Paper 10- COST & MANAGEMENT ACCOUNTING AND FINANCIAL MANAGEMENT

Paper 10 - Cost & Management Accounting and Financial Management

Full Marks: 100 **Time allowed: 3 hours**

This paper is divided into two Sections A & B, each carrying 50 marks.
Further each Section has been divided into two parts.

SECTION – A (Cost and Management Accounting)
PART- I

1. Answer the following questions:

(A) Choose the correct answer from the given four alternatives. **[1x6=6]**

(i) Division of Accounting is divided into
- **(a) 2**
- **(b) 3**
- **(c) 4**
- **(d) None of the above.**

(ii) Sales budget shows the sales detail as
- **(a) Month wise**
- **(b) Area wise**
- **(c) Product wise**
- **(d) All of the above**

(iii) Which of the following can be used to calculate the material price variance :
- **(a) (AQ - SQ) ×SP**
- **(b) (AP –SP) × AQ**
- **(c) (AP –SP) × SQ**
- **(d) (AQ – SQ) × AP**

(iv) Which of the following is often the cause of differences between actual and standard costs of materials and labour?
- **(a) Price changes for materials**
- **(b) Excessive labour hours**
- **(c) Excessive use of material**
- **(d) All of the above**

(v) Planning and control are done by :
- **(a) Top management**
- **(b) Lowest level of management**
- **(c) All levels of management**
- **(d) None of the above**

(vi) If standard hours are 400 @ ₹1 per hour and actual hours are 380 @ ₹1.50 per hour, the labour rate variance is:

(a) ₹20 (Favorable)
(b) ₹25 (Favorable)
(c) ₹100 (Adverse)
(d) ₹190 (Adverse)

Answer:

i. (b)
ii. (a)
iii. (b)
iv. (d)
v. (a)
vi. (d)

(B) Match the following: **[4×1=4]**

	Column 'A'		Column 'B'
1.	**Sales value variance**	**A.**	**Cost of goods during the year/ average inventory**
2.	**Fixed asset ratio**	**B.**	**Limiting factor**
3.	**Constraint on various resources**	**C.**	**Ideal ratio is 0.67**
4.	**Stock turnover ratio**	**D.**	**Budgeted sales – Actual sales**

Answer:

1. D
2. C
3. B
4. A

(C) Say True or False for the following question: **[4×1=4]**

(i) Uniform costing is a method of costing.
(ii) Management Accounting tailors non –financial information to meet the specific needs of management.
(iii) When fixed cost is deducted from total cost, we get marginal cost.
(iv) Standard costing works on the principle of exception.

Answer :

(i) False
(ii) False
(iii) True
(iv) True

PART II

Answer any three questions out of four questions

2.(a) A Spanish soft drink company is planning to establish a subsidiary company in India to produce mineral water . Based on the estimated annual sales of 50,000 bottles of the mineral water, cost studies produced the following estimates for the Indian subsidiary :

	Total annual costs	% of total annual cost which is variable
Material	**2,10,000**	**100%**
Labour	**1,50,000**	**80%**
Factory overhead	**92,000**	**60%**
Administration expenses	**40,000**	**35%**

The Indian production will be sold by manufacturer's representatives who will receive a commission of 8% of the sale price . No portion of the Spanish office expenses is to be allocated to the Indian subsidiary. Required :

(i) Compute the sales price per bottle to enable the management to realize an estimated 10% profit on sale proceeds in India.

(ii) Calculate the break-even point in Rupee sales and also in number of bottles for the Indian subsidiary on the assumption that the sale price is ₹ 14 per bottle. [8]

(b) A mobile manufacturing company finds that while it costs ₹ 6.25 each to make a component Y- 2370, the same is available in the market at ₹ 5.50 with an assurance of a continued supply . The breakeven of cost is :

Direct material	**₹ 2.50**
Direct labour	**₹ 2.00**
Other variables	**₹0.50**
Depreciation and other fixed cost	**₹ 1.25**
Total	**₹ 6.25**

(i) Should you make or buy ?

(ii) What would be your decision if the supplier offers the component at ₹ 4.85 each ?

[4]

Answer:

(a) (i) Commission is 8% of sales revenue
Profit is 10% of sales revenue.
Hence cost of sales is 82% of sales revenue.
If cost of sales is ₹ 82 then sales revenue is ₹100.

