Paper 10- Cost & Management Accounting and Financial Management

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

Section – A (Cost & Management Accounting)

PART – I

1. Answer the following questions:

(a) Multiple choice questions: [1x6=6]

(i) The cost per unit of a product manufactured in a factory amounts to ₹40 (75% variable) when the production is 10,000 units. When production increases by 25%, the cost of production will be ₹_____ per unit.
(a)₹35
(b)₹36.25
(c)₹37.5
(d)₹38

(ii) Fixed budget is useless for comparison when the level of activity _____.
(a)Increases
(b)Decreases
(c)Fluctuates both ways
(d)Constant

(iii) The use of management accounting is
(a)Mandatory as per the law
(b)Compulsory
(c)Optional
(d)None of the above

(iv) The time taken for initial unit of a product is 1000 hours. At 80% learning rate what is the total time for 4 units?
(a)800 hours
(b)1000 hours
(c)1600 hours
(d)2560 hours

(v) Sara Ltd. has extracted the following details from the standard cost card of one of its products:
Direct Labour 4.5 hours @ ₹6.40 per hour
During March 2022, Sara Ltd. produced 2,300 units of the product and incurred direct wages costs of ₹64,150. The actual hours worked were 11,700.
The direct labour rate and efficiency variances were:

	Rate (₹)	Efficiency (₹)
(a)	₹10,730 (F)	₹8,640 (A)
(b)	₹10,730 (F)	₹7,402 (A)
(c)	₹2,090 (F)	₹7,402 (A)
(d)	₹2,090 (F)	₹8,640 (A)

(vi) Which of the following statements are true in case of Market price based transfer price?
(a)It is an extensive arbitration system in fixing the transfer prices between the divisions.

(b)Profits resulting from market price based transfer prices are good parameters for performance evaluation of buying divisions only.

(c)Actual costs are fluctuating and hence difficult to ascertain. On the other hand, market prices can be easily ascertained.

(d)None of the above

Answer:

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

(b) Match the following: **[1x4=4]**

	Column 'A'		Column 'B'
1.	**Profitability**	**A**	**Detailed short-term cash budget**
2.	**Goal Congruence**	**B**	**Develops cost consciousness among the members of the industry**
3.	**The Receipt & Payment Method**	**C**	$\frac{\text{Contribution}}{\text{Key Factor}}$
4.	**Inter Firm Comparison**	**D**	**The objectives of divisional managers match with those of the organisation**

Answer:

1. – C
2. – D
3. – A
4. – B

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

(i) Fixed Overhead Volume Variance arises due to rise in general price level.

(ii) The master budget is prepared first and all other budgets are sub ordinate to it.

(iii) The breakeven point will be lower if the selling price is increased but the amount of cost does not change.

(iv) Management Accounting is largely based on estimates. It does not deal with actual, alone, and thus total accuracy is not ensured under Management Accounting.

Answer:

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

PART – II

Answer any three Question from Q. No. 2, 3, 4, 5. Each question carries 12 marks.

2. (a) Partha Chemicals Ltd. has two factories with similar plant and machinery for manufacture of Soda Ash. The Board of Directors of the company has expressed the desire to merge them and to run them as one integrated unit. The additional fixed cost involved in the merger is estimated at ₹10 lakhs. Following data are available in respect of these two factories:

Factory	A	B
Capacity in operation	60%	100%
Turnover (₹)	120 lakhs	300 lakhs
Variable Cost (₹)	90 lakhs	220 lakhs
Fixed Cost (₹)	25 lakhs	30 lakhs

Find out:
(i) What should be the capacity of the merged factory to be operated for break-even?
(ii) What is the profitability of working 80% of the integrated capacity?
(iii) What turnover will give an overall profit of ₹60 lakhs? [2+2+2=6]

(b) From the following particulars, find the most profitable product mix and prepare a statement of profitability of that mix: -

Particulars	Product X	Product Y	Product Z
Units budgeted to be produced and sold	1,800	3,000	1,200
Selling price per unit (₹)	60	55	50
Requirement per unit:			
Direct Materials	5 kg	3 kg	4 kg
Direct Labour	4 hrs	3 hrs	2 hrs
Variable Overheads	₹7	₹13	₹8
Fixed Overheads	₹20	₹20	₹20
Cost of Direct Materials per kg.	₹4	₹4	₹4
Direct Labour Hour Rate	₹2	₹2	₹2
Maximum Possible Units of Sales	4,000	5,000	1,500

All the three products are produced from the same direct material using the same type of machines and labour. Direct labour, which is the key factor, is limited to 18,600 hours. [6]

Answer:

(a)

Factory A:

Capacity in operation	60%	100%
Turnover (₹)	120 lakhs	200 lakhs
Variable Cost (₹)	90 lakhs	150 lakhs
Fixed Cost (₹)	25 lakhs	25 lakhs

	Factory A	Factory B	Additional Cost	Merged Factory (A+B)
Capacity	100%	100%		100%
Turnover (₹)	200 lakhs	300 lakhs		500 lakhs
Variable Cost (₹)	150 lakhs	220 lakhs		370 lakhs
Fixed Cost (₹)	25 lakhs	30 lakhs	10 lakhs	65 lakhs

(i) P/V ratio: $\frac{500 - 370}{500} = \frac{13}{50}$ or 26%

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{P/V ratio}} = 65,00,000 \times \frac{50}{13} = ₹250 \text{ lakhs}$$

or, $\frac{250}{500} \times 100$ = 50% capacity level.

