

**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

Answer Question Number 1. All parts of this question are compulsory.

1. Answer the following questions:

(A) Choose the correct answer from the given four alternatives.

[1×6=6]

- (i) The selling price is Rs.20 per unit , variable cost Rs.16 , the breakeven points in units is 4000 units, what is the fixed cost?
 - (a) Rs. 20,000
 - (b) Rs. 16,000
 - (c) Rs. 26,000
 - (d) None of the above
- (ii) Budget period depends upon
 - (a) The nature of budget
 - (b) Type of budget
 - (c) The length of trade cycle
 - (d) All of the above
- (iii) Which of the following operating measures would to see decreasing over time?
 - (a) Merchandise inventory turnover
 - (b) Percentage of on-time deliveries
 - (c) Total quality cost
 - (d) Finished goods inventory turnover
- (iv) The use of management accounting is :
 - (a) none of the above
 - (b) optional
 - (c) mandatory as per the law
 - (d) compulsory
- (v) Which of the following is incorrect :
 - (a) Learning curve may be applied to direct labour and material.
 - (b) Learning curve is a cost reduction technique.
 - (c) Learning curve is a mathematical technique.
 - (d) Learning curve concept provides a means of evaluating the effectiveness of training program
- (vi) Revision of budget is:
 - (a) Unnecessary
 - (b) Inadequate data
 - (c) can't determine
 - (d) necessary

Answer: 1 (A)

- (i) (b)
- (ii) (c)
- (iii) (c)
- (iv) (b)
- (v) (b)
- (vi) (d)

(B) Match the following:

[4×1=4]

	Column 'A'		Column 'B'
1.	Margin of safety	a.	Management
2.	Budget is prepared for	b.	Definite period
3.	Management accounting is a tool to	c.	Profit / PV ratio
4.	Calendar variance	d.	Standard rate per hour × deficit hour worked

Answer: 1 (B)

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

(C) Say True or False for the following question:

[4×1=4]

- (i) Management Accounting reports are internal document.
- (ii) Break even means the volume of production or sale where there is Supernormal profit
- (iii) Zero based budgeting cannot be used for decision making.
- (iv) A fixed budget is prepared for more than one level of activity.

Answer: 1 (C)

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

PART II

Answer any Three questions from question numbers 2 to 5. Each question carries 12 marks
(12×3=36)

2. (a) A company wants to buy a new machine to replace one due to obsolescence. It received offers for two models A and B. Further details regarding these models are given below:

	A	B
Installed capacity (units)	20,000	20,000
Fixed overhead per annum (Rs.)	2,40,000	1,00,000
Estimated profit at the above capacity (Rs.)	1,60,000	1,00,000

The product manufactured using this type of machine (A or B) is sold at Rs.100 per unit.
You are required to determine:

- (i) sales required to recover fixed cost.
- (ii) the level of sales at which both model will earn same profit.
- (iii) the model suitable for different levels of demand for the product. [4]
- (b) P Engineering Company has received an once – off export order for its sole product that would require the use of half of the factory's total capacity, which is estimated at Rs. 4 lakhs units per annum. The condition of the export order is that it has to be accepted in full: acceptance of part quantity is not allowed.

The factory is currently operating at 60% level to meet the demand of its domestic customers. As against the current price of Rs. 6.00 per unit, the export offer is Rs. 4.70 per unit, which is less than the total cost of current production.

The cost breakdown is given below: (Rs. per unit)

Direct material	2.40
Direct labour	1.00
Variable expenses	0.60
Fixed overhead	1.00
Total cost	5.00

The company has the following options:

- (i) Accept the export order and cut back domestic sales as necessary.
- (ii) Remove the capacity constraint by installing necessary balancing equipment and also by working overtime to meet both domestic and export demand. This will increase fixed overhead by Rs. 15,000 annually and additional cost for overtime work will amount to Rs. 40,000 for the year.
- (iii) Appoint a subcontractor to manufacture the additional requirement and meet the domestic and export requirement in full by supplying raw materials, paying a conversion charge @ Rs.2.00 per unit and appointing a supervisor at a salary of Rs. 3,000 per month for checking the quality of the product and controlling operations at the manufacturing unit.
- (iv) Refuse the order.