If cost of sales is ₹ 4,92, 000 then sales revenue = $\frac{4,92,000 \times 100}{82}$ = ₹ 6,00,000

Computation of the sales price per bottle
Total sales revenue = ₹ 6,00,000
No of mineral water bottles sold = 50,000

Sales price per bottle = $\frac{6,00,000}{50,000}$ = ₹ 12

(ii) (a) variable cost

Particulars	Total	Per unit
	50,000	1(one)
	₹	₹
Material	2,10,000	4.2
Labour(80% of ₹ 1,50,000)	1,20,000	2.4
Factory overhead (60% of ₹ 92,000)	55,200	1.104
Administration expenses (35% of ₹ 40,000)	14,000	0.28
Commission(₹14× 50,000×8%)	56,000	1.12
	4,55,200	9.104

(b) Total annual fixed :
= fixed labour cost +fixed factory overhead + fixed administration expenses
= (₹1,50,000 ×20% + ₹92,000 × 40% + ₹40,000 × 65%)
= ₹ 92,800

(c) P/V ratio = $\frac{\text{sales- variable cost}}{\text{sales}} \times 100 = ₹\frac{14 - 9.104}{14} = 34.9714\%$

(d) contribution per bottle = sales – variable cost
= 14- 9.104
= ₹4.896

Computation of breakeven point:

Breakeven point (in rupees sales) = $\frac{\text{Fixed cost}}{\text{P / V Ratio}} = \frac{92,800}{34.9714\%} = ₹\ 2,65,360$

Breakeven point (in number of bottles)= $\frac{\text{fixed cost}}{\text{contribution per bottle}} = \frac{92800}{4.896} = 18,954.248\text{bottles}$

(b) Calculation of marginal cost of component Y- 2370

	Per unit
Direct material	2.50
Direct labour	2.00
Other cost	0.50
Marginal cost	5.00

(i) Since the marginal cost per unit of ₹5 is lower than the market price of ₹5.50, it is recommended to manufacture the component in the factory.

(ii) Since the purchase price of ₹ 4.85 is lower than the marginal cost, the component should be bought from outside supplier provided proper quality and regular supply are guaranteed.

3.(a) The following information is related to labour of Aditya Ltd. engaged in a week of November 2018 for Job –SH. :

	Skilled workers	**Semi-skilled workers**	**Unskilled workers**	**Total**
Standard no. of workers in the gang	**16**	**12**	**8**	**36**
Standard wage rate per hour (₹)	**60**	**30**	**10**	**-**
Actual no. of workers employed in the gang during the week	**12**	**16**	**8**	**-**
Actual wage rate per hour (₹)	**70**	**20**	**20**	**-**

In a 40 hours week, the gang produced 1080 standard hours. The actual number of semi-skilled workers is two times of the actual number of unskilled workers. Total number of actual workers is same as standard gang. The rate variance of semi skilled workers is ₹6,400 (F). You are required to find the following:
a. The actual number of workers/labours in each category.
b. Labour gang (mix) variance.

c. Labour sub-efficiency variance.
d. Labour rate variance.
e. Labour cost variance. **[7]**

(b) The share of total production and the cost based fair price computed separately for each of the four units in industry are as follows :

	(₹) per unit			
Share of production	**40 %**	**25%**	**20%**	**15%**
Material costs	**150**	**200**	**100**	**180**
Direct labour	**200**	**100**	**270**	**170**
Depreciation	**200**	**200**	**100**	**100**
Other overhead	**300**	**300**	**280**	**240**
	850	**800**	**750**	**690**
20% return on capital employed	**628**	**430**	**350**	**230**
Fair price	**1428**	**1230**	**1100**	**920**
Capital employed per unit is worked out as follows :				
Net fixed assets	**3000**	**2000**	**1600**	**1000**
Working capital	**140**	**150**	**150**	**150**
Total	**3,140**	**2,150**	**1,750**	**1,150**

Indicate with reasons ,what should be the uniform price fixed for the product. **[5]**

Answer:

(a) Rate variance of semi skilled workers=6400 (F)

Rate variance = (Standard Rate-Actual rate)

Actual Hours or 6400 =(30-20) or Actual Hours=6400/10=640

No of semi skilled workers=640/40=16

No of unskilled workers=16/2=8

No of skilled workers=36-16-8=12

Analysis of given data

Particulars			Standard data			Actual		
	No.	Hours	Rate	Amount	No.	Hour	Rate	Amount
Skilled	16	640	60	38,400	12	480	70	33,600
Semi-skilled	12	480	30	14,400	16	640	20	12,800
unskilled	8	320	10	3,200	8	320	20	6,400
				56,000				52,800