(ii) At 80% capacity, sales over BEP would be:
30% of 500 lakhs = ₹150 lakhs
∴ Increase in contribution = Increase in profit (fixed cost remaining constant)

$$= \frac{13}{50} \times 1,50,00,000 = ₹39,00,000$$

(iii) To earn a profit of ₹60 lakhs, required contribution
= ₹65 lakhs + ₹60 lakhs = ₹125 lakhs.

$$\therefore \text{Required Sales} = \frac{\text{Required Cont.}}{\text{P/V Ratio}} = \frac{1,25,00,000}{13} \times 50 = ₹4,80,76,923.$$

(b) Statement of Most Profitable Product Mix

Particulars	Products		
	X (₹)	Y (₹)	Z (₹)
Selling price per unit (i)	60	55	50
Variable Cost:			
Direct Material	20	12	16
Direct Labour	8	6	4
Variable Overhead	7	13	8
Total Variable Costs (ii)	35	31	28
Contribution per unit [(i) – (ii)]	25	24	22
Contribution per hour (Refer to Note 1)	6.25	8	11
Ranking of most profitable product mix	III	II	I

Statement of Profitability of the most profitable product mix

Particulars	Products			Total
	X	Y	Z	
Ranking	III	II	I	
Units produced and sold (Refer to Note 2)	150	5,000	1,500	
Contribution per unit (₹)	25	24	22	
Total Contribution on units sold (₹)	₹3750 (150 ×₹25)	₹1,20,000 (150 ×₹25)	₹33,000 (1500 ×₹22)	1,56,750
Less: Fixed Cost (₹) (Refer to Note 3)				1,20,000
Profit (₹)				36,750

Notes:

(1)

Particulars	Products		
	X	Y	Z
Contribution per unit (₹)	25	24	22
Direct labour hours per unit	4	3	2
Contribution per hour (₹)	$\frac{25}{4} = 6.25$	$\frac{24}{3} = 8$	$\frac{22}{2} = 11$

(2) Here direct labour hour is the key factor and only 18,600 hours are available to produce the three products. The available 18,600 hours are utilized in the order of

the ranking assigned i.e. first of all product Z then product Y lastly product X will be produced.

The number of units of each product to be produced, will depend upon the maximum possible sale of each product. The details of the products to be produced keeping in view of available hours and their ranking are as below:

		Total Hours utilized
Product Z	1,500 units × 2 hrs.	3,000
Product Y	5,000 units × 3 hrs.	15,000
Product X	150 units × 4 hrs.	600
	Total Hours	18,600

Particulars	Products			Total
	X	Y	Z	
Budgeted units to be produced	1,800	3,000	1,200	
Fixed overhead (₹) per unit	20	20	20	
Total fixed overhead (₹)	36,000	60,000	24,000	1,20,000

3. (a) The budgeted output of a manufacturing company for 2022-23 was 5,000 units. The financial results in respect of actual output of 4,800 units achieved during the year were as under:

	₹		₹
Direct Material	**29,700**	**Fixed Overheads**	**39,000**
Direct Wages	**44,700**	**Profit**	**36,600**
Variable Overheads	**72,750**	**Sales**	**2,22,750**

The standard direct wages rate is ₹4.50 per hour and the standard variable overhead rate is ₹7.50 per hour.

The cost accounts recorded the following variances for the year:

Variances	Favourable (₹)	Adverse (₹)
Material Price	**-**	**300**
Material Usage	**-**	**600**
Wage rate	**750**	**-**
Labour efficiency	**-**	**2,250**
Variable overhead expense	**3,000**	**-**
Variable overhead efficiency	**-**	**3,750**
Fixed overhead expense	**-**	**1,500**
Selling price	**6,750**	**-**

You are required to:

(i) Prepare a statement showing the original budget and the standard product cost sheet per unit.

(ii) Prepare a statement showing the reconciliation of originally budgeted profit and actual profit. [3+3=6]

(b) The following information is available from the cost records of a Company for February, 2022:

	₹
Materials purchased: 20,000 pieces	**88,000**
Materials consumed: 19,000 pieces	
Actual wages paid for 4,950 hours	**24,750**
Factory Overhead Incurred	**44,000**
Factory Overhead Budgeted	**40,000**

Units Produced 1,800

Standard Rates and prices are:

Direct Material Rates ₹4 per piece.