Required:

- (a) Compute the profits from each of these options & calculate incremental profits compared to the 1st option.
- (b) Your recommendation, with reason, as to which of these options the company should decide upon. [8]

Answer 2

(a)

$$(i) \text{ BEP (units)} = \frac{\text{fixed cost}}{\text{contribution per unit}}$$

For A = 6,000 units
For B = 5,000 units

(ii) Cost BEP (units) = $\frac{2,40,000 - 1,00,000}{20 - 10} = 14,000$ units.

(iii)

No. of units	Model to be chosen
Less than 14,000	B
Equal to 14,000	Any of the two
More than 14,000	A

(b) Working notes :

Calculation of variable cost per unit

	Rs.
Direct material	2.40
Direct labour	1.00
Variable expenses	0.60
Variable cost per unit	4.00

Calculation of fixed cost (at 60% level)

= 4,00,000 units × 60/100 × Rs. 1 per unit = Rs. 2,40,000

Option (i) Profitability statement (accept order and cut back domestic sales as necessary)

Sale		Rs.
Exports	(2,00,000 units × Rs.4.70)	9,40,000
Domestic	(2,00,000 units × Rs.6.00)	12,00,000
		21,40,000
Less: variable cost	(4,00,000 units × Rs.4.00)	(16,00,000)
Contribution		5,40,000
Less: fixed overhead		(2,40,000)
Profit		3,00,000

Option (ii) Profitability statement (installation of balancing equipment and increase capacity to meet both domestic and export demand)

Sales			Rs.
Export	(2,00,000 units × Rs.4.70)		9,40,000
Domestic	(2,40,000 units × ` 6.00)		14,40,000
			23,80,000
Less: variable cost	(4,40,000 units × Rs.4)	17,60,000	
Overtime payment		40,000	18,00,000
Contribution			5,80,000
Less: fixed overhead		2,40,000	
Extra fixed costs		15,000	2,55,000
Profit			3,25,000

Incremental Profit/(Loss) = Rs.25,000

Option (iii) Profitability statement (subcontracting)

Sales (in option b)			23,80,000
Less: variable cost	(4,00,000 units ×	16,00,000	
Sub contract charges :			
Material	(Rs.2.4 × 40,000 units)	96,000	
Conversion	(Rs.2 × 40,000 units)	80,000	(17,76,000)
Contribution			6,04,000
Less: fixed overheads		2,40,000	
Supervision charges		36,000	(2,76,000)
Profit			3,28,000

Incremental Profit/(Loss) = Rs.28,000

Option (iv) Profitability statement (refuse export order)

Sales : domestic	(2,40,000 × Rs.6)	14,40,000
Less: variable cost	(2,40,000× Rs.4)	(9,60,000)
Contribution		4,80,000
Less: fixed cost		(2,40,000)
Profit		2,40,000

Incremental Profit/(Loss) = Rs.(60,000)

Analysis – from the analysis of the above, it is observed that the profit is maximum in option (c) so it is recommended to appoint a subcontractor to manufacture the additional requirement and meet both the domestic as well as export order.

3. (a) Y Ltd. has furnished the following data:

	Budget	Actual
		July 2022
No of working days	25	27
Production in units	20,000	22,000
Fixed overhead	30,000	31,000

Budgeted fixed overhead rate is Rs.1 per hour. In July 2022 the actual hour worked were 31,500 hours.

Calculate the following variances:

1. Fixed overhead efficiency variance
2. Fixed overhead capacity variance
3. Fixed overhead calendar variance
4. Fixed overhead volume variance
5. Fixed overhead expenditure variance
6. Total Fixed overhead Cost Variance

[6]

(b) S Ltd. presents the following information for September, 2022:

Budgeted production of product OP = 200 UNITS.

Standard consumption of Raw Material = 2 kg per unit of OP

Standard price of material = Rs.6 per kg.

Actually 250 units of OP were produced and material X was purchased at Rs.8 per kg and consumed at 1.8 kg per unit of OP. Calculate the material cost variances. [6]

Answer 3

(a) Computation of required values

SRSH (1) Rs.	SRAH (2) Rs.	SRRBH (3) Rs.	SRBH (4) Rs.	ARAH (5) Rs.
1×33,000	1× 31,500	1× 32,400		
33,000	31,500	32,400	30,000	31,000

