Time Allowed: 3 Hours **Full Marks: 100**

The figures in the margin on the right side indicate full marks.

SECTION – A (Compulsory)

I. Choose the correct option: **[15 x 2 = 30]**

(i) Creation of value through effective use of resources is the focus area of the _____.

a. 1st stage
b. 2nd stage
c. 3rd stage
d. 4th stage

(ii) Which personnel of a financial firm play a key role in management accounting?

a. Investors
b. Suppliers
c. Managers
d. Customers

(iii) Activity based cost systems would probably provide the greatest benefits for organizations that use_____.

a. Job order costing
b. Process costing
c. Standard costing
d. Historical costing

(iv) Determine sales in rupees for desired profit if fixed cost is ₹10,000, Variable cost is ₹30,000, Sales is ₹50,000 and desired profit is ₹5,000:

a. ₹73,500
b. ₹75,000
c. ₹5,000
d. ₹37,500

(v) For the coming year, a manufacturing company has budgeted as under:
Contribution/Sales (C/S) Ratio = 45%
Margin of Safety Ratio = 33½ %
Fixed Costs = ₹ 5, 85,000. Determine Profit for the coming year.

a. ₹3,25,000
b. ₹2,92,500
c. ₹3,00,000
d. ₹2,50,000

(vi) A company has a break-even point when sales are ₹ 3, 20,000 and variable cost at that level of sales are ₹2, 00,000. How much would contribution margin increase or decrease if variable expenses are dropped by ₹30,000?

a. Increase by 27.5%.
b. Increase by 9.375%.
c. Decrease by 9.375%.
d. Increase by 37.5%.

(vii) XYZ factory working for 50 hours per week employs hundred workers on a job work. The standard output is 200 units per gang hour and standard rate is Rs. 1 per hour. During a week in June, five employees were paid @ Rs. 1.20 per hour and ten employees were paid @ 80 paise per hour. Rest of the employees was paid @ standard hour rate. The actual number of units produced was 10,200. Determine labour cost variance:

a. ₹100 favourable
b. ₹150 unfavourable
c. ₹150 favourable
d. ₹100 unfavourable

(viii) _____ is designed after assessment of the volume of output to be produced during budget period.

a. Cost budget
b. Sales budget
c. Production budget
d. Functional budget

(ix) A factory produces two types of articles Y and Z. Article Y takes 8 hours to make and Z takes 16 hours. In a month (25 days x 8 hours) 600 units of X and 400 units of Z are produced. Given budgeted hours 8000 per month and men employed are 50. Determine Activity ratio, Capacity ratio and efficiency ratio.

a. 112%, 140%, 140%.
b. 140%, 112%, 140%
c. 140%, 140%, 112%
d. None of the above

(x) According to Kaplan & Norton, which of the balanced scorecard perspectives serves as the focus of the other perspectives?

a. Learning & growth.
b. Internal business processes
c. Customer.
d. Financial

(xi) There are three departments A, B and C in a company. The sales of A, B and C are ₹ 3, 52,000, ₹2, 88,000 and ₹ 1, 60,000, respectively. The variable costs of A, B and C are ₹ 2, 40,000, ₹1, 76,000 and ₹

1, 44,000 respectively. The direct fixed costs of A, B and C are ₹ 28,000, ₹ 22,400 and ₹12,800.Rank the different departments on basis of relative profitability.

a. **A- Rank 3, B- Rank 1 and C- Rank 2**
b. **A- Rank 2, B- Rank 1 and C- Rank 3**
c. **A- Rank 3, B- Rank 2 and C- Rank 1**
d. **Insufficient data**

(xii) **The sequence of possible managerial decisions and their expected outcome under each set of circumstances can be represented and analysed by using:**

a. **The minimax regret criterion.**
b. **A decision tree.**
c. **A payoff matrix**
d. **Simulation**

(xiii) **Details of fixed overhead, production hours and production for a period are:**

Budgeted hours	**10000 hours**
Standard fixed overheads per hour	**₹10**
Standard hours per unit of output	**5 hours**
Actual production	**1920 units**
Actual fixed overheads	**₹94,000**

Calculate fixed overhead cost variance.

a. **₹3,000(F)**
b. **₹3,000(A)**
c. **₹2000(F)**
d. **₹2000(A)**

(xiv) **Division P transfers its output to Division Q at variable cost. Once a year P charges a fixed fee to Q, representing an allowance for P's fixed costs. This type of transfer pricing system is commonly known as:**

a. **Dual pricing**
b. **Two-part tariff transfer pricing**
c. **Opportunity cost based transfer pricing**
d. **Negotiated transfer pricing**