Standard Input 10 pieces per unit.

Direct Labour Rate ₹4 per hour.

Standard requirement 2.5 hours per unit.

Overhead ₹8 per labour hour.

Required:

(A) Show the Standard Cost Card.

(B) Compute all material, labour and overhead variances for February 2022.

[6]

Answer:

(a) (i) Statement showing the original budget and standard cost sheet per unit

Particulars	Actual cost, profit & sales of 4,800 units (₹)	Adjustment of variances (₹)		Standard cost, profit & sales of 4,800 units (₹)	Standard cost, profit & sales of 5,000 units	
		(F)	(A)		Total (₹)	p.u.
Sales	2,22,750					
Sales price variance		6,750	-	2,16,000	2,25,000	45.00
Direct Material	29,700					
Material price variance		-	300			
Material usage variance		-	600			
Standard material cost				28,800	30,000	6.00
Direct wages	44,700					
Wages rate variance		750	-			
Labour efficiency variance		-	2,250			
Standard Labour cost				43,200	45,000	9.00
Variable overheads	72,750					
V.O. expenditure variance		3,000	-			
V.O. efficiency variance		-	3,750			
Standard variable overhead				72,000	75,000	15.00
Fixed overheads	39,000					
Fixed overhead exp. variance		-	1,500			
Budgeted F.O.				37,500	37,500	7.50
Cost of sales	**1,86,150**			**1,81,500**	**1,87,500**	**37.50**
Profit	**36,600**			**34,500**	**37,500**	**7.50**

(ii) Statement showing the reconciliation of original budgeted profit and actual profit

Particulars	Details (₹)	Amount (₹)
Budgeted Profit		37,500
Add: Favourable cost variances		
Wage Rate	750	
Variable overhead expense	3,000	3,750
		41,250
Add: Sales price variance		6,750
		48,000
Less: Adverse cost variances		
Material Price	300	

Material usage	600	
Labour efficiency	2,250	
Variable overhead efficiency	3,750	
Fixed overhead expense	1,500	8,400
		39,600
Less: Sales margin volume variance [5,000 – 4,800 = 200 units × ₹7.50 profit per unit]		1,500
		38,100
Less: Fixed overhead volume variance [200 units × ₹7.50 budgeted fixed overhead per unit]		1,500
Actual Profit		36,600

(b)

SQ for AO (units)	SP (₹)	SC for AO (₹)	AQ (units)	AP (₹)	AC (₹)
18,000	4	72,000	19,000	4.4	83,600

Std. Hrs. for AO	SR (₹)	SC for AO (₹)	Actual Hrs.	AR (₹)	AC (₹)
4,500	4	18,000	4,950	5	24,750

(A) Standard Cost Card (per unit)

Particulars	₹
Direct Material (10 pieces @ ₹4 per piece)	40
Direct Labour (2.5 hours @ ₹4 per hour)	10
Fixed Overheads (2.5 hours @ ₹8 per hour)	20
Total Standard Cost	**70**

(B)

(i) Material Cost Variance
= Standard Cost of Material for Actual Output – Actual Material Cost
= (1,800 × 10 pieces × ₹4) – {(₹88,000 ÷ 20,000) × 19,000}
= ₹72,000 – ₹83,600 = ₹11,600 (A)

(ii) Material Price Variance
= Actual quantity (Standard price per piece – Actual price per piece)
= 19,000 pieces (₹4 – ₹4.40) = ₹7,600 (A) [Refer to Working Note]

(iii) Material Usage Variance
= Standard Price (Standard Quantity – Actual Quantity)
= ₹4 × (18,000 pieces – 19,000 pieces) = ₹4,000 (A)

(iv) Total Labour Cost Variance
= Standard Cost of Labour for actual output – Actual Labour Cost
= (1,800 × 2.5 hours × ₹4) – ₹24,750
= ₹18,000 – ₹24,750 = ₹6,750 (A)

(v) Labour Rate Variance
= Actual hours (Standard rate per hour - Actual hours)
= 4,950 hours (₹4 – ₹5) = ₹4,950 (A)

(vi) Labour Efficiency Variance
= Standard rate (Standard hours – Actual hours)
= ₹4 (4,500 hours – 4,950 hours) = ₹4 × 450 hours = ₹1,800 (A)

(vii) Total Fixed Overhead Cost Variance
= (Overheads recovered on actual output – Actual overhead)

= (1,800 units × 2.5 hours × ₹8) – ₹44,000 = ₹36,000 – ₹44,000 = ₹8,000 (A)