RBH = 30,000× 27 / 25 = 32,400 hours

Standard time per unit = 30,000 / 20,000 = 1.5 hours

Standard hour for actual output = 22,000 × 1.5 = 33,000

Using unit rate

SRAQ (1) Rs.	SRSQ (2) Rs.	SRRBQ (3) Rs.	SRBQ (4) Rs.	ARAQ (5) Rs.
1.5 × 22,000	1.5×21,000	1.5 × 21,600	1.5 × 20,000	
33,000	31,500	32,400	30,000	31,000

SR = BFHO'S / Budgeted quantity = 30,000 / 20,000 = 1.5 hours

RBQ = 20,000 x 27/25 = 21,600

Units in one hour = (20,000 / 30,000) units

SQ = 31,500 x 2/3 = 21,000

(1) SRSH / SRAQ Standard Cost of Standard FOH's = Rs.33,000

(2) SRAH / SRSQ – Standard Cost of Actual FOH's = Rs.31,500

(3) SRRBH/ SRRBQ – Revised Budgeted FOH's = Rs.32,400

(4) SRBH / SRBQ – Standard Fixed overheads = Rs. 30,000

(5) ARAH/ARAQ – Actual Fixed overheads = Rs. 31,000

- a. FOH efficiency Variance = (1) – (2) = 1,500 (F)
- b. FOH Capacity Variance = (2) – (3) = 900 (A)
- c. FOH Calendar Variance = (3) – (4) = 2,400 (F)
- d. FOH Volume Variance = (1) – (4) = 3,000 (F)
- e. FOH Budget or expensive Variance = (4) – (5) = 1,000 (A)
- f. Total FOH Cost Variance = (1) – (5) = 2,000 (F)

(b) Actual:

Actual production of P from material A = 250 units

For one-unit actual production of P 1.8 kg of material A is required.

Hence, for 250 units of P = 250×1.8=450 kg of material A is required.

Actual cost of output of P for 250 units=250×1.8×8= Rs. 3,600.

Standard:

Standard Again, standard consumption of raw material A for one unit of P is 2kg.

So, as per standard rate for production of 250 units of P = 250×2=500 kg of raw material A is required.

Hence, standard cost of production of 250 kg of P = 250×2×6= Rs. 3,000.

Material Cost Variance= Standard Cost-Actual Cost=3000-3600=600(A) Material Price Variance= (SP-AP) SQ= (6-8)450=900

Material Yield Variance = (SP×SQ) -(SP×SM) = (6×500) -(6×450) =300 (F) Material Usage Variance = (SP×SQ) -(SP×AQ) =(6×500)-(6×450)=300 (F)

4.(a) Production costs of A Ltd. are as follows:

	Level of activity		
	60%	70%	80%
Output (in units)	1,200	1,400	1,600
Costs (in Rs.)			
Direct materials	24,000	28,000	32,000
Direct labour	7,200	8,400	9,600
Factory overhead	12,800	13,600	14,400
Work cost	44,000	50,000	56,000

A proposal to increase production to 90% level of activity is under the consideration of management. The proposal is not expected to involve any increase in fixed factory overheads.

Prepare a statement of cost at 90% level of activity.

[6]

(b) ABC Ltd. which is a system of assessment of Divisional Performance on the basis of residual income has two divisions, Beta and Gamma. Beta has annual capacity to manufacture 15,00,000 numbers of a special component that it sells to outside customers, but has idle capacity.

The budgeted residual income of Gamma is Rs.1,20,00,000 while that of Beta is Rs.1,00,00,000. Other relevant details extracted from the budget of Beta for the current years were as follows:

Particulars	
Sale (outside customer)	12,00,000 units @ Rs.180 per unit
Variables cost per unit	Rs.160
Divisional fixed cost	Rs.80,00,000
Capital employed	Rs.7,50,00,000
Cost of capital	12%

Gamma has just received a special order for which it requires components similar to the ones made by Beta. Fully aware of the idle capacity of Beta, Gamma has asked Beta to quote for manufacture and supply of 3,00,000 numbers of the components with a slight modification during final processing. Beta and Gamma agree that this will involve an extra variable cost of ₹ 5 per unit.

You are required to calculate; the transfer price which Beta should quote to Gamma to achieve its budgeted residual income. [6]

Answer 4

(a) Statement of cost per unit at different levels

Level of activity	60 %	70 %	80 %	90%
Output (in units)	1,200	1,400	1,600	1,800
Variable Cost per unit :	Rs.	Rs.	Rs.	Rs.
Direct material	20.00	20.00	20.00	20.00
Direct labour	6.00	6.00	6.00	6.00
Factory overhead	4.00	4.00	4.00	4.00
Fixed Factory overhead Cost	8,000	8,000	8,000	8,000

A study of unit cost at different levels shows direct material and direct labour to be constant per unit and they are, therefore, variable costs. Factory overheads vary per unit and are, therefore, part variable and part fixed.