(xv) **Production budget is based upon:**

a. **Sales budget**
b. **Factory capacity**
c. **Availability of raw material and labour**
d. **All of the above**

Answer:

i	ii	iii	iv	v	vi	vii	viii	ix	x
d	c	a	d	b	b	c	a	c	d
xi	**xii**	**xiii**	**xiv**	**xv**					
a	b	c	b	d					

Section – B

(Answer any five questions out of seven questions given. Each question carries 14 Marks)

[5 x 14 = 70]

2. (a) Interpret the role and scope of management accounting with examples of its applications in business operations. [7]

(b) As the newly appointed Management Accountant, your task is to implement Activity-Based Costing (ABC) to allocate overhead costs more accurately to Products A and B. The Cost Controller has expressed dissatisfaction with the current system of overhead allocation, and you are required to propose an improved method.

You have identified the following activities, budgeted costs, and activity consumption cost drivers as follows:

Activity	Budgeted Cost	Activity Consumption Cost Driver
Engineering	1,25,000	Engineering hours
Setups	3,00,000	Number of setups
Machine operation	15,00,000	Machine hours
Packing	75,000	Number of packing orders
Total	20,00,000	

You have also gathered the following operating data pertaining to each of its products:

	Product A	Product B	Total
Engineering hour	5,000	7,500	12,500
Number of setups	200	100	300
Machine hours	50,000	1,00,000	1,50,000
Number of packing orders	5,000	10,000	15,000

Task Summary:

1. **Calculate the budgeted costs for each activity and its corresponding cost driver.**
2. **Calculate the activity cost driver rates.**

3. **Allocate overhead costs to Products A and B based on their consumption of each activity.**
4. **Prepare a report summarizing the overhead allocation to each product, including the methodology and detailed calculation.** **[7]**

Answer:

2. (a) The scope of management accounting is very wide and broad-based. It includes all information which is provided to the management for financial analysis and interpretation of the business operations.

1. Financial Accounting: Financial accounting though provides historical information but is very useful for future planning and financial forecasting. Designing of a proper financial accounting system is a must for obtaining full control and co-ordination of operations of the business.
2. Cost Accounting: It provides various techniques of costing like marginal costing, standard costing, differential and opportunity cost analysis, etc., which play a useful role in operation and control of the business undertakings.
3. Budgeting and Forecasting: Forecasting on the various aspects of the business is necessary for budgeting. Budgetary control controls the activities of the business through the operations of budget by comparing the actual with the budgeted figures, finding out the deviations, analysing the deviations in order to pinpoint the responsibility and take remedial action so that adverse things may not happen in future. Both the techniques are necessary for management accountant.
4. Cost Control Procedure: These procedures are integral part of the management accounting process and include inventory control, cost control, labour control, budgetary control and variance analysis, etc.
5. Reporting: The management accountant is required to submit reports to the management on the various aspects of the undertaking. While reporting, he may use statistical tools for presentation of information as graphs, charts, pictorial presentation, index numbers and other devices in order to make the information more impressive and intelligent.
6. Methods and Procedures: It includes in its study all those methods and procedures which help the concern to use its resources in the most efficient and economical manner. It undertakes special cost studies and estimations and reports on cost volume profit relationship under changing circumstances.
7. Tax Accounting: It is an integral part of management accounting and includes preparation of income statement, determination of taxable income and filing up the return of income etc.
8. Internal Financial Control: Management accounting includes the internal control methods like internal audit, efficient office management, etc.
9. Interpretation: Management accounting is closely related to the interpretation of financial data to the management and advising them on decision-making.
10. Evaluating the Performance of the Management: Management accounting provides methods and techniques for evaluating the performance of the management. It evaluates the performance of the management in the light of the objectives of the organisation. Thus, it helps in the implementation of the principle of management by exception.