Computation of standard hours: Standard Hours=

$\frac{\text{standard hour for that shareholder}}{\text{Standard hour for all shareholders}}$ × Actual quantity for that worker

For Skilled Workers – Standard Hours= $\frac{640}{1440}$ × 1080 = 480

For Semi Skilled Workers – Standard Hours= $\frac{480}{1440}$ × 1080 = 360

For unskilled Workers – Standard Hours= $\frac{320}{1440}$ × 1080 = 240

	SRSH	SRRSH	SRAH	ARAH
Skilled worker	480× 60 = 28,800	38,400	480×60= 28,800	33,600
Semi-skilled worker	360× 30 =10,800	14,400	640×30= 19,200	12,800
Unskilled worker	240×10 = 2400	3,200	320×10= 3200	6,400
	42,000	56,000	51,200	52,800

Where

1. SRSH=Standard Cost of Standard Labour= ₹42,000
2. SRRSH=Revised Standard Cost of Labour= ₹ 56,000
3. SRAH=Standard Cost of Actual Labour= ₹51,200
4. ARAH=Actual Cost of Labour= ₹ 52,800

Computation of Labour Variance:

1. Labour gang (mix) variance=(2)-(3)=[56000-51200]= ₹ 4800 (F)
2. Labour sub-efficiency variance=(1)-(2)=[42000-56000]= ₹ 14000(A)
3. Labour rate variance=(3)-(4)=[51200-52800]= ₹1600 (A)
4. Labour cost variance=(1)-(4)=[42000-52800]= ₹10,800 (A)

(b) Computation of uniform price :

Weighted Average Cost = [850 × 40%] + [800 × 25%] +[750 × 20%]+ [690 × 15 %]
= 340 + 200 + 150 + 103.5
= ₹793.50

Weighted Average Return on Capital employed (profit)
= [628 × 40%] +[430 × 25%] + [350 × 20 %] + [230 × 15 %]
= 251.20 + 107.5 + 70 + 34.5
= ₹ 463. 20
Uniform price = 793.50 + 463. 20 = ₹ 1,256.70.

4.(a) Compute a flexible budget from the following data :

Planned level of activity	80,000 units ₹	80,000 to 1,00,000 units ₹	1,00,000 to 1,20,000 units ₹
Selling price	**2**	**2**	**1.8**
Variable cost per unit:			
Material	**70 ps**	**65ps**	**58ps**
Labour	**50ps**	**55ps**	**60ps**
Overhead	**40ps**	**40ps**	**40ps**
Fixed cost	**30,000**	**30,000**	**20,000**

What figures would you use for a comparison with the actual figure if 1,05,000 units are made and sold ? [6]

(b) Calculate the expected average units cost of making
(a) 8 machines and (b) 16 machines using the data below:
Direct Labour need to make first machine = 900 hrs.
Learning curve = 80%
Direct Labour cost =₹20/- per hour

Direct materials cost = ₹ 2,00,000
Fixed cost for either size orders = ₹80,000.

[6]

Answer:

(a) Flexible Budget

Activity Level (unit)	80,000	1,00,000	1,20,000
Selling Price	₹2	₹2	₹1.80
Budgeted Sales Revenue	₹1,60,000	₹2,00,000	₹2,16,000
Variable cost	₹	₹	₹
Material	56,000	65,000	69,600
Labor	40,000	55,000	72,000
Overhead	32,000	40,000	48,000
Total Variable costs	1,28,000	1,60,000	1,89,600
Fixed costs	30,000	30,000	20,000
Total costs	1,58,000	1,90,000	2,09,600
Budget profit	2,000	10,000	6,400

Flexible Budget for 1,05,000 units

₹

Materials	1,05,000 × 58 ps.	60,900
Labour	1,05,000 × 60 ps.	63,000
Variable overhead	1,05,000 × 40 ps.	42,000
Fixed overhead		20,000
Total cost		1,85,900
Sales	1,05,000× ₹1.8	1,89,000
Budgeted profit		3,100

(b)

No of machine	Average time	Labour Cost @ ₹20	Material cost ₹	Fixed cost ₹	Total cost ₹
1	900	18000	2,00,000	80,000	2,98,000
2	720	14400	2,00,000	40,000	2,54,400
4	576	11520	2,00,000	20,000	2,31,520
8	460.80	9216	2,00,000	10,000	2,19,216
16	368.64	7372.8	2,00,000	5,000	2,12,372.80