(viii) Fixed Overhead Expenditure Variance
= (Budgeted fixed overhead – Actual fixed overhead)
= ₹40,000 – ₹44,000 = ₹4,000 (A)

(ix) Efficiency Variance
= Standard fixed overhead (Standard hours for actual output – Actual hours)
= ₹8 {(2.5 hours × 1,800) – 4,950 hours}
= ₹8 (4,500 hours – 4,950 hours) = ₹3,600 (A)

(x) Capacity Variance
= Std. fixed overhead (Actual capacity hours – Budgeted capacity hours)
= ₹8 (4,950 hours – 5,000 hours) = ₹400 (A)

* Budgeted Capacity hours = $\frac{\text{Factory Overhead Budgeted}}{\text{Std. Overhead per hour}} = \frac{40,000}{8}$ = 5,000 hours.

Working Note: Actual Cost of material per piece

= $\frac{88,000}{20,000 \text{ pieces}}$ = ₹4.40

4. (a) The following data are available in a manufacturing company for a yearly period:

Fixed Expenses:	**₹ lakhs**
Wages and salaries	**6.5**
Rent, rates and taxes	**4.6**
Depreciation	**5.4**
Sundry administration expenses	**3.5**
Semi-variable expenses (At 50% of activity):	
Maintenance and repairs	**3.5**
Indirect labour	**7.9**
Sales department salaries, etc.	**3.8**
Sundry administration expenses	**2.8**
Variable expenses (At 50% of activity):	
Material	**21.7**
Labour	**20.4**
Other expenses	**7.9**
Total Cost	**88.0**

Assume that the fixed expenses remain constant for all levels of production; semi-variable expense remain constant between 45 per cent and 65 per cent of capacity; increase by 10 per cent between 65 per and cent 80 per cent capacity and by 20 per cent between 80 per cent and 100 per cent capacity.

Sales at various levels are:	**(₹ in lakhs)**		**(₹ in lakhs)**
50% capacity	**100**	**90% capacity**	**180**
60% capacity	**120**	**100% capacity**	**200**
75% capacity	**150**		

Prepare a flexible budget for the year and forecast the profit at 60 per cent, 75 per cent, 90 per cent and 100 per cent of capacity. [7]

(b) Himalaya Ltd. has produced its first 10 units of product D. The customer is enquiring about the cost of a further 30 units of product D. The total cost of the original 10 units was:

	₹
Materials	**2,000**
Variable labour costs (500 hours at ₹10 per hour)	**5,000**
Variable overheads	**1,000**

Other overheads	**1,000**
Machine tool costs	**2,000**
Total Cost	**11,000**

Additional Information:

1. **Variable overheads are directly affected by variable labour costs.**
2. **Other overheads are estimated at 20% of variable labour costs.**
3. **For Machine tool costs, all machine tools can still be used although all costs recovered on first order.**

Use an 80% learning curve to estimate the total costs for a new batch of 30 units of Product D. [5]

Answer:

(a) Flexible Budget for the Period (₹ in lakhs)

Particulars	Capacity				
	50%	60%	75%	90%	100%
Sales	**100.00**	**120.00**	**150.00**	**180.00**	**200.00**
Fixed Expenses:					
Wages and Salaries	6.50	6.50	6.50	6.50	6.50
Rent, rates and taxes	4.60	4.60	4.60	4.60	4.60
Depreciation	5.40	5.40	5.40	5.40	5.40
Sundry admn. expenses	3.50	3.50	3.50	3.50	3.50
Total Fixed Cost (A)	**20.00**	**20.00**	**20.00**	**20.00**	**20.00**
Semi-variable expenses:					
Maintenance and repairs	3.50	3.50	3.85	4.20	4.20
Indirect labour	7.90	7.90	8.69	9.48	9.48
Sales dept. salaries, etc.	3.80	3.80	4.18	4.56	4.56
Sundry admn. expenses	2.80	2.80	3.08	3.36	3.36
Total Semi-variable expenses (B)	**18.00**	**18.00**	**19.80**	**21.60**	**21.60**
Variable expenses:					
Material	21.70	26.04	32.55	39.06	43.40
Labour	20.40	24.48	30.60	36.72	40.80
Other expenses	7.90	9.48	11.85	14.22	15.80
Total Variable expenses (C)	**50.00**	**60.00**	**75.00**	**90.00**	**100.00**
Total Cost (A+B+C)	**88.00**	**98.00**	**114.80**	**131.60**	**141.60**
Profit (Sales minus Total Cost)	**12.00**	**22.00**	**35.20**	**48.40**	**58.40**

(b) Note: Machine cost is ignored, since it is already absorbed by the first batch.