2. (b) Basic Calculation and Working:

Activity Consumption Cost Driver	Budgeted Cost (₹)	Budgeted Activity Consumption	Activity Consumption Rate (₹)
Engineering hours	1,25,000	12,500	10 per hour
Number of setups	3,00,000	300	1,000 per setup
Machine hours	15,00,000	1,50,000	10 per hour
Number of packing Orders	75,000	15,000	5 per order

Factory overhead costs are assigned to both products by these calculations:

Product A (5,000 units)

Activity Consumption	Activity Consumption Rate (₹)	Activity Consumption for Total Overheads	Cost ₹	Overheads per unit ₹
Engineering hours	10	5,000	50,000	10
Number of Setups	1,000	200	2,00,000	40
Machine hours	10	50,000	5,00,000	100
Number of packing orders	5	5,000	25,000	5
Overhead cost per unit				155

Product B (20,000 units)

Activity Consumption	Activity Consumption Rate (₹)	Activity Consumption for Total Overheads	Cost ₹	Overheads per unit ₹
Engineering hours	10	7,500	75,000	3.75
Number of Setups	1,000	100	1,00,000	5.00
Machine hours	10	1,00,000	10,00,000	50.00
Number of packing orders	5	10,000	50,000	2.5
Overhead cost per unit				61.25

The report should cover the above calculations and necessary explanations, about the selection of Cost Drivers and calculation of Cost Driver rates, for the allocations of overheads to the Products A and B.

3. A company is engaged in three distinct lines of production. Their production cost per unit and selling prices are as under:

Production (Units)	X	Y	Z
	3,000	2,000	5,000
	₹	₹	₹
Material Cost	18	26	30
Wages	7	9	10
Variable overheads	2	3	3
Fixed Overheads	5	8	9
	32	46	52
Selling price	40	60	61
Profit	8	14	9

The management wants to discontinue one line and gives you the assurance that production in two other lines shall be raised by 50%.

They intend to discontinue the line which produces Article X as it is less profitable.

(a) Do you agree to the scheme in principle?

(b) Analyze the decision of the management and show the necessary statements to support your decision. **[14]**

Answer:

The decision should be taken on the relative profitability of various alternatives as ascertained below:

Total fixed Expenses	₹
X (3,000 × ₹ 5)	15,000
Y (2,000 × ₹8)	16,000
Z (5,000 × ₹9)	45,000
Total Fixed Expenses	76,000

Contribution per unit of different products: (S-V)

X ₹ (40-27)	₹13 per unit
Y ₹ (60-38)	₹22 per unit
Z ₹ (61-43)	₹18 per unit

Profit from different production arrangements may be found as under:

a) If 'X' is given up, sale of 'Y' and 'Z' will increase by 50%. The sales of Y would be i.e., Y – 3,000 units, Z – 7,500 units.

Contribution Y = 3,000 × ₹ 22	₹66,000
Contribution Z = 7,500 × ₹ 18	₹1,35,000
Total	₹2, 01,000
Less: Fixed Cost	₹76,000
Profit	₹1, 25,000

b) If Y is discontinued, production of X and Z will be more by 50% i.e., X – 4,500 units, Z - 7,500 units.

Contribution X = 4500 × ₹ 13	₹58,500
Contribution Z = 7500 × ₹ 18	₹1, 35,000
Total	₹1, 93,000
Less: Fixed Cost	₹76,000
Profit	₹1, 17,500

c) If Z is given up, production of 'X' and 'Y' will be is X – 4500 units, Y – 3000 units.

Contribution X = 4500 × ₹13	₹58,500
Contribution Y = 3000 × ₹22	₹66,000
Total	₹1, 24,500
Less: Fixed Cost	₹76,000
Profit	₹48,500

Under these three alternatives the profit is maximum (₹ 1, 25,000) when 'X' is discontinued. Therefore, we may agree with the management's decision to discontinue product 'X'.

4. (a) A company is at present working at 90 per cent of its capacity and producing 13,500 units per annum. It operates a flexible budgetary control system. The following figures are obtained from its budget.

Particulars	90%	100%
Sales (₹)	**15,00,000**	**16,00,000**
Fixed expenses (₹)	**3,00,500**	**3,00,600**
Semi-fixed expenses (₹)	**97,500**	**1,00,500**
Variable expenses (₹)	**1,45,000**	**1,49,500**
Units made	**13,500**	**15,000**

Labour and material costs per unit are constant under present conditions. Profit margin is 10 per cent.

(A) Examine the differential cost of producing 1,500 units by increasing capacity to 100%.

(B) What would you recommend for an export price for these 1,500 units taking into account that overseas prices are much lower than indigenous prices? [7]

(b) Aurthor Company is a multidivisional company and its managers have been delegated full profit responsibility and autonomy to accept or reject transfers from other divisions.

Division X produces a sub-assembly with a ready competitive market. This sub-assembly is currently used by Division Y for a final product that is sold outside at Rs. 1,200. Division X Charges Division Y market price for the sub-assembly which is Rs. 700 per unit. Variable costs are Rs. 520 and Rs. 600 for Divisions A and B respectively.