Calculation of variable overheads per unit

Level of activity	Production	Overhead
80%	1,600 units	14,400
70%	1,400 units	13,600
Difference	<u>200 units</u>	<u>Rs.800</u>

The difference in overhead represents variable overhead; hence, variable overheads of 200 units are Rs.800.

Variable overhead per unit = $800 / 200 = \text{Rs. } 4$

Fixed factory overhead = Total Factory overhead less variable factory overhead
 = Rs. 14,400 – 1600 x Rs. 4
 = Rs. 8,000

Total Factory overhead Cost at 90% = 1,800 units X Rs.4 p.u. + Rs.8,000 = Rs.15,200

(b) (i) Contribution required at budgeted residual income

Particulars	Rs.
Fixed cost	80,00,000
Profit on 7,50,00,000 ×12%	90,00,000
Residual income	1,00,00,000
Total contribution required	2,70,00,000

Contribution derived from existing units = $12,00,000 \times 20 = \text{Rs. } 2,40,00,000$
Contribution required on 3,00,000 units = $2,70,00,000 - 2,40,00,000 = \text{Rs. } 30,00,000$
Contribution per unit = $30,00,000 / 3,00,000 = \text{Rs. } 10$
Increase in variable cost = Rs.5

$$\begin{aligned}\therefore \text{Transfer price} &= \text{variable cost} + \text{desired residual income} + \text{increase in vc} \\ &= 160 + 10 + 5 \\ &= \text{Rs. } 175\end{aligned}$$

5. **Short notes (any three questions out of four questions)** **[3×4=12]**
(a) 'Control' as a function of management accounting.
(b) Zero-based budgeting (ZBB)
(c) Factors affecting Learning Curve
(d) Limitations of Uniform Costing

Answer 5

(a) 'Control' as a function of management accounting:

A management function aimed at achieving defined goals within an established timetable, and usually understood to have three components: (1) setting standards, (2) measuring actual performance, and (3) taking corrective action.

A typical process for management control includes the following steps: (1) actual performance is compared with planned performance, (2) the difference between the two is measured, (3) causes contributing to the difference are identified, and (4) corrective action is taken to eliminate or minimize the difference.

It is absolutely essential that there should be a system of monitoring the performance of all divisions and departments so that deviations from the desired path are brought to light, without delay and are corrected then and there. This process is termed as control. The aim of this function control is to facilitate accomplishment of the goals in an efficient manner. For the discharge of this important function, management accounting provides meaningful information in a systematic and effective manner. However, the role of accountant is misunderstood. Many consider the accountant as a controller of their performance. Many accountants themselves misunderstand their own role as controllers. The real role of control is effective communication and assists the managers in achieving their goals, as efficiently as possible.

(b) Zero-based budgetin (ZBB):

Zero-based budgeting was devised as a reaction to the traditional incremental approach to budgeting. Zero-based budgeting requires a completely clean sheet of paper every year. Each part of the organisation has to justify over again the budget it requires. The approach is particularly useful for the output-driven approach to budgeting because it forces questions to be asked about the programmes planned and the cost-benefit aspects of the plans. Some advantages and disadvantages of this type of budgeting are being discussed here.

The advantages of zero-based budgeting are:

- 1.) It encourages management to focus on the goals and objectives of the organisation. It forces management to consider whether activities continue to be necessary.
- 2.) It leaves space for new initiatives.

The disadvantages of zero-based budgeting are:

- 1.) It is a time-consuming exercise.
- 2.) It requires management to apply higher skills in planning.

(c) Factors affecting Learning Curve:

The factors affecting Learning Curve are as follows:

- a) Method of Production i.e. whether the production is labour oriented or capital oriented. It changes the slope of learning curve.
- b) Labour Turnover Rate – a high labour turnover rate requires the management to train the new workers frequently and hence the company never achieves the maximum efficiency potential.
- c) Changes in product design, production system etc. which requires the learning curve to start afresh.
- d) Labour Strike, shut down, lock outs also affect learning curve as they interrupt the learning process.

