\right)$	4.80 $\left(\frac{₹4,80,000}{1,00,000}\right)$	2.70 $\left(\frac{₹5,40,000}{2,00,000}\right)$

(ii) Advise to the Company: When the expansion scheme is financed by additional debt, the EPS is higher. Hence, the company should finance the expansion scheme by raising debt.

3. (i) Computation of Weighted Average Cost of Capital based on existing capital structure

Source of Capital	Existing Capital structure (₹)	Weights (a)	After tax cost of capital (%) (b)	WACC (%) (a) × (b)
Equity share capital (W.N.1)	4,00,00,000	0.588	10.00	5.88
12% Preference share capital	80,00,000	0.118	12.00	1.42
11% Debentures (W.N.2)	2,00,00,000	0.294	7.70	2.26
Total	6,80,00,000	1.000		9.56

Working Notes:

1. Cost of Equity Capital:

$$K_e = \frac{\text{Expected dividend}(D_1)}{\text{Current Market Price}(P_0)} + \text{Growth}(g)$$

$$= \frac{20}{400} + 0.05$$

$$= 10\%$$

2. Cost of 10% Debentures

$$K_d = \frac{\text{Interest}(1-t)}{\text{Net proceeds}}$$

$$= \frac{22,00,000\,(1-0.30)}{2,00,00,000}$$

= 0.077 or 7.7%

(ii) Computation of Weighted Average Cost of Capital based on new capital structure

Source of Capital	New Capital structure (₹)	Weights (a)	After tax cost of capital (%) (b)	WACC (%) (a) x (b)
Equity share capital (W.N.3)	4,00,00,000	0.548	13.33	7.30
12% Preference share capital	80,00,000	0.110	12.00	1.32
11% Debentures (W.N.2)	2,00,00,000	0.274	7.70	2.11
12% Debentures (W.N.4)	50,00,000	0.068	8.40	0.57
Total	7,30,00,000	1.000		11.30

Working Notes:

3. Cost of Equity Capital:

$$K_e = \frac{25}{300} + 0.05$$

= 13.33%

4. Cost of 12% Debentures

$$K_d = \frac{6,00,000\,(1-0.30)}{50,00,000}$$

= 0.084 or 8.4%

4. (i) Calculation of Net Present Value (NPV):

	Year-1	Year-2	Year-3	Year-4	Year-5
Sales volume (Qty. in lakh)	10	10	10	10	10
Contribution per unit (₹) (Selling price – variable cost)	250	250	250	250	250
Total contribution (₹in lakh)	2,500	2,500	2,500	2,500	2,500
Less: Fixed overheads (₹ In lakh)	400	400	400	400	400
PBDT	2,100	2,100	2,100	2,100	2,100
Less: Depreciation (₹ in lakh) (Working note 1)	400	320	256	204.8	163.84
PBT	1,700	1,780	1,844	1,895.2	1936.16
Less: Tax @ 30%	510	534	553.2	568.56	580.85
PAT	1,190	1,246	1,290.8	1,326.64	1,355.31
Add: Depreciation	400	320	256	204.8	163.84
Add: Salvage value of plant & machinery	-	-	-	-	525
Add: Working capital	-	-	-	-	600

Net Cash inflow	1,590	1,566	1,546.8	1,531.44	2,644.15
P.V factor @15%	0.869	0.756	0.657	0.571	0.497
P.V of cash inflows	1,381.71	1,183.90	1,016.24	874.45	1,314.14

Net Present Value = P.V of cash inflows – P.V of cash outflows

= ₹ (1383.71+1183.9+1016.24+874.45+1314.14) – (₹2,000 + ₹ 600)

= 5772.44 – 2600 = ₹3172.44 lakh

The NPV of the project is positive, hence, the project is viable.

Working note 1:

	Year-1 (₹ in lakhs)	Year-2 (₹ in lakhs)	Year-3 (₹ in lakhs)	Year-4 (₹ in lakhs)	Year-5 (₹ in lakhs)
Opening balance	2,000	1,600	1,280	1024	819.20
Depreciation @20%	400	320	256	204.8	163.84
Closing WDV	1,600	1,280	1024	819.2	655.36

(ii) Determination of sensitivity of NPV w.r.t.

a. Decrease in selling price by 10%

	Year-1	Year-2	Year-3	Year-4	Year-5
Sales volume (Qty. in lakh)	10	10	10	10	10
New Selling price	450	450	450	450	450
Variable cost	250	250	250	250	250
Contribution per unit (₹) (Selling price – variable cost)	200	200	200	200	200
Total contribution (₹in lakh)	2,000	2,000	2,000	2,000	2,000
Less: Fixed overheads (₹ In lakh)	400	400	400	400	400
PBDT	1,600	1,600	1,600	1,600	1,600
Less: Depreciation (₹ in lakh) (Working note 1)	400	320	256	204.8	163.84
PBT	1,200	1,280	1,344	1,395.2	1,436.16
Less: Tax @ 30%	360	384	403.2	418.56	430.85
PAT	840	896	940.8	976.64	1,005.31
Add: Depreciation	400	320	256	204.8	163.84
Add: Salvage value of plant & machinery	-	-	-	-	525
Add: Working capital	-	-	-	-	600
Net Cash inflow	1,240	1,216	1,196.8	1,181.44	2,294.15
P.V factor @15%	0.869	0.756	0.657	0.571	0.497

P.V of cash inflows	1,077.56	919.30	786.30	674.60	1,140.19

NPV = ₹ (1,077.56+919.30+786.30+674.60+1,140.19) – (₹ 2,000 + ₹ 600)

= ₹ 4,597.95 – ₹ 2,600 = ₹1,997.95 lakh

10% reduction in selling price reduces the NPV by 37.02% (3172.44-1997.95/3172.44)

b. Increase in project cost by 10%

	Year-1	Year-2	Year-3	Year-4	Year-5
PBDT	2,100	2,100	2,100	2,100	2,100
Less: Depreciation (₹ in lakh) (Working note 2)	440	352	281.6	225.28	180.22
PBT	1660	1748	1818.4	1874.72	1919.78
Less: Tax @ 30%	498	524.40	545.52	562.42	575.93
PAT	1162	1223.6	1272.88	1312.30	1343.85
Add: Depreciation	440	352	281.60	225.28	180.22
Add: Salvage value of plant & machinery	-	-	-	-	525
Add: Working capital	-	-	-	-	600
Net Cash inflow	1,602	1,575.6	1,554.48	1,537.58	2,649.07
P.V factor @15%	0.869	0.756	0.657	0.571	0.497
P.V of cash inflows	1,392.14	1,191.15	1,021.29	877.96	1316.59

NPV = ₹ (1,392.14+1,191.15+1,021.29+877.96+1,316.59) – (₹ 2,200 + ₹ 600)

= ₹ 5,799.13 – ₹ 2,800 = ₹2,999.13 lakh

10% increase in project cost reduces the NPV only by 5.46% (3,172.44 - 2,999.13/3172.44)

Working note 2:

	Year-1	Year-2	Year-3	Year-4	Year-5
Opening balance	2,200	1,760	1408	1126.4	901.12
Depreciation @20%	440	352	281.6	225.28	180.22
Closing WDV	1,760	1408	1126.40	901.12	702.90