The manager of Division Y feels that Division X should transfer the subassembly, at a lower price than market because at this price, Division Y is unable to make a profit.

Required:

1. **Evaluate Division Y's profit contribution if transfers are made at the market price and also the total contribution to profit for the company.**

2. **Assume that Division A can sell all its production in the open market. Should Division X transfer goods to Division Y? If so, at what price.**

3. **Assume that Division X can sell in the open market only 500 units at `700 per unit out of 1,000 units that it can produce every month and that a 20 per cent reduction in price is necessary to sell at full capacity. Should transfers be made? If so, how many units should it transfer and at what price? Submit a schedule showing comparisons of contribution margins under three different alternatives to support your decision.** **[7]**

Answer:

4. (a)

Computation of material and labour cost

Particulars	₹	₹
Sales at present		15,00,000
(-) Profit @ 10%		1,50,000
Total cost		13,50,000
(-) All costs other than material & labour		
Fixed expenses	3,00,500	
Semi fixed expenses	97,500	
Variable expenses	1,45,000	5,43,000
Material & Labour cost		8,07,000

Statement showing differential cost of 1500 units:

Particulars	₹
Material & Labour (₹ 8,07,600 × 1500 ÷ 13,500)	89,667
Fixed expenses (₹ 3,00,600 – ₹ 3,00,500)	100
Semi fixed expenses (₹ 1,00,500 – ₹ 97,500)	3,000
Variable expenses (₹1,49,500 – ₹ 1,45,000) 4,500	4,500
Differential cost	97,267

Differential cost per unit = ₹97,267 ÷1,500 = ₹64.84

The minimum price for these 1,500 units should not be less than ₹64.84.

4. (b) Calculation for Division Y's contribution Margin

Particulars	₹	₹
Selling Price of Final Product		1,200
Less: Division Y's variable cost	600	
Division Y's purchase cost	700	1,300
Division Y's loss		(100)

Calculation for Company's contribution Margin

Particulars	₹	₹
Selling Price of Final Product		1,200
Less: Division Y's variable cost	600	
Division X's variable cost	520	1,120
Company's Contribution margin		80
1. Selling price of sub-assembly		700
Less: Division X's variable cost		520
Company's contribution margin		180

The company contribution is ₹100 greater if the sub-assembly is sold on the intermediate market rather than to Division B. Thus, it should be sold in the intermediate market. The market price would be the appropriate transfer price if transfers were made:

Alternative 1: Transfer 1,000 units to Division Y.

Alternative 2: Sell 500 units in the intermediate market at ₹700 and transfer 500 units to Division Y.

Alternative 3: Sell 1,000 units on the intermediate market at 20% reduced price.

Alternative 1:	₹
Company sales: (1000 units × ₹1200)	12,00,000
Less: Variable costs (1000 units @ ₹520 + 1,000 units @ ₹600)	11,20,000
Contribution margin	80,000

Alternative 2:	₹
Company sales: (500 units @ ₹700 + 500 units @ ₹1,200)	9,50,000
Less: Variable costs (1000 units @ ₹520 + 500 units @ ₹600)	8,20,000
Contribution margin	1,30,000

Alternative 3:	₹
Company sales: (1000 units @ ₹560 (700 – 140)	5,60,000
Less: Variable costs (1000 units @ ₹520)	5,20,000
Contribution margin	40,000

Conclusion:

Transfers should be made, 500 units should be transferred to Division Y. The transfer price should be set at a price greater than the variable cost of Division X (₹520) and less than the marginal revenue to Division Y (₹600). Division Y's marginal revenue will be ₹600 (₹1,200 market price - division Y's own variable cost ₹600.

5. ABC Ltd adopts a standard costing system. The standard output for a period is 20,000 units and the standard cost and profit per unit is as under:

Particulars	₹
Direct Material (3 units @ ₹1.50)	4.50
Direct Labour (3 Hrs. @ ₹1.00)	3.00
Direct Expenses	0.50
Factory Overheads : Variable	0.25
Fixed	0.30
Administration Overheads	0.30
Total Cost	8.85
Profit	1.15
Selling Price (fixed by government)	10.00

The actual production and sales for a period was 14,400 units. There has been no price revision by the Government during the period.

The following are the variances worked out at the end of the period.