Average cost of making 8 units = ₹ 2,19,216
Average cost of making 16 units = ₹ 2,12,372.80

5. Short notes (any three questions out of four questions) **[3×4=12]**

(a) Master Budget
(b) Significance of Management Accounting
(c) Transfer pricing
(d) Prerequisites of Uniform Costing System

Answer:

(a) Master budget :

The master budget is the aggregation of all lower-level budgets produced by a company's various functional areas, and also includes budgeted statements, cash forecast, and a financing plan. The master budget is typically presented in either a monthly or quarterly format, or usually covers a company's entire fiscal year. An explanatory text may be included with the master budget, which explains the company's strategic direction, how the master budget will assist in accomplishing specific goals, and the management actions needed to achieve the budget. There may also be a discussion of the headcount changes that are required to achieve the budget.

A master budget is the central planning tool that a management team uses to direct the activities of a corporation, as well as to judge the performance of its various responsibility centers. It is customary for the senior management team to review a number of iterations of the master budget and incorporate modifications until it arrives at a budget that allocates funds to achieve the desired results. Hopefully, a company uses participative budgeting to arrive at this final budget, but it may also be imposed on the organization by senior management, with little input from other employees

(b) Significance of Management Accounting :

The various advantages that accrue out of management accounting are enumerated below:
(1) Delegation of Authority: Now a day the function of management is no longer personal, management accounting helps the organisation in proper delegation of authority for the attainment of the vision and mission of the business.
2) Need for the Management: Management Accounting plays the role in meeting the need of the management.
(3) Qualitative Information: Management Accounting accumulates the qualitative information so that management would concentrate on the actual issue to deliberate and attain the specific conclusion even for the complex problem.
(4) Objective of the Business: Management Accounting provides measure and reports to the management thereby facilitating in attainment of the objective of the business.

(c) Transfer pricing :

A 'Transfer Price' is that notional value at which goods and services are transferred between divisions in a decentralized organisation. Transfer prices are normally set for intermediate products, which are goods, and services that are supplied by the selling division to the buying division. In large organisations, each division is treated as a 'profit center' as a part and parcel of decentralization. Their profitability is measured by fixation of 'transfer price' for inter divisional transfers.

The transfer price can have impact on the division's performance and hence lot of care is to be taken in fixation of the same. The following factors should be taken into consideration before fixing the transfer prices
(1) Transfer price should help in the accurate measurement of divisional performance.
(2) It should motivate the divisional managers to maximize the profitability of their divisions.
(3) Autonomy and authority of a division should be ensured.
(4) Transfer Price should allow 'Goal Congruence' which means that the objectives of divisional managers match with those of the organisation.

(d) Prerequisites of Uniform Costing System :

a. The member of the trade association or Chamber of Commerce should work with a spirit of mutual trust and cooperation.
b. Member should exchange their ideas freely, without fearing the leakage of secrecy.
c. The well-organized and large scale sector should be prepared to pass on the technological development in the process or method of production to the other companies who are unable to conduct their own research and developmental activities.
d. The companies must furnish full and correct information to the Association so that efficiency of the member-companies can be compared.
e. The member should not work with a sense of rivalry or jealousy.

SECTION- B (Financial Management)
PART- I

6. Answer the following questions:

(A) Choose the correct answer from the given four alternatives. [1x6=6]

(i) The maturity period of commercial paper usually ranges from :
(a) 90 days to 360 days
(b) 6 months
(c) 91 days to 360 days
(d) 90 days

(ii) Which of the following are measures of Leverage -
(a) Operating leverage
(b) Financial leverage
(c) Combined Leverage
(d) All of the above.