5 (a) Statement showing Estimate of Working Capital Needs

	(Amount in ₹)	(Amount in ₹)
A. Current Assets		
(i) Inventories:		
Raw material (4 weeks) $\left(\frac{2,40,000\,\text{units}\times₹260}{52\,\text{weeks}}\times 4\,\text{weeks}\right)$	48,00,000	
WIP Inventory (1 week) $\left(\frac{2,40,000\,\text{units}\times₹585}{52\,\text{weeks}}\times 1\,\text{week}\right)\times 0.75$	20,25,000	

Finished goods inventory (2 weeks) $\left(\frac{2,40,000\text{ units} \times ₹585}{52\text{ weeks}} \times 2\text{ weeks}\right)$	54,00,000	**1,22,25,000**
(ii) Receivables (Debtors) (4 weeks) $\left(\frac{2,40,000\text{ units} \times ₹585}{52\text{ weeks}} \times 4\text{ weeks}\right) \times \frac{4}{5}$		86,40,000
(iii) Cash and bank balance		2,70,000
Total Current Assets		2,11,35,000
B. Current Liabilities:		
(i) Payables (Creditors) for materials (3 weeks) $\left(\frac{2,40,000\text{ units} \times ₹260}{52\text{ weeks}} \times 3\text{ weeks}\right)$		36,00,000
(ii) Outstanding wages (1 week) $\left(\frac{2,40,000\text{ units} \times ₹125}{52\text{ weeks}} \times 1\text{ week}\right)$		5,76,923
(iii) Outstanding overheads (2 weeks) $\left(\frac{2,40,000\text{ units} \times ₹200}{52\text{ weeks}} \times 2\text{ weeks}\right)$		18,46,154
Total Current Liabilities		60,23,077
Net Working Capital Needs (A – B)		1,51,11,923

(b) Calculation of Operating Cycle Period and number of Operating Cycle in a Year

Operating Cycle Period = R + W + F + D – C

= 54 + 20 + 22 + 74 – 25 = 145 days

$$\text{Number of Operating Cycle in a Year} = \frac{360}{\text{Operating Cycle Period}}$$

= 360/145 = 2.48 times

6. (a) Different types of packing credit are-

(i) Clean packing credit: This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighed according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(ii) Packing credit against hypothecation of goods: Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit, along with the firm export order or letter of credit relative stock statements and thereafter continue submitting them every fortnight and/or whenever there is any movement in stocks.

(iii) **Packing credit against pledge of goods:** Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.

(iv) **E.C.G.C. guarantee:** Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.

(v) **Forward exchange contract:** Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contact with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(b) **Risk Adjusted Discount Rate:** The use of risk adjusted discount rate (RADR) is based on the concept that investors demands higher returns from the risky projects. The required rate of return on any investment should include compensation for delaying consumption plus compensation for inflation equal to risk free rate of return, plus compensation for any kind of risk taken. If the risk associated with any investment project is higher than risk involved in a similar kind of project, discount rate is adjusted upward in order to compensate this additional risk borne.

A risk adjusted discount rate is a **sum of risk free rate and risk premium.** The Risk Premium depends on the perception of risk by the investor of a particular investment and risk aversion of the Investor.

So Risks adjusted discount rate = Risk free rate+ Risk premium

Risk Free Rate: It is the rate of return on Investments that bear no risk. For e.g., Government securities yield a return of 6 % and bear no risk. In such case, 6 % is the risk-free rate.

Risk Premium: It is the rate of return over and above the risk-free rate, expected by the Investors as a reward for bearing extra risk. For high risk project, the risk premium will be high and for low risk projects, the risk premium would be lower.

(c) **Role of Financial Controller:** The role of financial controller has undergone changes over the years. Until the middle of this century, its scope was limited to procurement of funds under major events in the life of the enterprise such as promotion, expansion, merger, etc. In the modern times, the role of financial controller includes besides procurement of funds, the three different kinds of decisions as well, namely, investment, financing and dividend.

The financial controller, in a bid to maximize shareholders' wealth, should strive to maximize returns in relation to the given risk; he should seek courses of actions that avoid unnecessary risks. To ensure maximum return, funds flowing in and out of the firm should be constantly monitored to assure that they are safeguarded and properly utilized.

OR

In dividend price approach, cost of equity capital is computed by dividing the expected dividend by market price per share. This ratio expresses the cost of equity capital in relation to what yield the company should pay to attract investors. It is computed as:

$$K_e = \frac{D_1}{P_0}$$

Where,

D_1 = Dividend per share in period 1

P_0 = Market price per share today.

8B: ECONOMICS FOR FINANCE

1. (a) Regional accounts provide an integrated database on the innumerable transactions taking place in the regional economy and help decision making at the regional level. At present, practically all the states and union territories of India compute state income estimates and district level estimates. State Income or Net State Domestic Product (NSDP) is a measure in monetary terms of the volume of all goods and services produced in the state within a given period of time (generally a year) accounted without duplication. Per Capita State Income is obtained by dividing the NSDP (State Income) by the midyear projected population of the state.

The state level estimates are prepared by the State Income Units of the respective State Directorates of Economics and Statistics (DESs). The Central Statistical Organisation assists the States in the preparation of these estimates by rendering advice on conceptual and methodological problems.

(b) Ideally, all the three methods of national income computation should arrive at the same figure. When national income of a country is measured separately using these methods, we get a three-dimensional view of the economy. Each method of measuring GDP is subject to measurement errors and each method provides a check on the accuracy of the other methods. By calculating total output in several different ways and then trying to resolve the differences, we will be able to arrive at a more accurate measure than would be possible with one method alone. Moreover, different ways of measuring total output give us different insights into the structure of our economy.

(c) Gross Domestic Product at Market Price (GDP_{MP}) = Gross Domestic Product at Factor Cost (GDP_{FC}) + Indirect Taxes- Subsidies

Subsidies = GDP_{FC} + Indirect Taxes- GDP_{MP}

360815+ 454367-779567

= 35615 crore

2. (a) There are many reasons to dispute the validity of GDP as a perfect measure of well- being. In fact, GDP measures our ability to obtain many requirements to make our life better; yet leave out many important aspects which ensure good quality of life for all. GDP measures exclude the following which are critical for the overall wellbeing of citizens.

- Income distributions and, therefore, GDP per capita is a completely inadequate measure of welfare. Countries may have significantly different income distributions and, consequently, different levels of overall well-being for the same level of per capita income.
- Quality improvements in systems and processes due to technological as well as managerial innovations which reflect true growth in output from year to year.
- Productions hidden from government authorities, either because those engaged in it are evading taxes or because it is illegal (drugs, gambling etc.).
- The disutility of loss of leisure time.
- Economic 'bads' for example: crime, pollution, traffic congestion etc which make us worse off.

(b) A free rider is a person who benefits from something without expending effort or paying for it. In other words, free riders are those who utilize goods without paying for their use. Example is Wikipedia, a free encyclopedia which faces a free rider problem. Hundreds of millions of people

use Wikipedia every month but only a small part of users pay to use it. A large majority of Wikipedia users do not pay to use the site but are able to benefit from the information provided by the website. The free-rider problem occurs when everyone enjoys the benefits of a good without paying for it. Since private goods are excludable, free riding mostly occurs in the case of public goods. The free-rider problem leads to under- provision of a good or service and thus causes market failure.