Table showing the labour cost projection considering 80% learning effect

Incremental quantity (units)	Cumulative quantity (units)	Average labour hours for the batch of 10 units (hours)	Cumulative labour cost (₹)	Calculation of labour cost (₹)
10	10	500	5,000	500 hrs x 1 batch x ₹10
10	20	500 x 0.80	8,000	400 hrs x 2 batches x ₹10
20	40	500 x 0.80 x 0.80	12,800	320 hrs x 4 batches x ₹10

For 30 units:

Labour cost	= ₹12,800 - ₹ 5,000	= ₹7,800
Variable overhead	= 20% of ₹7,800	= ₹1,560
Other overhead	= 20% of ₹7,800	= ₹1,560

Total estimated cost for additional 30 units:

Material	₹6,000
Labour	₹7,800
Variable overhead	₹1,560
Other overhead	₹1,560
	₹16,920

5. Write short notes on any three of the following: [4x3=12]

(a) Distinguish between Cost Accounting and Management Accounting.
(b) Enumerate the distinctive features of Learning Curve Theory.
(c) Enumerate the limitations of Inter-Firm Comparison. Mention the steps to overcome these limitations.
(d) Differentiate between Fixed Budget and Flexible Budget.

Answer:

(a) Difference between Cost Accounting and Management Accounting

Sl. No.	Basis	Cost Accounting	Management Accounting
(i)	Nature	Cost Accounting records the quantitative aspect only.	Management Accounting records both qualitative and quantitative aspect.
(ii)	Objective	It records the cost of producing a product and providing a service.	It provides information to management for planning and coordination.
(iii)	Area	It deals with cost ascertainment only.	It is wider in scope as it includes financial accounting, budgeting, taxation, planning etc.
(iv)	Recording of data	It uses both past and present figures.	It is focused with the projection of figures for future.
(v)	Development	Development of Cost Accounting is related to industrial revolution.	It has been developed in accordance to the need of modern business world.
(vi)	Rules and Regulation	It follows certain principles and procedures for recording costs of different products.	It does not follow any specific rules and regulations.

(b) Distinctive Features of Learning Curve Theory

(i) Learning curve is not a cost reduction technique. It is a naturally occurring human phenomenon.
(ii) It is a human characteristic that a person engaged in repetitive task will improve his performance over time.
(iii) In the initial stage of production, generally the workers do not have the confidence of completing the job successfully. When they produce a few units, they gain confidence. People learn from errors.
(iv) When the workers produce more and more units, they come to know the problems and their reasons. Now they are able to avoid the problems.
(v) The workers are able to find the new methods of doing the job; they are able to complete task in less time.
(vi) Better equipments and tools are developed.
(vii) Better product designs lead to increased efficiency.

(c) Limitations of Inter-Firm Comparison

The practical difficulties that are likely to arise in the implementation of a scheme of inter-firm comparison are:

a. The top management may not be convinced of the utility of inter-firm comparison.
b. Reluctance to disclose data which a concern considers to be confidential.
c. A sense of complacence on the part of the management who may be satisfied with the present level of profits.
d. Absence of a proper system of Cost Accounting so that the costing figures supplied may not be relied upon for comparison purposes.
e. Non-availability of a suitable base for comparison.

These difficulties may be overcome to a large extent by taking the following steps:

a. 'Selling' the scheme through education and propaganda. Publication of articles in journals and periodicals, and lecturers, seminars and personal discussions may prove useful.
b. Installation of a system which ensures complete secrecy.
c. Introduction of a scientific cost system.

(d) Difference between Fixed and Flexible Budgets

Sl. No.	Fixed Budget	Flexible Budget
(i)	It does not change with actual volume of activity achieved. Thus it is known as rigid or inflexible budget.	It can be recasted on the basis of activity level to be achieved. Thus it is not rigid.
(ii)	It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	It consists of various budgets for different levels of activity.
(iii)	Here as all costs like – fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.	Here analysis of variance provides useful information as each cost is analysed according to its behaviour.
(iv)	If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture.	Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations.
(v)	Comparison of actual performance with budgeted targets will be meaningless specially when there is a difference between the two activity levels.	It provides a meaningful basis of comparison of the actual performance with the budgeted targets.

Section – B (Financial Management) [50 marks]

PART – I

6. Answer the following questions:

(a) Multiple choice questions: [1x6=6]

(i) The discount rate which forces net present values to become zero is classified as
(a) positive rate of return
(b) negative rate of return
(c) external rate of return

(d) internal rate of return

(ii) The term Float is used in
(a) Receivable Management
(b) Cash Management
(c) Marketable Management
(d) Inventory Management

(iii) SPO refers to _____, the second and subsequent time a company raises money from the public directly.
(a) Second Public Offering
(b) Subsequent Public Offering
(c) Subsequent Public Offer
(d) Seasonal Public Offering