(iii) NPV is positive indicates :
(a) Cash inflows are generated at a rate higher than the minimum required by the firm.
(b) Cash inflows are generated at a rate equal to the minimum required
(c) Cash inflows are generated at a rate lower than the minimum required by the firm.
(d) None of the above

(iv) Current Assets ₹ 20,00,000 ; Current Liabilities ₹10,00,000 and Stock ₹4,00,000, then what is liquid ratio?
(a) 2 times
(b) 1.6 times
(c) 1.4 times
(d) None of these

(v) Investment in a project is ₹ 200 lakhs and Net Present Value is ₹70 lakhs. Then the amount of inflows is :
(a) ₹130 lakhs
(b) ₹ 200 lakhs
(c) ₹ 100 lakhs
(d) ₹ 270 lakhs

(vi) The term _____means manipulation of accounts in a way so as to conceal vital facts and present the financial statements in a way to show a better position than what it actually is.
(a) Window dressing

(b) Creative accounting
(c) Window accounting
(d) Modified accounting

Answer:

(i) (a)
(ii) (d)
(iii) (a)
(iv) (b)
(v) (d)
(vi) (a)

(B) Match the statement in Column I with the most appropriate statement in column II: **[1x4=4]**

	Column I		Column II
1	Term loan	A	Foreign Currency Convertible Bonds
2	P/E Ratio	B	Long term finance
3	Value of right	C	Cum-right share price – Ex-right share price
4	FCCBs	D	Market price per equity share/Earning per share.

Answer:

1. B
2. D
3. C
4. A

(C) State whether the following statements are True or False **[1x4=4]**

(i) Commercial paper is a secured short term promissory note.
(ii) Gross working capital refers to the total of the current assets
(iii) Financial management deals with planning and mobilization of funds required by firm.
(iv) Current ratios are used for measuring the short term solvency of an entity.

Answer:

(i) False
(ii) True
(iii) True
(iv) True

PART – II

Answer any three Question from Q. No. 7, 8,9,10 .Each question carries 12 marks.

7.(a) The following accounting information and financial ratios of Star sunshine Ltd. relate to the year ended 31-3-17 :

(i) Accounting information

Direct wages	10% of works cost
Stock of raw material	3 months' usage

Stock of finished goods	**6% of works cost**
Raw material consumed	**20% of works cost**
Debt collection period	**60 days**
Gross profit	**15% of sales**
Net profit	**8% of sales**
All sales are on credit	

(ii) Ratios

Fixed asset to sales	**1:3**
Fixed assets to current assets	**13:11**
Current ratios	**2**
Long term loan to current liability	**2:1**
Capital to reserve and surplus	**1:4**

If value of fixed assets as on 31-3-2017 amounted to ₹26 lakhs, prepare a balance sheet of the company for the year ended 31-3-2018. [8]

(b) From the following calculate cash from operations :

Particulars	₹ '000	Particulars	₹ '000
To salaries	**4,000**	**By gross profit**	**25,000**
To depreciation	**2,000**	**By profit on sale of land**	**4,000**
To rent	**2,000**	**By income tax refund**	**4,000**
To goodwill written off	**3,000**		
To provision for tax	**6,000**		
To proposed dividend	**5,000**		
To net profit	**11,000**		
	33,000		**33,000**

[4]

Answer :

(a) Working notes

(1) Calculation of sales

Fixed asset to sales = 1.3 (given)

$$\frac{\text{sales}}{\text{fixed assets}} = 3$$

$$\frac{\text{sales}}{26,00,000} = 3$$

Sales = 3× 26,00,000

= ₹ 78,00,000

(2) Calculation of current assets

Fixed asset to sales = 13:11 (given)

Current assets = fixed assets × 11/13

= 26,00,000× 11/13

= ₹ 22,00,000

(3) Calculation of raw material consumption

	₹
Sales	78,00,000
Less: gross profit	11,70,000
Works cost	66,30,000
Raw material consumption (20%of works cost)(given)	13,26,000
Direct wages (10% of works cost)(given)	6,63,000

(4) calculation of stock of raw materials

Stock of raw material = 3 months usage
= 13,26,000× 3/12
= ₹ 3,31,500

(5) Calculation of stock of finished goods

Stock of finished goods = 6% of works cost (given)
= 66,30,000 ×6/100
= ₹ 3,97,800

(6) Calculation current liabilities

Current ratio = 2

$$\frac{\text{current asset}}{\text{current liability}} = 2$$

$$\frac{22,00,000}{\text{current liabilities}} = 2$$

Current liabilities = ₹11,00,000

(7) Calculation of debtors

Average collection period = 60 days

$$\frac{\text{Debtors}}{\text{Credit sales}} \times 365 = 60 \text{ days}$$

$$\frac{\text{Debtors}}{78,00,000} \times 365 = (78,00,000 \times 60)/365$$

= ₹ 12,82,000

(8) Calculation of long term loan

Long term loan to current liabilities = 2:1

$$\frac{\text{Long-term loan}}{\text{Current liabilities}} = 2$$

$$\frac{\text{Long-term loan}}{11,00,000} = 2$$

Long term loan = 2×11,00,000 = ₹22,00,000

(9) Calculation of cash Balance

		₹
Current assets		22,00,000
Less: debtors	12,82,000	
Raw material	3,31,500	
Finished goods stock	3,97,800	(20,11,300)
Cash balance		1,88,700