(c) C = 10+0.8Yd

= 10 + 0.8 (Y – 50)

Y = C+I+G+(X-M)

Y = 10 + 0.8(Y-50) +135+60+ (35-0.05Y)

Y – 0.8Y +0.05Y = 10-40+135+60+35

0.25 Y = 200

Y = 800

Net Exports = (X-M) = 35 – 0.05Y

= 35 – (0.05 × 800)

= -5

Thus, trade is in deficit.

3. **(a)** Pump priming involves a one-shot injection of government expenditure into a depressed economy with the aim of boosting business confidence and encouraging larger private investment. It is a temporary fiscal stimulus in order to set off the multiplier process. The argument is that with a temporary injection of purchasing power into the economy through a rise in government spending financed by borrowing rather than taxes, it is possible for government to bring about permanent recovery from a slump. Pump priming was widely used by governments in the post-war era in order to maintain full employment; however, it became discredited later when it failed to halt rising unemployment and was held responsible for inflation.

(b) Given the development needs of developing countries, the monetary policy of such countries incorporates explicit objectives such as:

- Maintenance the economic growth
- Ensuring an adequate flow of credit to the productive sectors
- Sustaining- a moderate structure of interest rates to encourage investments, and
- Creation of an efficient market for government securities.

(c) According to Keynes, people hold money (M) in cash for three motives:

(i) Transactions motive,

(ii) Precautionary motive, and

(iii) Speculative motive.

The transaction motive for holding cash is directly related to the level of in- come and relates to 'the need for cash for the current transactions for personal and business exchange.

The amount of money demanded under the precautionary motive is to meet unforeseen and unpredictable contingencies involving money payments and depends on the size of the income, prevailing economic as well as political conditions and personal characteristics of the individual such as optimism/ pessimism, farsightedness etc.

The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. The speculative demand for money and interest are inversely related.

(d) Government intervention in resource allocation is necessary and justified to ensure social welfare through optimal allocation of resources. Government should perform the allocation function in an economy because it is the responsibility of the governments to initiate suitable corrective action when private markets fail to provide the right and desirable combination of goods and services. Government intervention in resource allocation is also warranted in the case of goods which we cannot produce on our own or buy at a price from the market and in the case of merit goods and goods which involve externalities.

4. (a) Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category.

(b) Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities that are utilized for absorbing from the market excess liquidity of a more enduring nature arising from large capital inflows.

(c) Potential problems of foreign direct investment include use of inappropriate capital- intensive methods in a labour-abundant country, increase in regional disparity, crowding-out of domestic investments, diversion of capital resulting in distorted pattern of production and investment, instability in the balance of payments and exchange rate and indiscriminate repatriation of the profits.

(d) Increase in Income = 7500 Crore

Increase in Investment = 2500 Crore

K = Increase in Income/Increase in Investment

= 7500/2500

K = 3

Multiplier = K = 1/1-MPC

3 = 1/1-MPC

3-3MPC =1

3MPC = 2

MPC = 0.66

5. **(a)** The Factor Price equalisation theorem postulates that if the prices of the output of goods are equalized between countries engaged in free trade, then the price of the input factor will also be equalized between countries. This Implies that the wages and rent will converge across the countries with free trade or in other words, trade in goods is a perfect substitute for trade in factors.

(b) The Monetary Policy Committee was constituted in September 2016. The Committee is required to meet four times a year and decision taken in the meeting is published after conclusion of the meeting. Based on the review of the macroeconomic and monetary developments in the economy, the monetary policy will determine the Policy rate required to achieve the inflation target. The fixing of the benchmark policy interest rate (repo rate) is made through debate and majority vote by the panel of experts of the committee.

(c) Gross Investment is that part of country's total expenditure which is not consumed but added to the nation's fixed tangible assets and stocks. It consists of the acquisition of fixed assets and the accumulation of stocks. The stock accumulation is in the form of changes in stock of raw materials, fuels, finished goods and semi-finished goods awaiting completion. Thus, gross investment includes final expenditure on machinery and equipment and own account production of machinery and equipment, expenditure on construction, expenditure on changes in inventories, and expenditure on the acquisition of valuables such as, jewellery and works of art.

(d) The SLR is also a powerful tool for controlling liquidity in the domestic market by means of manipulating bank credit. Changes in the SLR chiefly influence the availability of resources in the banking system for lending. A rise in the SLR which is resorted to during periods of high liquidity, tends to lock up a rising fraction of a bank's assets in the form of eligible instruments, and this reduces the credit creation capacity of banks. A reduction in the SLR during periods of economic downturn has the opposite effect. The SLR requirement also facilitates a captive market for government securities.

OR

An Outcome that occurs when government's intervention is ineffective causing wastage of resources extended for the intervention and/or when government intervention in the economy to correct a market failure creates inefficiency and leads to mis allocation of scarce resources.

Mock Test Paper - Series I: March, 2024

Date of Paper: 16 March, 2024

Time of Paper: 2 P.M. to 5 P.M.

INTERMEDIATE: GROUP – II

PAPER – 6A : FINANCIAL MANAGEMENT & STRATEGIC MANAGEMENT

PAPER 6A: FINANCIAL MANAGEMENT

Time Allowed – 3 Hours (Total time for 6A and 6B) **Maximum Marks – 50**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs)*
3. *Part II comprises questions which require descriptive type answers.*
4. *Working note should form part of the answer. Wherever necessary, suitable assumptions may be made by the candidates and disclosed by way of note. However, in answers to Questions in Division A, working notes are not required.*

PART I – Case Scenario based MCQs (15 Marks)

Write the most appropriate answer to each of the following multiple choice questions by choosing one of the four options given. All questions are compulsory.

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.

I. 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

II. How much advance factor will pay against receivables?

a. ₹ 31,28,889

b. ₹ 39,11,111

c. ₹ 30,03,733

d. ₹ 46,93,333

III. 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

IV. 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

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

a. 16.09%

b. 13.31%

c. 12.78%

d. 15.89% **(5 x 2 = 10 Marks)**

2. 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

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 **(2 Marks)**

3. "If EBIT increases by 6%, net profit increases by 6.9%. If sales increase by 6%, net profit will increase by 24%.

Financial leverage must be -……"

(a) 1.19

(b) 1.13

(c) 1.12

(d) 1.15 **(2 Marks)**

4. What is the maximum period for which company can accept Public Deposits?

(a) 1 year

(b) 6 months

(c) 3 years

(d) 5 years **(1 Marks)**

PART II – Descriptive Questions (35 Marks)

*Question No. **1** is compulsory.*

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

1. (a) The following figures have been extracted from the annual report of Xee Ltd.:

Net Profit	₹ 54 lakhs
Outstanding 12% preference shares	₹ 200 lakhs
No. of equity shares	2 lakhs
Return on Investment	22%
Cost of capital i.e. (K_e)	15%

COMPUTE the approximate dividend pay-out ratio so as to keep the share price at ₹ 120 by using Walter's model?