(iv) If EBIT = ₹1,00,000, Fixed Assets = ₹2,00,000, Sales = ₹10,00,000 and Variable Cost = ₹7,00,000. Then, the Operating Leverage will be
(a) 2
(b) 6
(c) 3
(d) 4

(v) Net Income Approach to capital structure decision was proposed by
(a) J. E. Walter
(b) M.H. Miller and D. Orr
(c) E. Solomon
(d) D. Durand

(vi) Find the present value of ₹1,000 receivable 6 years hence if the rate of discount is 10 percent.
(a) 564.5
(b) 554.5
(c) 574.5
(d) 600

Answer:

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

(b) Match the following: **[1x4=4]**

	Column I		Column II
1	Defensive Interval Ratio	A	Modigliani and Miller Hypothesis
2	Theory of Capital structure	B	Liquidity of a firm in relation to its ability to meet daily operating expenditure.
3	Stochastic Model	C	Value of share is worth the present value of its future dividend rather than its earnings.
4	Myron Gordon	D	Control Limits

Answer:

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

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

(i) **Low degree of operating leverage and high degree of financial leverage is not an ideal situation.**

(ii) **When NPV is zero PI will be one.**

(iii) **Net Present Value method cannot serve as the best decision criteria for selection of projects when they are mutually exclusive.**

(iv) **IRR is also known as the highest opportunity cost that the project can bear.**

Answer:

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

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 20% 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 increased by 5%?
(ii) Profit margin is decreased by 5% and asset turnover is increase to 4 times?

If value of fixed assets as on 31-3-2022 amounted to ₹26 lakhs, prepare a balance sheet of the company for the year ended 31-3-2023. [4]

7. (b) VW LTD. gives you the following information for the year ended 31st March, 2023:

(i) **Sales for the year totalled ₹96,00,000. The company sells goods for cash only.**

(ii) **Cost of goods sold was 60% of sales. Closing inventory was higher than opening inventory by ₹20,000.**

(iii) **Tax paid amounted to ₹7,00,000. Other expenses totalled ₹21,45,000. Outstanding expenses on 31st March, 2022 and 31st March, 2023, totalled ₹82,000 and ₹91,000 respectively.**

(iv) **New machinery and furniture costing ₹10,50,000 in all were purchased. One equipment was sold for ₹20,000.**

(v) **A right issue was made of 50,000 shares of ₹10 each at a premium of ₹3 per share. The entire money was received with application.**

(vi) **Dividends totalling ₹4,00,000 were distributed among the shareholders.**

(vii) **Cash in hand and at Bank as at 31st March, 2022 and 31st March, 2023 totalled ₹2,10,000 and ₹4,14,000 respectively.**

You are required to prepare cash flow statement as per CAS–3 for the year ended 31st March, 2023 using the Direct method. [8]

Answer:

(a)

Net profit ratio = 20% (given)
Assets turnover ratio = 3 times (given)
Return on Investment (ROI) = Net Profit ratio x Assets turnover ratio
= 20% × 3 times = 60%

(i) If net profit ratio is increased by 5%:

Then Revised Net Profit Ratio = 20 + 5 = 25%

Asset Turnover Ratio (as before) = 3 times

∴ ROI = 25 % x 3 times = 75%

(iii) If net profit ratio falls by 5% and assets turnover ratio raises to 4 times:

Then Revised NP Ratio = 20 - 5 = 15%

Revised Asset Turnover Ratio = 4 times

∴ ROI = 15% x 4 = 60%

(b) **VW LTD.**

Cash Flow Statement for the year ended 31st March, 2023

(Amount in ₹ Lakhs)

Particulars	₹	₹
Cash flow from operating activities:		
Cash receipts from customers	96.00	
Cash paid to suppliers and employees (WN-1)	(79.16)	
Cash inflow from operation	16.84	
Tax paid	(7.00)	
Net cash from Operating Activities		9.84
Cash flow from investing activities:		
Purchase of Fixed Assets	(10.50)	
Proceeds from sale of Equipment	0.20	
Net cash from Investing Activities		(10.30)
Cash Flow from Financing Activities:		
Proceeds from issue of share capital (WN-2)	6.50	
Dividend paid	(4.00)	
Net Cash from Financing Activities		2.50
		2.04
Net increase in Cash and Cash equivalents:		
Cash and cash equivalents as at 31st March, 2022		2.10
Cash and cash equivalents as at 31st March, 2023		**4.14**

Working Notes:

1. Calculation of cash paid to suppliers and employees:

Particulars	(₹ in lakh)
Cost of sales, 60% of ₹96.00 lakh	57.60

Add: Expenses incurred	21.45
Outstanding expenses on 31.03.22	0.82
Excess of closing inventory over opening inventory	0.20
	80.07
Less: Outstanding expenses on 31.03.2023	0.91
	79.16