		Favourable (₹)	Adverse (₹)
Direct Material			
	Price		4,250
	Usage	1,050	
Direct labour			
	Rate		4,000
	Efficiency	3,200	
Factory Overheads			
	Variable – Expenditure	400	
	Fixed – Expenditure	400	
	Fixed – Volume		1,680
Administration Overheads			
	Expenditure		400
	Volume		1,680

You are required to: Ascertain the details of actual costs and prepare a Profit and Loss Statement for the period showing the actual Profit/Loss. Show the workings clearly. Reconcile the Actual Profit with Standard Profit. [14]

Answer:

Statement showing the Actual Profit and Loss Statement

Particulars	Amount (₹)	Amount (₹)
Standard Material Cost (14,400 × 4.50)	64,800	
Add: Price Variance	4,250	
Less: Usage Variance	(1,050)	68,000
Standard Labour Cost (14,400 × 3)	43,200	
Add: Rate Variance	4,000	
Less: efficiency Variance	(3,200)	44,000
Direct expenses (14,400 × 0.50)		7,200
Prime Cost		1,19,200
Factory overhead:		
Variable (14,400 × 0.25)	3,600	
Less: expenditure Variance	(400)	3,200
Fixed (14,400 × 0.30)	4,320	
Add: Volume Variance	1,680	
Less: expenditure Variance	(400)	5,600
Administration overhead (14,400 × 0.3)	4,320	
Add: Volume Variance	1,680	
Add: exp. Variance	400	6,400
Total Cost		1,34,400
Profit (B/F)		9,600
Sales		1,44,000

Statement showing Reconciliation of Standard Profit with Actual Profit

Particulars	Amount (₹)	Amount (₹)
Standard Profit (14,400 × 1.15)		16,560
Add: Material usage Variance	1,050	
Labour efficiency Variance	3,200	
Variable overhead expenditure Variance	400	
Fixed overhead expenditure Variance	400	5,050
		21,610
Less: Material Price Variance	4,250	
Labour Rate Variance	4,000	

Fixed overhead Volume Variance	1,680	
Administration expenditure Variance	400	
Administration Volume Variance	1,680	12,010
Actual Profit		9,600

6. (a) Budgeted and actual sales for the month of December, 2024 of two products A and B of M/s. XY Ltd. were as follows:

	Budgeted		Actual	
Product	**Budgeted Units**	**Sales Price/Unit (₹)**	**Actual Units**	**Sales Price / Unit (₹)**
A	**6,000**	**₹5**	**5,000**	**5.00**
			1,500	**4.75**
B		**₹2**	**7,500**	**2.00**
	10,000		**1,750**	**8.50**

Budgeted costs for Products A and B was ₹4.00 and ₹1.50 unit respectively. Work out from the above data the following variances. Budgeted costs for Products A and B was ₹4.00 and ₹1.50 unit respectively.

Calculate Sales Variances. **[7]**

(b) Prepare a flexible budget for overhead expenses on the basis of the following data and determine the overhead rates at 70%, 80% and 90%.

Plant Capacity	**At 80% capacity**
	₹
VARIABLE OVERHEADS:	
Indirect labour	**12,000**
Stores including spares	**4,000**
SEMI VARIABLE:	
Power (30% - Fixed: 70% -Variable)	**20,000**
Repairs (60%- Fixed : 40% -Variable)	**2,000**
FIXED OVERHEADS:	
Depreciation	**11,000**
Insurance	**3,000**
Salaries	**10,000**
Total overheads	**62,000**
Estimated Direct Labour Hours	**1,24,000**

[7]

Answer:

6.(a)

Product	(1) AQAP (₹)	(2) AQSP (₹)	(3) RSQSP (₹)	(4) SQSP (₹)
A	5,000 × 5.00	6,500 × 5	5,906.25 × 5	6,000 × 5
	1,500 × 4.75			
B	7,500 × 2.00			
	1,750 × 1.90	9,250 × 2	9,843.75 × 2	10,000 × 2
A	25,000	32,500	29,531.25	30,000
	7,125			
B	15,000			
	3,325	18,500	19,687.5	20,000
Total	₹50,450	₹51,000	₹49,219	₹50,000

Revised Standard Quantity for

A = 6,000/16,000 × 15,750 = 5,906.25 units

B = 10,000/16,000 × 15,750 = 9,843.75 units

- AQAP = Actual Sales = ₹50,450
- AQSP= Actual Quantity of Sales at Standard Price = ₹51,000
- RSQSP = Revised Budgeted or Standard Sales = ₹49,219
- SQSP = Standard or Budgeted Sales = ₹50,000