(Decimal may be taken up to 2 units) **(5 Marks)**

(b) Capital structure (in market-value terms) of AN Ltd is given below:

Company	Debt	Equity
AN Ltd.	50%	50%

The borrowing rate for the company is 10% in a no-tax world and capital markets are assumed to be perfect.

Required:

(i) If Mr. R, owns 8% of the equity shares of AN Ltd., DETERMINE his return if the Company has net operating income of ₹ 10,00,000 and the overall capitalization rate of the company (K_o) is 20%.

(ii) CALCULATE the implied required rate of return on equity of AN Ltd.

(5 Marks)

(c) ANVY Ltd. has furnished the following ratios and information for the year end 31st March, 2023:

Equity share capital	₹ 2,00,000
The relevant ratios of the company are as follows:	
Current debt to total debt	0.50
Total debt to Equity share capital	0.60
Fixed assets to Equity share capital	0.70
Total assets turnover	2.5 Times
Inventory turnover	10 Times

You are required to PREPARE the Balance Sheet of ANVY Ltd. as on 31st March, 2023. **(5 Marks)**

2. (a) NC Ltd. Is considering purchasing a new machine to increase its production facility. At present, it uses an old machine which can process 5,000 units of TVs per week. NC could replace it with new machine, which is product specific and can produce 15,000 units per week. New machine cost ₹ 100 crores and requires the working capital of ₹ 3 crores, which will be released at the end of 5th year. The new machine is expected to have a salvage value of ₹ 20 crores.

The company expects demand for TVs to be 10,000 units per week. Each TV sells for ₹ 30,000 and has Profit Volume Ratio (PV) of 0.10. The company works for the 56 weeks in the year. Additional fixed costs (excluding depreciation) are estimated to increase by ₹ 10 crores. The company is subject to a 40% tax rate and its after-tax cost of capital is 20%. The relevant rate of depreciation is 25 % for both taxation and accounts. The company uses the WDV method of depreciation. The existing machine will have no scrap value.

You are required to:

ADVISE whether the company should replace the old machine.

(Decimal may be taken up to 2 units) **(8 Marks)**

(b) WRITE a short note on “Cut-off Rate”. **(2 Marks)**

3. (a) Ram Ltd evaluates all its capital projects using discounting rate of 16%. Its capital structure consists of equity share capital, retained earnings, bank term loan and debentures redeemable at par. Rate of interest on bank term loan is 1.4 times that of debenture. Remaining tenure of debenture and bank loan is 4 years and 6 years respectively. Book value of equity share capital, retained earnings and bank loan is ₹ 20,00,000, ₹ 30,00,000 and ₹ 20,00,000 respectively. Debentures which are having book value of ₹ 30,00,000 are currently trading at ₹ 98 per debenture. The ongoing PE multiple for the shares of the company stands at 4.

You are required to:

(i) CALCULATE the rate of interest on bank loan and

(ii) CALCULATE the rate of interest on debentures

Tax rate applicable is 30%. **(8 Marks)**

(b) DISCUSS the dividend-price approach to estimate cost of equity capital. **(2 Marks)**

4. (a) EXPLAIN the limitations of profit maximization objective of Financial Management. **(4 Marks)**

(b) WHAT are the methods of venture capital financing? **(4 Marks)**

(c) WHAT is 'Optimum Capital Structure'? **(2 Marks)**

OR

EXPLAIN the concept of Financial Leverage as 'Trading on Equity'. **(2 Marks)**

INTERMEDIATE COURSE: GROUP II

PAPER 6B: STRATEGIC MANAGEMENT

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises case scenario based multiple choice questions (MCQs)*
3. *Part II comprises questions which require descriptive type answers.*

PART I – Case scenario based MCQs (15 Marks)

Question 1.(A) (Compulsory)

1. (A) In the fiercely competitive automotive industry, Zing, a promising newcomer, set out on a strategic journey with ambitions of making a substantial impact. Recognizing the significance of a robust distribution network early on, Zing forged partnerships with established dealerships, offering them attractive margins. This strategic move significantly enhanced Zing's reach, with a presence in 80% of the nation's dealerships by 2022, expanding its coverage significantly.

To differentiate themselves from competitors, Zing adopted two key strategies. Firstly, they prioritized product design, investing heavily in aesthetics and incorporating innovative features and environmentally friendly technologies. This focus on design led to their vehicles receiving excellent reviews and achieving an impressive 15% year-on-year growth in sales.

Secondly, Zing implemented switching costs to discourage customers from switching to other brands. Their vehicles featured branded software, making it both expensive and cumbersome for customers to transition to alternative brands. This strategic move effectively protected Zing's market share.

Zing's overarching goal was to position itself as a premium automotive brand, blending luxury with sustainability. However, their execution fell down as they challenged with maintaining consistent quality and service levels, resulting in mixed customer reviews.

Despite their best efforts, Zing's differentiation strategy fell short due to issues with inconsistent quality and service. Negative word-of-mouth and declining customer satisfaction scores tarnished their brand image, leading to stagnating sales. This failure to deliver on their brand promise proved to be a significant setback.

As Zing's reputation suffered from execution failures, securing additional funds for international expansion became challenging. Consequently, they made the difficult decision to postpone their global ambitions for the next five years, focusing instead on stabilizing their finances and rebuilding their brand image.

In summary, Zing's strategic journey illustrates the importance of not only crafting a compelling differentiation strategy but also executing it flawlessly. In the competitive automotive landscape, maintaining

consistent quality and service is paramount to sustaining brand loyalty and achieving long-term success.

Based on the above Case Scenario, answer the Multiple Choice Questions.

(i) What key strategic approach did Zing use to expand its market presence in the automotive industry?

(a) Product innovation and design

(b) Cost leadership strategy

(c) Entering new international markets

(d) Vertical integration **(2 Marks)**

(ii) How did Zing protect its market share from potential competitors?

(a) Price-cutting strategy

(b) Branded software and switching costs

(c) Aggressive marketing campaigns

(d) International expansion **(2 Marks)**

(iii) Why did Zing's differentiation strategy fall short in the market?

(a) Intense price competition

(b) Poor marketing strategy

(c) Inconsistent quality and service

(d) Lack of international expansion **(2 Marks)**

(iv) Forging partnerships with established dealerships to enhance its distribution network falls under which level of strategy?

(a) Corporate level strategy

(b) Business level strategy

(c) Functional level strategy

(d) Competitive level strategy **(2 Marks)**

(v) How did Zing initially expand its market presence across the nation?

(a) Aggressive marketing campaigns

(b) Developing low-cost vehicles

(c) Partnering with established dealerships

(d) Launching a luxury brand **(2 Marks)**

(B) Compulsory Application Based Independent MCQs

(i) TechMex Inc., a leading technology company, offers a diverse portfolio of products ranging from established cash cows to promising question marks. As part of its strategic planning process,

the company aims to assess its product portfolio's performance and allocate resources effectively. In which quadrant of the BCG Matrix would TechMex's new innovative product, recently launched in a rapidly growing market, likely fall into?

(a) Cash Cow

(b) Dog

(c) Question Mark

(d) Star **(2 Marks)**

(ii) BlueSky Enterprises, a multinational corporation specializing in renewable energy solutions, is undergoing a strategic transformation to enhance its competitive position in the market. As part of this initiative, the company is reevaluating its organizational structure, processes, and culture. Which aspect of the McKinsey 7S Model is most relevant for BlueSky Enterprises during this strategic transformation?