(10) Calculation of net worth

		₹
Fixed assets		26,00,000
Current assets		22,00,000
Total assets		48,00,000
Less: long term loan	22,00,000	
Current liabilities	11,00,000	33,00,000
Net worth		15,00,000

Net worth = share capital + reserves

Capital to Reserves and surplus = 1:4
Share capital = 15,00,000 ×1/5 = ₹ 3,00,000
Reserve & surplus = 15,00,000 ×4/5 = ₹ 12,00,000

Balance sheet of Star sunshine ltd. as at 31-3-2018

Liabilities	₹	Assets	₹
Share capital	3,00,000	Fixed assets	26,00,000
Reserves & surplus	12,00,000	Current assets	
Long term loans	22,00,000	Stock of raw material	3,31,500
Current liabilities	11,00,000	Stock of finished goods	3,97,800
		Debtors	12,82,000
		Cash	1,88,700
	48,00,000		48,00,000

(b) Statement showing cash generating from operations (₹'000)

Net profit		11,000
Add : Noncash items:		
Depreciation	2,000	
Goodwill written off	3,000	
Proposed dividend	5,000	
Provision for tax	6,000	16,000
		27,000
Less: Non operating income		
Profit on sale of land	4,000	
Income tax refund	4,000	8,000
Funds from operation		19,000
Add : Decrease in current asset		Nil
Increase in current liabilities		
Less : Increase in current asset		Nil
Decrease in current liabilities		
Cash generated from operation		19,000

8 .(a) A trader whose current sales are in the region of ₹ 6,30,000 per annum and an average collection period of 30 days wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information :

Credit policy	Increase in collection period	Increase in sales	Present default
P	**10 days**	**₹ 30,000**	**1.5%**
Q	**20 days**	**₹48,000**	**3%**
R	**30 days**	**₹75,000**	**2%**
S	**45 days**	**₹90,000**	**4%**

The selling price per unit is ₹ 3. Average cost per unit is ₹ 2.25 and variable cost per unit are ₹2.

The current bad debt loss is 1%. Required return on additional investment is 20%.
Assume a 360 days year.
Which of the above policies would you recommend for adoption ? [6]

(b) Mitra Ltd.'s capital structure on 31-3-2009 includes 50,000equity shares of ₹ 100 each , 10,000 debenture of ₹ 150 each carrying 15% rate of interest and term loan of ₹ 20,00,000 repayable in 7 years period with 18% rate of interest.
Matri Ltd.'s balance sheet shows the following capital structure :

20,000 equity shares of ₹ 100 each
32,000 preference share of ₹ 100 each (12%)
General reserve of ₹ 5,00,000
Security premium account ₹ 3,00,000
25,000 14% fully secured Non- convertible debenture of ₹ 100 each
From the above data you are required to calculate the leverage of both the firms and compare with each other. [6]

Answer :

(a) Statement showing the Evaluation of Debtors Policies (TOTAL APPROACH)

	Particulars	Present policy 30 days	Present policy 40 days	Present policy 50 days	Present policy 60 days	Present policy 75 days
		₹	₹	₹	₹	₹
A	Expected profit :					
	(a) Credit sales	6,30,000	6,60,000	6,78,000	7,05,000	7,20,000
	(b) Total cost other than bad debts					
	(i) Variable costs [sales × ₹2/₹3]	4,20,000	4,40,000	4,52,000	4,70,000	4,80,000
	(ii) Fixed cost	52,500	52,500	52,500	52,500	52,500
		4,72,500	4,92,500	5,04,500	5,22,500	5,32,500
	(c) Bad debts	6,300	19,800	13,560	14,100	28,800
	(d)Expected profit [(a)- (b)- (c)]	1,51,200	1,47,700	1,59,940	1,68,400	1,58,700
B	Opportunity cost of investments in receivables	7,875	10,944	14,014	17417	22,188
C	Net benefits (A-B)	1,43,325	1,36,756	1,45,926	1,50,983	1,36,512

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

Working notes:

(i) Calculation of fixed cost = (average cost per unit- variable cost per unit) × no. of units sold
= ₹ (2.25- 2) × 630000/3
= ₹ 52,500