(d) Limitations of Uniform Costing :

- a. The various member-units in an industry differ widely with regard to location, age, condition of plant and degree of mechanization. This difference is sometimes so wide that it does not permit efficient use of uniform costing system.
- b. For smaller units, this system becomes too expensive to operate. The cost incurred in operation of this system may not commensurate with the benefits derived.
- c. Uniform costing system may promote a monopolistic tendency. Thus, it may prove harmful to the consumers.
- d. The standard terminology used in the uniform costing system may not be understood properly by the member companies. However, this objective can be overcome by introduction of uniform Costing Manual.

SECTION- B Financial Management

PART- I

Answer Question Number 6. All parts of this question are compulsory

6. Answer the following questions:

(A) Choose the correct answer from the given four alternatives.

[1×6=6]

- (i) Preference shares must be redeemed within a period of _____ from the date of issue.
 - (a) 20 yrs
 - (b) 50 yrs
 - (c) 30yrs
 - (d) 10 yrs
- (ii) Which of the following is not a source of short term finance
 - (a) Euro Debt Issue
 - (b) Factoring
 - (c) Certificate of deposit
 - (d) Commercial paper
- (iii) _____ ratio is the indicator of the firm's commitment to meet its short term liabilities.
 - (a) Proprietary ratio
 - (b) Super quick ratio
 - (c) Current ratio
 - (d) Quick ratio

- (iv) SPO refers to _____, the second and subsequent time a company raises money from the public directly.
 (a) Second Public Offering
 (b) Subsequent Public Offer
 (c) Subsequent Public Offering
 (d) Seasonal Public Offering
- (v) Investment decision is concerned with :
 (a) Raising of Capital
 (b) Capital- mix or capital structure of a firm
 (c) Distribution of profits of a firm to the shareholders
 (d) Selection of asset in which funds will be invested by a firm
- (vi) Which of the following is not a characteristics of GDR:
 (a) Freely traded in the international market
 (b) Shares underlying the GDR carry voting rights
 (c) Investors earn fixed income by way of dividend
 (d) GDR is a negotiable instrument.

Answer:6

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

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

	Column I		Column II
1	Stochastic Model	A	Upper control limit and lower control limit.
2	Pay -out ratio	B	Dividend per equity share/ earning per equity share
3	ECB	C	Short term lease
4	Operating lease	D	External Commercial Borrowings

Answer:

	Column I		Column II
1	Stochastic Model	A	Upper control limit and lower control limit.
2	Pay -out ratio	B	Dividend per equity share/ earning per equity share
3	ECB	D	External Commercial Borrowings
4	Operating lease	C	Short term lease

(C) State whether the following statements are True or False.

[1× 4=4]

- (i) Operating leverage reflects the impact of change in Fixed Cost on the level of operating profits of the firm.
 (ii) Ratio analysis helps to measure the profitability position.
 (iii) The motive behind holding Working Capital is to meet the business exigencies and to do the regular business transaction
 (iv) A deposit made by one bank to another company normally for a period upto 4 months is referred to as inter corporate deposit.

Answer:

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

PART – II

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

- 7.(a) A company has a profit margin of 25% and asset turnover of 3 times. What is the company's return on investment? How will this return on investment vary if?
- (i) Profit margin is decreased by 5%?
 - (ii) Asset turnover is decreased to 2 times?
 - (iii) Profit margin is increased by 5% and asset turnover is increased to 4 times? [6]

- (b) The following are the summary of cash transactions extracted from the books of AB Ltd.
(Rs. '000)

Balance as on 1 st July , 2021	70
Cash received from sales	5,566
Issue of shares	610
Sale of fixed assets	262
	6,508
Payments to suppliers	4,094
Payments for fixed assets	466
Payments for overhead	230
Wages and salaries	138
Taxation	486
Dividend	170
Repayment of bank loans	500
	6084
Balance as on 30 th June , 2022	424

You are required to prepare a Cash Flow Statement of the company for the period ended 30th JUNE 2022 in accordance with Accounting standard-3 (revised).