(a) Strategy

(b) Structure

(c) Systems

(d) Skills **(2 Marks)**

(iii) The threat of substitutes is high when:

(a) There are few substitute products available

(b) Switching costs are low

(c) Suppliers have high bargaining power

(d) There is strong brand loyalty **(1 Mark)**

PART II – Descriptive Questions (35 Marks)

*Question No. **1** is compulsory.*

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

1. (a) Swati is the marketing manager at a software company. She is responsible for developing and implementing marketing strategies for the company's products. Swati leads a team of marketing professionals and works closely with the product development and sales teams to ensure that the company's products are effectively promoted in the market. She also analyzes market trends and customer feedback to refine the marketing strategies. Which level is she working at, discuss the roles and responsibilities of this level in organization? **(5 Marks)**

(b) ABC Corp, a multinational consumer electronics company, is planning to expand its operations into a new country. The company's senior management is evaluating the potential risks and opportunities of entering this new market. As part of their analysis, they decide to use

the PESTLE framework to assess the external factors that could impact their decision. How can the PESTLE framework help ABC Corp assess the external factors affecting its decision to expand into a new country? **(5 Marks)**

(c) Imagine you are a consultant advising a small manufacturing company embarking on a digital transformation journey. The company's leadership is concerned about managing the change effectively. Using the best practices for managing change in small and medium-sized businesses, outline a strategy to help the company navigate this transformation successfully. **(5 Marks)**

2. (a) Imagine you are a strategic consultant advising a retail company that is facing increasing competition from online retailers. The company is considering several strategic options to improve its market position. Using the concept that strategy is partly proactive and partly reactive, explain how the company can develop a strategic approach to address this challenge. **(5 Marks)**

(b) You are a strategic manager for a tech company launching a new smartphone model. The company wants to target tech-savvy consumers who value innovation and cutting-edge technology. Using the concept of customer behavior, develop a marketing strategy to promote the new smartphone. **(5 Marks)**

3. (a) A beverage company is launching a new line of energy drinks targeted at health-conscious consumers. The strategic manager wants to study the market position of rival companies in the energy drink segment. Which tool can be used for this analysis, and what is the procedure to implement it effectively? **(5 Marks)**

(b) The CEO of a textile mill believes that his company, currently operating at a loss, can be turned around. Develop an action plan outlining steps the CEO can take to achieve this turnaround. **(5 Marks)**

4. (a) Why Strategic Performance Measures are essential for organizations? **(5 Marks)**

(b) How can Mendelow's Matrix be used to analyze and manage the stakeholders effectively?

OR

Distinguish between Concentric Diversification and Conglomerate Diversification. **(5 Marks)**

Mock Test Paper - Series I: March, 2024

Date of Paper: 16 March, 2024

Time of Paper: 2 P.M. to 5 P.M.

INTERMEDIATE: GROUP – II

PAPER – 6: FINANCIAL MANAGEMENT & STRATEGIC MANAGEMENT

PAPER 6A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

PART I

1. I. (b) ₹ 35,55,556

II. (c) ₹ 30,03,733

III. (a) ₹ 8,83,200

IV. (d) ₹ 4,83,200

V. (a) 16.09%

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

2. B. ₹ 3,20,513; ₹ 8.33

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

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

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

3. D. 1.15

FL= % change in NP/%change in EBIT=6.9/6=1.15

4. C. 3 years

These deposits may be accepted for a period of six months to three years.

PART II

1. (a)

Particulars	(₹' in lakhs)
Net Profit	54
Less: Preference dividend	24
Earnings for equity shareholders	30
Earnings per share	30/2 = ₹ 15

Let, the dividend per share be D to get share price of ₹ 120.

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

Where,

P = Market price per share.

E = Earnings per share = ₹ 15

D = Dividend per share

R = Return earned on investment = 22%

K_e = Cost of equity capital = 15%

$$120 = \frac{D + \frac{0.22}{0.15}(15-D)}{0.15}$$

$$18 = \frac{0.15D + 3.3 - 0.22D}{0.15}$$

$$0.07D = 3.3 - 2.7$$

$$D = 8.57$$

$$\text{D/P ratio} = \frac{DPS}{EPS} \times 100 = \frac{8.57}{15} \times 100 = 57.13\%$$

So, the required dividend pay-out ratio will be = 57.13%

(b) Value of AN Ltd. = $\frac{NOI}{K_o} = \frac{₹\ 10,00,000}{20\%} = ₹\ 50,00,000$

(i) Return on Shares of Mr. R on AN Ltd.

Particulars	**Amount (₹)**
Value of the company	50,00,000
Market value of debt (50% x ₹ 50,00,000)	25,00,000
Market value of shares (50% x ₹ 50,00,000)	**25,00,000**
Particulars	**Amount (₹)**
Net operating income	10,00,000
Interest on debt (10% × ₹ 25,00,000)	2,50,000
Earnings available to shareholders	**7,50,000**
Return on 8% shares (8% × ₹ 7,50,000)	**60,000**

(ii) Implied required rate of return on equity of AN Ltd. = $\frac{₹\ 7,50,000}{₹\ 25,00,000}$ = **30%**

(c)

ANVY Ltd

Balance Sheet as on 31st March, 2023

Liabilities	**₹**	**Assets**	**₹**
Equity share capital	2,00,000	Fixed assets	1,40,000
Current debt	60,000	Cash (balancing figure)	1,00,000
Long term debt	60,000	Inventory	80,000
	3,20,000		3,20,000

Working Notes

1. Total debt = 0.60 x Equity share capital = 0.60 × ₹ 2,00,000 = ₹ 1,20,000

   Further, Current debt to total debt = 0.50. So, current debt = 0.50 x ₹1,20,000 = ₹ 60,000,

Long term debt = ₹1,20,000 - ₹60,000= ₹ 60,000

2. Fixed assets = 0.70 × Equity share Capital = 0.70 × ₹ 2,00,000 = ₹ 1,40,000

3. Total assets to turnover = 2.5 Times: Inventory turnover = 10 Times

Hence, Inventory /Total assets = 2.5/10=1/4, Total assets = ₹ 3,20,000

Therefore Inventory = ₹ 3,20,000/4 = ₹ 80,000

2. (a) Cash inflows after tax (CFAT)

Particular	₹
Current production (units per week)	5,000 units
New capacity (units per week)	15,000 units
Demand (units per week)	10,000 units
Increase in sales (units per week) A.	5,000 units
Contribution per unit (₹ 30,000 x 0.10) B.	3,000
Increase in contribution A x B x 56	84 crores
Less: Additional fixed cost	10 crores
Increase in profit	74 crores
Less: Tax @ 40%	29.6 crores
Profit after tax	44.4 crores

Tax shield due to depreciation

Year	Depreciation (₹ in Crore)	Tax Shield (₹ in Crore)	PV Factor @ 20%	Total Present Value (₹ in Crore)
1	25.00	10	0.83	8.33
2	18.75	7.5	0.69	5.18
3	14.06	5.62	0.58	3.26
4	10.55	4.22	0.48	2.03
5	7.91	3.16	0.40	1.27
Total				20.07

Tax shield on capital loss = (23.73-20.00) x 30% = ₹ 1.12 crores

Net Present Value (NPV)

Particulars	Year	Cash Flow (₹ in Crores)	PVAF @ 20%	Present Value (₹ in Crores)
Initial Investment	0	(100)	1	(100)
Working capital	0	(3)	1	(3)
Profit after tax	1-5	44.4	2.99	132.76
Salvage value	5	20	0.40	8.00

Tax shield on Depreciation	1-5			20.07
Tax shield on capital loss	5	1.12	0.40	0.45
Release of Working Capital	5	3	0.40	1.20
NPV				59.47

The company is advised to replace the old machine since the NPV of the new machine is positive.