(ii) Calculation of opportunity cost of average investments

Opportunity cost = total cost × $\frac{\text{collection period}}{360}$ × $\frac{\text{rate of return}}{100}$

Present policy = 4, 72,500 × $\frac{30}{360}$ × 20% = ₹ 7875

Policy A = 4, 92,500 × $\frac{40}{360}$ ×20% = ₹10,944

Policy B = 5, 04,500 × $\frac{50}{360}$ × 20% = ₹14,014

Policy C = 5, 22, 500 × $\frac{60}{360}$ × 20% = ₹17,417

Policy D = 5, 32, 500 × $\frac{75}{360}$ × 20% = ₹22,188

(b)

Particulars	Mitra Ltd.	Matri Ltd.
Preference capital	-	32,00,000
Debenture	15,00,000	25,00,000
Term loan	20,00,000	-
Fixed return capital	35,00,000	57,00,000
Add:		
Equity share capital	50,00,000	20,00,000
General reserve	-	5,00,000
Share premium	-	3,00,000
Total capital	85,00,000	85,00,000

Leverage = $\frac{\text{fixed return equal}}{\text{Total capital}} \times 100$

Mitra Ltd. = $\frac{35,00,000}{85,00,000} \times 100$ = 41.18% low

Matri Ltd. = $\frac{57,00,000}{85,00,000} \times 100$ = 67.07% high

Analysis:

It is seen from the above calculations that Mitra Ltd.'s leverage is low as compare to Matri Ltd.'s leverage and hence its financial risk is less as compared to Matri Ltd.

9.(a) Zakhir & Joya Co. has a capital structure of 30% debt and 70% equity .The company is considering various investment proposals costing less than ₹30 lakhs. The company does not want to disturb its present capital structure . The cost of raising the debt and equity are as follows :

Project cost	**Cost of debt**	**Cost of equity**
Above ₹ 5 lakhs	**8%**	**14%**
Above ₹ 5 lakhs and upto ₹20 lakhs	**9%**	**15%**
Above ₹20 lakhs and upto ₹40 lakhs	**10%**	**16%**
Above ₹ 40 lakhs and upto ₹1 crore	**11%**	**16.50%**

Assuming the tax rate is 50%, compute the cost of two projects A and B, whose fund requirements are ₹9 lakhs and ₹23 lakhs respectively. If the project are expected to yield after tax of 11%, determine under what condition if would be acceptable. [5]

(b) A company manufacturing electronic equipments is currently buying 'component X' from a local supplier at a cost of ₹35 each. The company has a proposal to install a machine for the manufacture of the component .Two alternatives are available as under :

(i) Installation of semiautomatic machine involving annual fixed expenses of ₹20 and variable cost of ₹15 per component manufactured .

(ii) Installation of automatic machine involving an annual fixed cost of ₹ 25 lakhs and a variable cost of ₹ 10 per component manufactured

Required :

1) **Find the annual requirement of components to justify a switch over from purchases of components to (i) manufacture of the same by installing semi – automatic machine and (ii) manufacture of the same by installing automatic machine.**
2) **If the annual requirement of the component is 5,00,000 units , which machine would you advise the company to install?**
3) **At what annual volume would you advice the company to select semiautomatic machine instead of automatic machine? [7]**

Answer :

(a) Capital structure : given = 30% Debt and 70% Equity

Calculation of overall cost of capital at different investment outlays

Project cost	K_d (1-t)	k_e	$K_o = w_d k_d + k_e w_e$
Upto 5 lakhs	8% (1 –0.5)= 4%	14%	(0.3×4) + (0.7×14) =11%
₹5 lakhs to ₹ 20 lakhs	9% (1 -0.5)=4.5%	15%	(0.3×4.5)+ (0.7×15) =11.85%
₹20 lakhs to ₹40 lakhs	10% (1 -0.5)=5%	16%	(0.3×5)+ (0.7×16) =12.7%
₹40 lakhs to ₹1 crore	11% (1 –0.5)=5.5%	16.5%	(0.3×5.5)+ (0.7×16.50) =13.2%

Evaluation of given projects:

Project	Investment	K_o	Project return	Result
A	9	11.85%	11%	Return < k_o
B	23	12.70%	11%	Return < k_o

Comment :

Both the projects, A and B is not acceptable as the cost of capital is more than the expected yield of the project . In order to accept the project the expected return should always greater than the cost of capital.