[6]

Answer 7

- (a) Net profit ratio = 25% (given)
 Asset turnover ratio = 3 times (given)
 Return on investment = Net Profit ratio × Asset Turnover ratio = 25 × 3 = 75%

(i) If Net Profit ratio is decreased by 5%
 Then Revised Net Profit ratio 20 % (i.e. 25 - 5)
 Asset Turnover ratio (as before) = 3 times
 ROI = 20 × 3 times = 60 %

(ii) If assets turnover ratio is decreased to 2 times:
 Net Profit ratio (as before) = 25%
 Revised Asset Turnover ratio = 2 times
 ROI = 25 % × 2 times = 50 %

(iii) If Net Profit ratio is increased by 5% and Assets Turnover ratio is increased to 4 times:
 Then Revised Net Profit Ratio = 20% (i.e. 25-5)
 Revised Asset Turnover ratio = 4 times
 ROI = 20 % × 4 = 80%

(b) Cash flow statement of S Ltd. for the period ending 30th June ,2022 (Rs.'000)

Cash flow from operating activities		
Receipts from customer		5,566
Payment to suppliers		(4,094)
Payment of wages and salaries		(138)
Payment of overhead		(230)
Payment of taxes		(486)
Net cash flow from operating activities	(a)	618
Cash flow from investing activities		
Proceeds on sale of fixed assets		262
Acquisition of fixed assets		(466)
Net cash outflow in investing activities	(b)	(204)
Cash flow from financing activities		
Proceeds on issue of shares		610
Payment of dividends		(170)
Repayments of bank loans		(500)
Net cash outflow in financing activities	(c)	(60)
Net increase in cash and cash equivalents during the period	(a+b+c)	354
Cash and cash equivalents at the beginning		70
Cash and cash equivalent at the end		424

8.(a) C Ltd. currently has sales of Rs.33,00,000 with an average Credit period of 2 months. At present no discounts are offered to the customers. The management of the company is thinking of offering a discount of 2% on cash sales which may results in:

- (a) the average collection period would reduce to one month.
 - (b) 50% of customers would take advantage of 2% discount.
 - (c) the company normally requires a 25% return on its investment.
- What is the profit if it extends discount on cash sales. [4]

(b) The following financial data have been furnished by A LTD. and B LTD. for the year ended 31-3-2022.

Particulars	A LTD.	B LTD.
Operating leverage	2:1	4:1
Financial leverage	3:1	3:1
Interest charge per annum	Rs.12 lakhs	Rs.10 lakhs
Corporate tax rate	40%	40%
Variable cost as % of sales	60%	50%

Prepare income statement of the two companies. [8]

Answer 8

(a)

		Rs.
Current debtors	$33,00,000 \times 2/12$	5,50,000
Revised debtors	$33,00,000 \times 1/12$	2,75,000
Reduction of investment in debtors balance		2,75,000

Discount to be offered = $33,00,000 \times 50/100 \times 2/100$ = Rs. 33,000
 Increase in profit due to decrease in debtors = $2,75,000 \times 25/100$ = Rs. 68,750
 Net increase in profit = $68,750 - 33,000$ = Rs. 35,750

Analysis: it is suggested to offer the 2% discount on cash sales, which will result in increase in profit by Rs. 35,750.

$$\text{Cost of cash discount} = \frac{2}{100 - 2} \times \frac{365}{60 - 0} \times 100 = \frac{2}{98} \times \frac{365}{60} \times 100 = 12.4\%$$

Therefore, Since cost of discount 12.4% is less than the rate of investment 25%, it is suggested to extend the discount terms for cash sales.

(b) A LTD.

Calculation of EBIT

$$\text{Financial leverage (given)} = 3$$

$$\frac{\text{EBIT}}{\text{EBIT} - \text{Interest}} = 3$$

$$\frac{\text{EBIT}}{\text{EBIT} - 12} = 3$$

$$\text{Therefore, EBIT} = \text{Rs.18 Lakhs}$$

$$\text{Operating leverage (given)} = 2$$

$$\frac{\text{Contribution}}{\text{EBIT}} = 2$$

$$\frac{\text{Contribution}}{18} = 2$$

$$\text{Contribution} = 18 \times 2 = \text{Rs.36 lakhs}$$

Calculation fixed cost

$$\text{Operating leverage (given)} = 2$$

$$\frac{\text{Contribution}}{\text{Contribution} - \text{FC}} = 2$$

$$\frac{36}{36 - \text{FC}} = 2$$

$$\text{Therefore, FC} = \text{Rs.18 Lakhs}$$

Calculation of sales

$$\frac{\text{Contribution}}{\text{Sales}} = 40\%$$

$$\therefore \text{Sales} = \frac{36 \times 100}{40} = \text{Rs.90 lakhs}$$

B LTD.