(b) **Cut-off Rate:** It is the minimum rate which the management wishes to have from any project. Usually this is based upon the cost of capital. The management gains only if a project gives return of more than the cut - off rate. Therefore, the cut - off rate can be used as the discount rate or the opportunity cost rate.

3. (a) **Working Note:**

Let the rate of Interest on debenture be x

$\therefore$ Rate of Interest on loan = 1.4x

$$\therefore k_d \text{ on debentures} = \frac{\text{Int}(1-t)+\frac{RV-NP}{n}}{\frac{RV+NP}{2}}$$

$$= \frac{100x(1-0.30)+\frac{100-98}{4}}{\frac{100+98}{2}}$$

$$= \frac{70x+0.5}{99}$$

$\therefore$ K_d on bank loan = 1.4 x (1 – 0.30) = 0.98x

$$K_e = \frac{EPS}{MPS} = \frac{1}{MPS/EPS} = \frac{1}{PE} = \frac{1}{4} = 0.25$$

K_e = 0.25

Computation of WACC

Capital	Amount	Weights	Cost	Product
Equity	20,00,000	0.2	0.25	0.05
Reserves	30,00,000	0.3	0.25	0.075
Debentures	30,00,000	0.3	(70x+0.5)/99	(21x+0.15)/99
Bank Loan	20,00,000	0.2	0.98x	0.196x
	1,00,00,000	1		$0.125+0.196x+\frac{21x+0.15}{99}$

WACC = 16%

$\therefore$ $0.125+0.196x+\frac{21x+0.15}{99}=0.16$

$\therefore$ $12.375+19.404x+21x+0.15 = (0.16)(99)$

$\therefore$ $40.404x = 15.84 - 12.525$

$\therefore$ $40.404x = 3.315$

$\therefore$ $x = \frac{3.315}{40.404}$

$\therefore$ $x = 8.20\%$

(i) Rate of interest on debenture = x = 8.20%

(ii) Rate of interest on Bank loan = 1.4x = (1.4)(8.20%) = 11.48%.

(b) In dividend price approach, cost of equity capital is computed by dividing the expected dividend by market price per share. This ratio expresses the cost of equity capital in relation to what yield the company should pay to attract investors. It is computed as:

$$K_e = \frac{D_1}{P_0}$$

Where,

K_e= Cost of equity

D = Expected dividend (also written as D_1)

P_0 = Market price of equity (ex- dividend)

4. (a) Limitations of Profit Maximisation objective of financial management.

(i) **The term profit is vague. It does not clarify what exactly it means.** It conveys a different meaning to different people. For example, profit may be in short term or long term period; it may be total profit or rate of profit etc.

(ii) **Profit maximisation has to be attempted with a realisation of risks involved.** There is a direct relationship between risk and profit. Many risky propositions yield high profit. Higher the risk, higher is the possibility of profits. If profit maximisation is the only goal, then risk factor is altogether ignored. This implies that finance manager will accept highly risky proposals also, if they give high profits. In practice, however, risk is very important consideration and has to be balanced with the profit objective.

(iii) **Profit maximisation as an objective does not take into account the time pattern of returns.** Proposal A may give a higher amount of profits as compared to proposal B, yet if the returns of proposal A begin to flow say 10 years later, proposal B may be preferred

which may have lower overall profit but the returns flow is more early and quick.

(iv) **Profit maximisation as an objective is too narrow.** It fails to take into account the social considerations as also the obligations to various interests of workers, consumers, society, as well as ethical trade practices. If these factors are ignored, a company cannot survive for long. Profit maximization at the cost of social and moral obligations is a short sighted policy.

(b) Some common methods of venture capital financing are as follows:

(i) Equity financing: The venture capital undertakings generally require funds for a longer period but may not be able to provide returns to the investors during the initial stages. Therefore, the venture capital finance is generally provided by way of equity share capital. The equity contribution of venture capital firm does not exceed 49% of the total equity capital of venture capital undertakings so that the effective control and ownership remains with the entrepreneur.

(ii) Conditional loan: A conditional loan is repayable in the form of a royalty after the venture is able to generate sales. No interest is paid on such loans. In India venture capital financiers charge royalty ranging between 2 and 15 per cent; actual rate depends on other factors of the venture such as gestation period, cash flow patterns, risk and other factors of the enterprise. Some Venture capital financiers give a choice to the enterprise of paying a high rate of interest (which could be well above 20 per cent) instead of royalty on sales once it becomes commercially sound.

(iii) Income note: It is a hybrid security which combines the features of both conventional loan and conditional loan. The entrepreneur has to pay both interest and royalty on sales but at substantially low rates. IDBI's VCF provides funding equal to 80 – 87.50% of the projects cost for commercial application of indigenous technology.

(iv) Participating debenture: Such security carries charges in three phases — in the start-up phase no interest is charged, next stage a low rate of interest is charged up to a particular level of operation, after that, a high rate of interest is required to be paid.

(c) Optimum Capital Structure: The capital structure is said to be optimum when the firm has selected such a combination of equity and debt so that the wealth of firm is maximum. At this capital structure, the cost of capital is minimum and the market price per share i.e. value of the firm is maximum.

OR

Financial leverage indicates the use of funds with fixed cost like long term debts and preference share capital along with equity share capital which is known as trading on equity. The basic aim of financial leverage is to increase the earnings available to equity shareholders using fixed cost fund.

A firm is known to have a positive/favourable leverage when its earnings are more than the cost of debt. If earnings are equal to or less than cost of debt, it will be an negative/unfavourable leverage. When the quantity of fixed cost fund is relatively high in comparison to equity capital it is said that the firm is **''trading on equity".**

INTERMEDIATE COURSE: GROUP II

PAPER 6B: STRATEGIC MANAGEMENT

ANSWERS

PART I

1. (A) (i) (a) (ii) (b) (iii) (c) (iv) (b) (v) (c)

1. (B) (i) (c) (ii) (b) (iii) (b)

PART II

1. (a) Swati operates at the functional level of management, specifically as the marketing manager at a software company. Functional managers like Swati oversee specific departments or functions within an organization, such as marketing, finance, or operations. Their primary responsibilities include implementing corporate strategies and policies within their area of expertise and ensuring that daily operations are conducted efficiently and effectively.

In Swati's case, as a marketing manager, her role involves developing and executing marketing strategies for the company's products. This includes leading a team of marketing professionals, collaborating with product development and sales teams, and analyzing market trends and customer feedback to refine strategies. By working closely with these teams, Swati ensures that the company's products are effectively promoted in the market and that marketing efforts align with overall business goals.