2. Proceeds from issue of share Capital:
Issue price of one share = ₹10 + ₹3 = ₹13
Proceeds from issue of 50,000 shares = ₹50000 × 13 = ₹6.50 lakh

8.(a) The management of APC LTD. has called for a statement showing the working capital needed to finance a level of activity of 3,00,000 units of output for the year ended March 31, 2023. The cost structure for the company's product, for the above mentioned activity level, is detailed below:

Particulars	Cost per unit (₹)
Raw material	20
Direct Labour	5
Overheads	15
Total Cost	40
Profit	10
Selling price	50

Past trends indicate that the raw materials are held in stock, on an average, for two months. Work-in-process (50 per cent complete) will approximate to ½ month's production. Finished goods remain in warehouse, on an average, for 1 month. Suppliers of materials extend 1 month's credit. Two months' credit is normally allowed to debtors. A minimum cash balance of ₹25,000 is expected to be maintained. The production pattern is assumed to be even during the year (12 months).
Required: Prepare a Statement of Working Capital determination. [7]

(b) The following information is available for AVANTI CORPORATION:

Earnings per share	**₹ 6**
Rate of Return on Investment	**20%**
Rate of return required by shareholders	**16%**

Required:
What should be the approximate dividend pay-out ratio so as to keep the share price at ₹44 by using Walter Model? [5]

Answer:

(a)

Statement of Net working Capital of APC Ltd.

Particulars	₹	₹
(A) Current Assets		
(i) Raw materials (25,000 units × 2 × ₹ 20)		10,00,000
(ii) Work in process		
Raw Materials (12,500 units × ₹ 10)	1,25,000	
Direct Labour (12,500 units × ₹ 2.5)	31,250	
Overhead (12,500 units × ₹ 7.5)	93,750	2,50,000
(iii) Finished Goods (25,000 units × ₹ 40)		10,00,000
(iv) Debtors (3,00,000 × ₹ 40 × 2)/12		20,00,000
(v) Minimum Cash Balance		25,000
Total		42,75,000
(B) Current Liabilities		
(i) Creditors for 1 month (3,00,000 × ₹ 20 × 1)/12		5,00,000
(C) Net Working Capital (A-B)		37,75,000

Alternatively, in work-in-process [Item A(ii) above] Raw Materials may be valued at 12,500 units x ₹20 = ₹2,50,000. Debtors [item A(iv) above] may also be valued at [3,00,000 x ₹50 (selling price) x 2] / 12 = ₹25,00,000.
Calculation of Net Working Capital will change accordingly.

(b) Let, the dividend pay-out ratio be x and so the share price will be:

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

Here D = 6x; E = ₹6; r = 0.20 and K_e = 0.16 and P = ₹44
Hence,

$$₹44 = \frac{6x}{0.16} + \frac{0.2(6-6x)}{0.16 \times 0.16}$$

Or, ₹44 = 37.50x + 46.875 (1 – x)
Or, 9.375x = 2.875
x = 0.3066 i.e. 0.31

9.(a) The Drew Furniture Company is considering the introduction of a new product line. Plant and inventory expansion equal to 50% of present asset levels will be necessary to handle the anticipated volume of the new product line. New capital will have to be obtained to finance the asset expansion. The following two proposals have been developed to provide the additional capital:

1. **Raise ₹1,00,000 by issuing 10 years 12% bonds. This will change the capital structure from one with about 20% debt to one with almost 50% debt. The investment banking house estimates the price/earnings ratio, now 12 to 1, will be reduced to 10 to 1 if this method of financing is chosen.**

2. **Raise ₹1,00,000 by issuing new common stock. The investment banker believes that the stock can be issued to yield ₹33.33. The P/E ratio would remain at 12 to 1, if the stock were issued. The present market price is ₹36.**

The company's most recent financial statements are as follows:

Balance sheet as on December 31, 2022

Liabilities	Amount (₹)	Assets	Amount (₹)
Common Stock	1,00,000	Plant and Equipment	1,35,000
5% Debt	40,000	Current Assets	65,000
Retained Earnings	60,000		
	2,00,000		2,00,000

Income Statement for the year ended December 31, 2022

Particulars	Amount (₹)
Sales	6,00,000
Less: Operating Costs	(5,38,000)
Operating Income	62,000
Less: Interest Charge	(2,000)
Net Income Before Taxes	60,000
Less: Income Taxes	(30,000)
Net Income	30,000

(i) The Vice President of Finance asks you to calculate the earnings per share and the market value of the stock (assuming the price/earnings ratio given are valid estimates) for the two proposals assuming total sales (including the new product line)

of: (1) ₹4,00,000; (2) ₹6,00,000; and (3) ₹8,00,000. Costs exclusive of interest and taxes are about 90% of sales.