Calculation of EBIT

$$\text{Financial leverage (given)} = 3$$

$$\frac{\text{EBIT}}{\text{EBIT} - \text{Interest}} = 3$$

$$\frac{\text{EBIT}}{\text{EBIT} - 10} = 3$$

$$\therefore \text{EBIT} = \text{Rs.15 Lakhs}$$

$$\text{Operating leverage (given)} = 4$$

$$\frac{\text{Contribution}}{\text{EBIT}} = 4$$

$$\frac{\text{Contribution}}{15} = 4$$

$$\begin{aligned} \text{Contribution} &= 15 \times 4 \\ &= \text{Rs.60 lakhs} \end{aligned}$$

Calculation fixed cost

Operating leverage (given) = 4

$$\frac{\text{Contribution}}{\text{Contribution- FC}} = 4$$

$$\frac{60}{60-\text{FC}} = 4$$

$$\therefore \text{FC} = \text{Rs.45 Lakhs}$$

Calculation of sales

$$\frac{\text{Contribution}}{\text{Sales}} = 50\%$$

$$\therefore \text{Sales} = 60 \times 100 / 50$$

$$= ₹120 \text{ lakhs}$$

Particulars		A LTD.	B LTD.
Operating leverage	(Contribution/EBIT)	2	4
Financial leverage	(EBIT/EBT)	3	3
Combined leverage	(Contribution/EBT)	6	12
P.V.Ratio	(Contribution/sales)	40%	50%

Income Statement of A LTD. (Rs in lakhs)		Income statement of B LTD. (Rs in lakhs)	
Sales	90	Sales	120
Variable cost(60%)	54	Variable cost(50%)	60
Contribution	36	Contribution	60
Less: fixed cost	18	Less: fixed cost	45
EBIT	18	EBIT	15
Less: interest	12	Less: interest	10
EBT	6	EBT	5
Tax@ 40%	2.4	Tax@ 40%	2
EAT	3.6	EAT	3

9. (a) Alpha Ltd. is proposing to sell a 6 year bond off 6,000 at 5% rate of interest per annum. The bond amount will be amortised equally over its life. If he expects a minimum rate of return of 10%, what is the maximum price he should pay? [4]

A Ltd. has decided to purchases a machine to augment the company's installed capacity to meet the growing demand for its products. There are two machines under consideration of the management. The relevant details including estimated yearly expenditure and sales are given below: all sales are on cash basis. corporate income – tax rate is 40 %. Interest on capital may be assumed to be 10%.

Particulars	Machine X (Rs.)	Machine Y (Rs.)
Initial investment required	4,00,000	2,00,000
Estimated annual sales	6,00,000	4,00,000
Cost of production (estimated):		
Direct materials	50,000	50,000
Direct labour	40,000	40,000
Factory overheads	60,000	40,000
Administration costs	20,000	10,000
Selling and distribution costs	10,000	10,000

The economic life of machine X is 2 years, while it is 3 years for the second machine. The scrap values are Rs. 40,000 and Rs. 25,000 respectively. You are required to find out the best machine based on 'Payback Method'. [8]

Answer 9

(a) The amount of interest will go on declining as the outstanding amount of bond will be reducing due to amortization. The amount of interest for six years will be:

First year	: 6000 × 5%	= Rs. 300
Second year	: 6000 – 1000 × 5%	= Rs. 250
Third year	: 5000 – 1000 × 5%	= Rs. 200
Fourth year	: 4000 – 1000 × 5%	= Rs. 150
Fifth year	: 3000 – 1000 × 5%	= Rs. 100
Sixth year	: 2000 – 1000 × 5%	= Rs. 50

The outstanding amount of bond will be zero at the end of sixth year.

Since PQR will have to return Rs.1000 every year, the outflows every year will consists of interest payment and repayment of principal:

First year	= 1000 + 300 = Rs. 1300
Second year	= 1000 + 250 = Rs. 1250
Third year	= 1000 + 200 = Rs. 1200
Fourth year	= 1000 + 150 = Rs. 1150
Fifth year	= 1000 + 100 = Rs. 1100
Sixth year	= 1000 + 50 = Rs. 1050

The above cash flows of six years will be discounted with cost of capital. Here the expected rate i.e. 10 % will be used.