Functional managers like Swati play a critical role in the organization by bridging the gap between corporate strategy and daily operations. They are responsible for translating high-level strategic goals into actionable plans for their departments and ensuring that these plans are executed effectively. Additionally, they are often key decision-makers within their areas of responsibility, making strategic choices that impact on the company's success. Overall, Swati's role as a marketing manager exemplifies the importance of functional managers in driving the success of their organizations.

(b) The PESTLE framework can help ABC Corp assess the external factors affecting its decision to expand into a new country by considering the following aspects:

- **Political Factors**: These include the stability of the government, government policies on foreign investment, trade agreements, and regulatory frameworks. By analyzing these factors, ABC Corp can assess the political risks associated with entering the new market.
- **Economic Factors**: Economic factors such as GDP growth rate, inflation rate, exchange rates, and economic stability can impact ABC Corp's decision. By analyzing these factors, the company can

understand the economic environment of the new market and its potential impact on business operations.

- **Social Factors**: Social factors such as cultural norms, demographics, and lifestyle trends can influence consumer behavior and demand for ABC Corp's products. Understanding these factors can help the company tailor its marketing strategies to the new market.
- **Technological Factors**: Technological factors such as infrastructure, technological advancements, and the level of technology adoption in the new market can impact ABC Corp's operations. By assessing these factors, the company can determine the technological requirements for entering the new market.
- **Legal Factors**: Legal factors such as laws and regulations related to foreign investment, intellectual property rights, and labor laws can impact ABC Corp's decision. By analyzing these factors, the company can ensure compliance with legal requirements in the new market.
- **Environmental Factors**: Environmental factors such as climate change, environmental regulations, and sustainability practices can impact ABC Corp's operations and reputation. By considering these factors, the company can assess the environmental risks and opportunities in the new market.

Overall, the PESTLE framework can provide ABC Corp with a comprehensive analysis of the external factors that could impact its decision to expand into a new country, helping the company make informed and strategic decisions.

(c) To help the small manufacturing company navigate its digital transformation successfully, we would recommend the following strategy:

1. **Begin at the top:** The leadership team should be united and committed to the digital transformation. They should communicate a clear vision for the future of the company and lead by example.
2. **Ensure that the change is necessary and desired:** Before implementing any changes, the company should assess its current state and identify areas where digital transformation can add value. It's important to involve employees in this process to ensure their buy-in.
3. **Reduce disruption:** Employee perceptions of change can vary, so it's important to minimize disruption. This can be done by communicating early and often about the changes, providing training and support for employees, and empowering change agents within the organization.

4. **Encourage communication:** Create channels for employees to ask questions and provide feedback. Encourage collaboration between departments to share ideas and innovations. Effective communication can help alleviate fears and keep everyone aligned.
5. **Recognize that change is the norm:** Digital transformation is not a one-time project but an ongoing process. The company should be prepared to adapt to new technologies and market conditions continuously.

By following these best practices, the small manufacturing company can successfully navigate its digital transformation and position itself for future growth and success.

2. (a) The retail company can develop a strategic approach that is both proactive and reactive to address the challenge of increasing competition from online retailers. To achieve this, the company can:

- **Proactive Strategy:** The company can proactively analyze market trends and customer preferences to identify opportunities for growth. For example, it can invest in market research to understand what customers value in a retail experience and tailor its offerings to meet those needs. This proactive approach can help the company stay ahead of competitors and attract new customers.
- **Reactive Strategy:** In addition to proactive measures, the company should also be prepared to react to changes in the market environment. For example, if a competitor launches a new online shopping platform, the company should quickly assess the impact on its business and develop a response. This reactive strategy can help the company adapt to changing market conditions and maintain its competitiveness.

By combining proactive and reactive strategies, the retail company can develop a comprehensive approach to addressing the challenge of increasing competition from online retailers. This approach will allow the company to capitalize on opportunities for growth while also mitigating risks and responding to threats in the market.

(b) To target tech-savvy consumers for the new smartphone model, the tech company can develop a marketing strategy based on customer behavior. Consumer behaviour may be influenced by a number of things. These elements can be categorised into the following conceptual domains:

- **External Influences:** Utilize online platforms and tech forums to generate buzz around the new smartphone. Partner with tech influencers and bloggers to review the product and create awareness among tech-savvy consumers.
- **Internal Influences:** Appeal to the desire for innovation and advanced features among tech-savvy consumers. Highlight the

unique selling points of the new smartphone, such as its cutting-edge technology, performance, and design.

- **Decision Making:** Recognize that tech-savvy consumers are early adopters who value functionality and performance. Provide detailed specifications and comparisons with other smartphones to help them make an informed decision.
- **Post-decision Processes:** Offer excellent customer service and support to address any technical issues or concerns. Encourage customers to provide feedback and reviews to build credibility and trust among tech-savvy consumers.

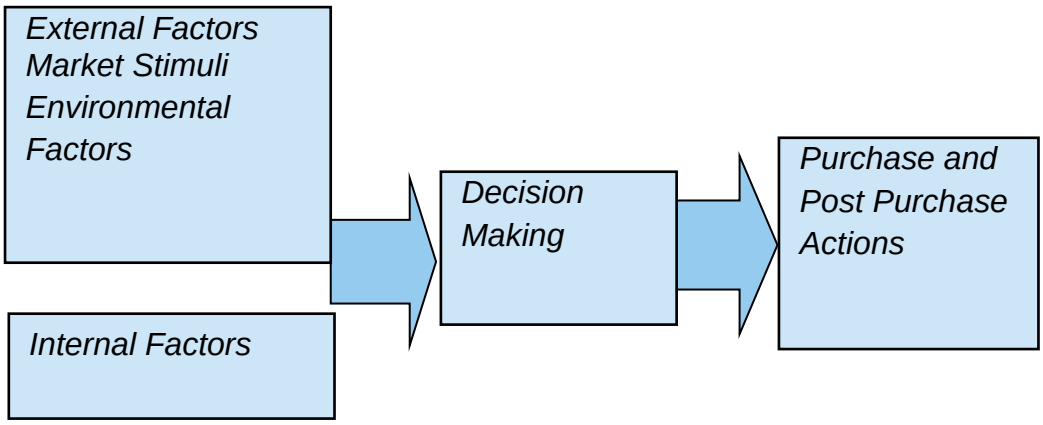


Figure: Process of consumer behaviour

By understanding the behavior of tech-savvy consumers and aligning the marketing strategy with their preferences, the tech company can effectively promote the new smartphone and attract this demographic.

3. (a) To study the market position of rival companies in the energy drink segment, the strategic manager can use **strategic group mapping.** This tool helps identify strategic groups, which consist of rival firms with similar competitive approaches and positions in the market. The procedure for implementing strategic group mapping effectively is as follows:

1. **Identify the competitive characteristics** that differentiate firms in the industry typical variables that are price/quality range (high, medium, low); geographic coverage (local, regional, national, global); degree of vertical integration (none, partial, full); product-line breadth (wide, narrow); use of distribution channels (one, some, all); and degree of service offered (no-frills, limited, full).
2. **Plot the firms on a two-variable map** using pairs of these differentiating characteristics.