(b) (i) Statement showing comparative output required

Particulars	Semiautomatic	Automatic
Purchases price of component	35	35
Less: variable cost	15	10
Saving	20	25
Component required to be produced to justify the installation of the machine	$₹\frac{20,00,000}{20}$	$₹\frac{25,00,000}{25}$
	1,00,000 units	1,00,000 units

(ii) Selection of machine (when annual requirement is 5,00,000 units)

Particulars	Semiautomatic	Automatic
Variable cost	75,00,000	50,00,000
Add: fixed cost	20,00,000	25,00,000
Total	95,00,000	75,00,000

The total cost in case of Automatic machine is less and hence it will be beneficial to install automatic machine.

(iii) Volume of output for Semiautomatic Machine:

Particulars	Semiautomatic	Automatic	Difference
Fixed cost	20,00,000	25,00,000	(-)5,00,000
Variable cost per unit	15	10	+5

Analysis : the minimum volume required to justify the installation of automatic machine is 1,00,000 units or more .

Volume required to justify automatic machine

= ₹ 5,00,000/₹5 = 1,00,000 components

10. Write short note on any three question out of four questions: [3×4=12]

(a) Wealth maximisation

(b) Foreign Currency Convertible Bonds (FCCBs).

(c) Assumptions of Walter Model

(d) Limitations of Funds Flow Statement.

Answer:

(a) Wealth Maximization:

Wealth maximization is a modern approach of the financial management where we consider the concept of time value of money. According to this criterion, the financial activities of a firm are conducted in such a way so that the net wealth of the firm is maximum. Wealth Maximization is considered as the appropriate objective of an enterprise. When the firms maximizes the stock holders wealth, the individual stockholder can use this wealth to maximize his individual utility. Wealth Maximization is the single substitute for a stock holders utility.

The wealth maximization criterion is more acceptable in case of taking investment decisions in financial management because
(1) In wealth maximization criterion, wealth refers to the net present value. So, wealth maximization refers to the maximization of net present value of a project.
(2) It is considered in wealth maximization criterion as income streams of the entire life of a project are discounted is such a case.
(3) Under this approach, the aspects of risk and uncertainty are considered.

A Stock holders wealth may be calculated by the following way: Stock holders wealth = No. of shares owned x Current stock price per share Higher the stock price per share, the greater will be the stock holders wealth.

(b) Foreign Currency Convertible Bonds

The FCCB means bonds issued in accordance with the relevant scheme and subscribed by a non-resident in foreign currency and convertible into ordinary shares of the issuing company in any manner, either in whole or in part, on the basis of any equity related warrants attached to debt instruments. The FCCBs are unsecured; carry a fixed rate of interest and an option for conversion into a fixed number of equity, shares of the issuer company. Interest and redemption price (if conversion option is not exercised) is payable in dollars. Interest rates are very low by Indian domestic standards. FCCBs are denominated in any freely convertible foreign currency.

FCCBs have been popular with issuers. Local debt markets can be restrictive in nature with comparatively short maturities and high interest rates. On the other hand, straight equity-issue may cause a dilution in earnings, and certainly a dilution in control, which many shareholders, especially major family shareholders, would find unacceptable. Thus, the low coupon security which defers shareholders dilution for several years can be alternative to an issuer. Foreign investors also prefer FCCBs because of the Dollar denominated servicing, the conversion option and the arbitrage opportunities presented by conversion of the FCCBs into equity at a discount on prevailing India market price

(c) Assumptions of Walter Model:

(i) All financing is done through retained earnings; external sources of funds like debt or new equity capital are not used.
(ii) With additional investment undertaken, the firm's business risk does not change. It implies that 'internal rate of return on investment and the cost of capital are constant.
(iii) There is no change in the key variable namely Earning per share and dividend per share. The values (D) or Dividend per share and (E) or Earning per share may be changed in the model to determine results, but, any given value of E and D are assumed to remain constant in determining a given value.
(iv) The firm has a perpetual (very long) life.

(d) Limitation of fund flow statement:

The following are the important limitations of Funds Flow Statement

(i) Funds Flow Statement is not a substitute of Income Statement or a Balance Sheet. It furnished only some additional information as regards changes in Working Capital.

(ii) This statement lacks originality. It is simply rearrangement of data appearing in account books.

(iii) It indicates only the past changes. It can not reveal continuous changes.

(iv) When both the aspects of the transaction are current, they are not considered.