Value of the bond is calculated as follows:

$$V_b = \frac{1300}{(1.1)^1} + \frac{1250}{(1.1)^2} + \frac{1200}{(1.1)^3} + \frac{1150}{(1.1)^4} + \frac{1100}{(1.1)^5} + \frac{1050}{(1.1)^6}$$

$$= \text{Rs. } 5180.830$$

(b) Calculation of payback period of machines

		Machine X	Machine Y
Initial investment	(i)	4,00,000	2,00,000
Sales	(a)	6,00,000	4,00,000
Costs:			
Direct material		50,000	50,000
Direct labour		40,000	40,000
Factory overhead		60,000	40,000
Depreciation		1,80,000	58,333
Administrative cost		20,000	10,000
Selling and distribution cost		10,000	10,000
Interest on capital		40,000	20,000
Total cost	(b)	4,00,000	2,28,333
Profit before tax	(a)-(b)	2,00,000	1,71,667
Less: tax @ 40%		80,000	68,667
Profit after tax		1,20,000	1,03,000
Add: depreciation		1,80,000	58,333
Net cash flow	(ii)	3,00,000	1,61,333
Payback period (years)	(i)/(ii)	1.333	1.2397

Analysis: Machine Y having low pay period, hence it is preferred to the another machine.

10. Write short notes on any three out of four questions: [3×4=12]
- (a) Global Depository Receipt (GDR)
 - (b) Importance of Cash Management
 - (c) Significance of funds flow statement
 - (d) Factoring

Answer:

(a) Global Depository Receipt (GDR)

A GDR is a negotiable instrument, basically a bearer instrument which is traded freely in the international market either through the stock exchange or over the counter or among Qualified International Buyers (QIB). It is denominated in US Dollars and represents shares issued in the local currency.

Characteriscs

1. The shares underlying the GDR do not carry voting rights.
2. The instruments are freely traded in the international market.
3. The investors earn fixed income by way of dividend.
4. GDRS can be converted into underlying shares, depository/custodian banks reducing the issue.

(b) Some of the importance of Cash Management is:

- (i) Cash Management ensures that the firm has sufficient cash during peak times for purchase and for other purposes.
- (ii) Cash Management help to meet obligatory cash out flows that are all due.
- (iii) Cash Management assists in planning capital expenditure projects.
- (iv) Cash Management helps to arrange for outside financing at favorable terms and conditions, if necessary.
- (v) Cash Management helps to allow the firm to take advantage of discount, special purchases and business opportunities.
- (vi) Cash Management helps to invest surplus cash for short or long term periods to keep the idle funds fully employed.

(c) Significance of funds flow statement

It is very useful tool in the Financial Managers analytical kit. It provides a summary of management decisions on financing activities of the firm and investment policy.

The following are the advantages of Funds Flow Statement.

- (i) Analysis of financial operations: The Funds Flow Statement reveals the net effect of various transactions on the operational and financial position of the business concern. It determines the financial consequences of business operations. This statement discloses the causes for changes in the assets and liabilities between two different points of time. It highlights the effect of these changes on the liquidity position of the company.
- (ii) Financial policies: Funds Flow Statement guides the management in formulating the financial policies such as dividend, reserve etc.
- (iii) Control device: It serves as a measure of control to the management. If actual figures are compared with budgeted projected figures, management can take remedial action if there are my deviations.
- (iv) Evaluation of firm's financing: Funds Flow Statement helps in evaluating the firm's financing. It shows how the funds were obtained from various sources and used in the past. Based on this, the financial manager can take corrective action.

(d) Factoring:

Factoring, as a fund based financial service, provides resources to finance receivables as well as facilitates the collection of receivables. It is another method of raising short-term finance through account receivable credit offered by commercial banks and factors. A commercial bank may provide finance by discounting the bills or invoices of its customers. Thus, a firm gets immediate payment for sales made on credit. A factor is a financial institution which offers services relating to management and financing of debts arising out of credit sales. Factoring is becoming popular all over the world on account of various services offered by the institutions engaged in it. Factors render services varying from bill discounting facilities offered by commercial banks to a total take-over of administration of credit sales including maintenance of sales ledger, collection of accounts receivables, credit control and protection from bad debts, provision of finance and rendering of advisory services to their clients. Factoring, may be on a recourse basis, where the risk of bad debts is borne by the client, or on a non-recourse basis, where the risk of credit is borne by the factor.