(ii) Which proposal would you recommend? Your answer should indicate the criteria used to judge the alternatives. [8]

9. (b) Projects X and Y are analyzed and you have determined the following parameters. Advice the investor on the choice of a project:

Particulars	Project X	Project Y
Investment	**₹ 7 cr.**	**₹ 5 cr.**
Project Life	**8 years**	**10 years**
Construction Period	**3 years**	**3 years**
Cost of Capital	**15%**	**18%**
N.P.V. @ 12%	**₹ 3,700**	**₹ 4,565**
N.P.V. @ 18%	**₹ 325**	**₹ 325**
I.R.R.	**45 %**	**32%**
Rate of Return	**18 %**	**25 %**
Payback	**4 years**	**6years**
B.E.P.	**45%**	**30%**
Profitability Index	**1.76**	**1.35**

[4]

Answer:

9. (a)

(i) Proposal 1 - Raise ₹1,00,000 by issuing 10 years 12% bonds for the year ended 31.12.2022

Sales (₹)	4,00,000	6,00,000	8,00,000
Less: Operating Costs(₹)	(3,60,000)	(5,40,000)	(7,20,000)
Operating Income(₹)	40,000	60,000	80,000
Less: Interest Charge(₹)	(14,000)	(14,000)	(14,000)
Net Income Before Taxes(₹)	26,000	46,000	66,000
Less: Income Taxes(₹)	(13,000)	(23,000)	(33,000)
Net Income(₹)	13,000	23,000	33,000
Outstanding Shares = ₹ 30,000/3 = ₹10,000			
Earnings per share	₹ 1.30	₹ 2.30	₹3.30
Price/Earnings Ratio	10 times	10 times	10 times
Estimated Market Value	₹13	₹23	₹33

Proposal 2 - Raise ₹1,00,000 by issuing new common stock for the year ended 31.12.2022

Sales(₹)	4,00,000	6,00,000	8,00,000
Less: Operating Costs(₹)	(3,60,000)	(5,40,000)	(7,20,000)
Operating Income(₹)	40,000	60,000	80,000
Less: Interest Charge(₹)	(2,000)	(2,000)	(2,000)
Net Income Before Taxes(₹)	38,000	58,000	78,000
Less: Income Taxes(₹)	(19,000)	(29,000)	(39,000)
Net Income(₹)	13,000	23,000	33,000
Outstanding Shares = ₹1,00,000/ ₹ 33.33 +10,000 = 13,000 shares			
Earnings per share	₹ 1.46	₹ 2.23	₹3.00
Price/Earnings Ratio	12 times	12 times	12 times
Estimated Market Value	₹17.52	₹26.76	₹36.00

(ii) In the given situation the proposal 2 will be considered as best proposal as the estimated market price per share in all the three situations is higher than that under proposal 1. Both the objectives of maximization of wealth and maximization of earnings are being fulfilled under proposal 2.

Answer:

9. (b)

Relative Ranking of Project X and Project Y

Particulars	Rank	
	Project X	Project Y
IRR	I	II
Rate of Return	II	I
Payback	I	II
Profitability Index	I	II
N.P.V. @ 12%	II	I
N.P.V. @ 18%	Equal	Equal
B.E.P.	II	I
Cost of Capital	I	II

Analysis – The major criteria i.e. IRR, Payback and Profitability Index in which Project X is ranking first and hence it could be selected.

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

(a) Factoring vs. Forfeiting (any four)
(b) Foreign Currency Convertible Bonds (FCCBs)
(c) Objective of Receivables Management
(d) Limitations of Funds Flow Statement

Answer:

10. (a) Factoring vs. Forfeiting:

Both Factoring and Forfeiting are used as tools of financing. But there are some differences:

(i) Factoring is always used as a tool for short term financing whereas Forfeiting is for medium term financing at a fixed rate of interest.

(ii) Factoring is generally employed to finance both the domestic and export business. But, Forfeiting is invariably employed in export business only.

(iii) The central theme of Factoring is the purchase of the invoice of the client whereas it is only the purchase of the export bill under Forfeiting.

(iv) Factoring is much broader in the sense it includes the administration of the sales ledger, assumption of credit risk, recovery of debts and rendering of consultancy services. On the other hand, forfeiting mainly concentrates on financing aspects only and that too in respect of a particular export bill.

Answer:

10. (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 shareholder's 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.

Answer:

10. (c) Objective of Receivables Management:

(a) To obtain optimum (non-maximum) value of sales.

(b) To control the cost of receivables, cost of collection, administrative expenses, bad debts and opportunity cost of funds blocked in the receivables.

(c) To maintain the debtors at minimum according to the credit policy offered to customers.

(d) To offer cash discounts suitably depending on the cost of receivables, bank rate of interest and opportunity cost of funds blocked in the receivables.

Answer:

10. (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 cannot reveal continuous changes.
(iv) When both the aspects of the transaction are current, they are not considered.