3. **Assign firms that fall in about the same strategy space** to the same strategic group.

4. **Draw circles around each strategic group** making the circles proportional to the size of the group's respective share of total industry sales revenues.

By following these steps, the strategic manager can gain valuable insights into the competitive landscape of the energy drink segment and identify potential positioning strategies for the new line of energy drinks targeted at health-conscious consumers.

(b) A workable action plan for turnaround of the textile mill would involve:

- **Stage One – Assessment of current problems**: In the first step, assess the current problems and get to the root causes and the extent of damage.
- **Stage Two – Analyze the situation and develop a strategic plan:** Identify major problems and opportunities, develop a strategic plan with specific goals and detailed functional actions after analyzing strengths and weaknesses in the areas of competitive position.
- **Stage Three – Implementing an emergency action plan**: If the organization is in a critical stage, an appropriate action plan must be developed to stop the bleeding and enable the organization to survive.
- **Stage Four – Restructuring the business**: If the core business is irreparably damaged, then the outlook for the entire organization may be bleak. Efforts to be made to position the organization for rapid improvement.
- **Stage Five – Returning to normal**: In the final stage of turnaround strategy process, the organization should begin to show signs of profitability, return on investments and enhancing economic value-added.

4. (a) Strategic performance measures are essential for organizations for several reasons:

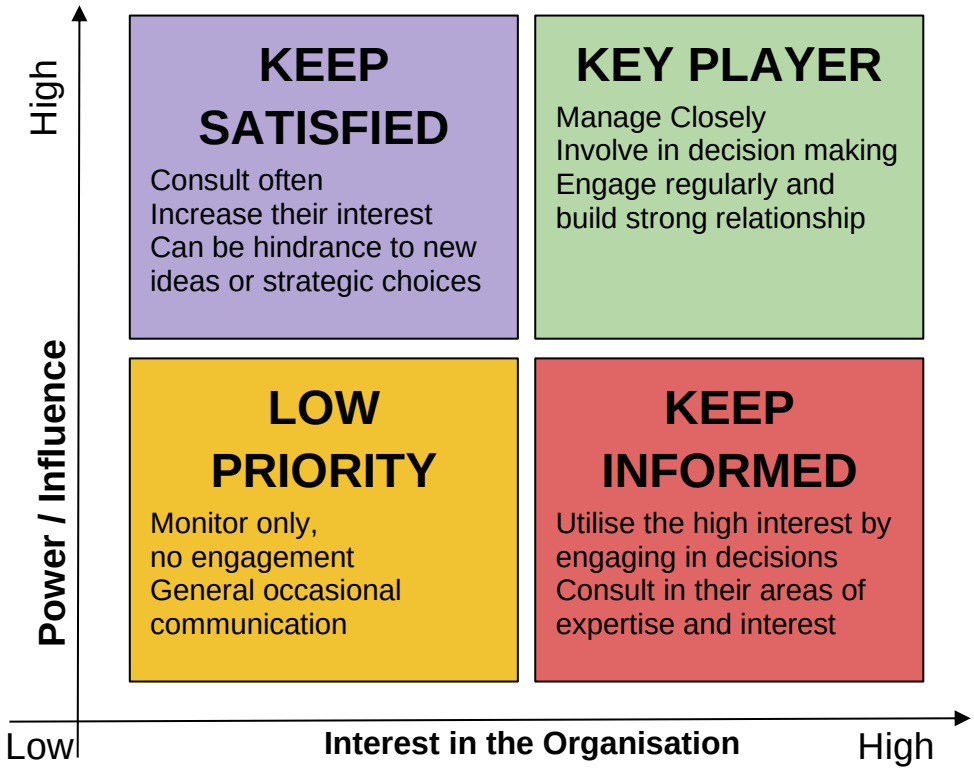
- **Goal Alignment:** Strategic performance measures help organizations align their strategies with their goals and objectives, ensuring that they are on track to achieve their desired outcomes.
- **Resource Allocation:** Strategic performance measures provide organizations with the information they need to make informed decisions about resource allocation, enabling them to prioritize their

efforts and allocate resources to the areas that will have the greatest impact on their performance.

- **Continuous Improvement:** Strategic performance measures provide organizations with a framework for continuous improvement, enabling them to track their progress and make adjustments to improve their performance over time.
- **External Accountability:** Strategic performance measures help organizations demonstrate accountability to stakeholders, including shareholders, customers, and regulatory bodies, by providing a clear and transparent picture of their performance.

(b) Mendelow's Matrix can be used effectively to analyze and manage stakeholders through a grid-based approach by the following steps:

1. **Identify Stakeholders:** Begin by identifying all relevant stakeholders for your project or organization. This includes individuals, groups, or organizations that may be impacted by or have an impact on your activities.
2. **Assess Power and Interest:** For each stakeholder, assess their power to influence your project or organization and their level of interest in its success. Power can be assessed based on factors such as authority, resources, and expertise, while interest can be gauged by their level of involvement, expectations, and potential benefits or risks.
3. **Plot Stakeholders on the Grid:** Create a grid with Power on one axis and Interest on the other. Plot each stakeholder on the grid based on your assessment. Stakeholders with high power and high interest are placed in the "Key Players" quadrant, those with high power but low interest are in the "Keep Satisfied" quadrant, those with low power but high interest are in the "Keep Informed" quadrant, and those with low power and low interest are in the "Low Priority" quadrant.



4. **Develop Strategies for each Quadrant:** Based on the placement of stakeholders in the grid, develop specific strategies for managing each quadrant:
   - **Key Players:** Fully engage with these stakeholders, seek their input, and keep them informed. They are crucial for the success of your project, so their needs and expectations should be a top priority.
   - **Keep Satisfied:** These stakeholders have significant power but may not be as interested in your project. Keep them satisfied by providing regular updates and addressing any concerns they may have to prevent them from becoming detractors.
   - **Keep Informed:** While these stakeholders may not have much power, they are highly interested in your project. Keep them informed to ensure they remain supportive and to leverage their insights and feedback.
   - **Low Priority:** These stakeholders have low power and interest. Monitor them for any changes but allocate minimal resources to managing their expectations.
5. **Monitor and Adapt:** Continuously monitor the power and interest of stakeholders and adjust your strategies accordingly. Stakeholders may move between quadrants based on changing circumstances, so it's important to remain flexible and responsive.

By using Mendelow's Matrix as a grid-based tool, you can effectively analyze and manage stakeholders by tailoring your engagement strategies to their specific needs and expectations, ultimately increasing the likelihood of project success.

OR

The following are the principal points of distinction between concentric diversification and conglomerate diversification:

(i) Concentric diversification occurs when a firm adds related products or markets. On the other hand, conglomerate diversification occurs when a firm diversifies into areas that are unrelated to its current line of business.

(ii) In concentric diversification, the new business is linked to the existing businesses through process, technology or marketing. In conglomerate diversification, no such linkages exist; the new business/product is disjointed from the existing businesses/ products.

(iii) The most common reasons for pursuing concentric diversification are that opportunities in a firm’s existing line of business are available. However, common reasons for pursuing a conglomerate growth strategy are that opportunities in a firm's current line of business are limited or opportunities outside are highly lucrative.