- Sales Sub Volume or Quantity Variance = 3 – 4 = ₹781 (A)
- Sales Mix Variance = 2 – 3 = ₹1,781 (F)
- Sales Volume Variance = 2 – 4 = ₹1,000 (F)
- Sales Price Variance = 1 – 2 = ₹550 (A)
- Sales Value Variance = 1 – 4 = ₹450 (F)

Important Notes

- Budgeted Sales = Budgeted Quantity of Sales × Standard Selling Price per unit / Budgeted Selling Price per unit.
- Actual Sales = Actual Quantity of Sales × Actual Selling Price per unit
- tandard Sales = Actual Quantity of Sales × Standard Selling Price per unit
- Revised Standard Sales:

(i) Based on Quantity

Total Quantity of Actual Mix ÷ Total Quantity of Standard Mix × Standard Quantity × Standard Price per unit.

(ii) Based on value:

Budgeted Ratio on Sales × Standard Sales

Budgeted Ratio on Sales = Budgeted Sales of a Product ÷ Total Budgeted Sales

6. (b) Flexible budget showing OH rate par labour hour

Flexible Budget at Different Capacities and Determination of Overhead Rates

Particulars	70% (₹)	80% (₹)	90% (₹)
(A) Variable overheads:			
Indirect labour	10,500	12,000	13,500
Stores including spares	3,500	4,000	4,500
Total (A)	14,000	16,000	18,000
(B) Semi Variable overheads:			
Power (Working Note)	18,250	20,000	21,750
Repairs (Working Note)	1,900	2,000	2,100
Total (B)	20,150	22,000	23,850
(C) Fixed overheads:			
Depreciation	11,000	11,000	11,000
Insurance	3,000	3,000	3,000
Salaries	10,000	10,000	10,000
Total (C)	24,000	24,000	24,000
Grand Total (A+B+C)	58,150	62,000	65,850
Labour Hours	1,24,000 × 70%/80% = 1,08,500	1,24,000	1,24,000 × 90%/80% = 1,39,500
Overhead rate per hour (₹)	58,150 / 1,08,500 = 0.536	62,000 / 1,24,000 = 0.50	65,850 / 1,39,500 = 0.472

Working notes: Semi Variable overheads

	70%	90%
Power:		
Variable (70%)	14,000 × 70%/80% = 12,250	14,000 × 90%/80% = 15,750
Fixed (30%)	6,000	6,000
Total	18,250	21,750
Repairs:		
Variable (40%)	800 × 70%/80% = 700	800 × 80%/90% = 900
Fixed (60%)	1,200	1,200
Total	1,900	2,100

7. (a) The following information is available of a concern. Calculate Economic Value Added (EVA).

12% Debt ₹ 2,000 crores
Equity capital ₹500 crores
Reserves and Surplus ₹7,500 crores
Risk-free rate 9%
Beta factor 1.05
Market rate of return 19%
Equity (market) risk premium 10%
Operating profit after tax ₹ 2,100 crores
Tax rate = 30% **[7]**

(b) Describe the four perspectives of the Balanced Scorecard. **[7]**

Answer:

7. (a)

Capital Employed = 2000 + 500 + 7500 = ₹10,000 Crores
Cost of Debt (K_d) = Interest × (1- Tax Rate) = 12% × (1- 0.3) = 8.40%
Cost of Equity (K_e) = Risk free rate + (Beta × Market Risk Premium)
= 9% +1.05(19% - 9%) =19.5%
Debt equity ratio (as given in the question) 20% & 80%
WACC= [(K_d) × Debt % + (K_e) × Equity %] = (8.40% × 20%) + (19.5% × 80%)
= 17.28%
Operating Profit after tax ₹2,100 crores.
EVA = NOPAT – Cost of Capital Employed
= [(₹2,100 crores) – (17.28%) × ₹10,000 crores]
= ₹2,100 crores – ₹1,728 crores
= ₹372 crores

7. (b) The four Perspectives of the Balanced Scorecard:

1. **Financial Perspective:**
   This perspective evaluates the Profitability of the strategy. Because cost reduction relative to competitors, costs and sales growth are key strategic initiatives, the financial perspectives focuses on how much of operating income and return on capital results from reducing costs and selling more units.

2. **Customer:**
   This perspective identifies the targeted market segments and measures the company's success in these segments. To monitor its growth objectives, number of new customers and customer's satisfaction.

3. **Internal business process Perspective:**

This perspective focuses on internal operations that further the customers' perspective by creating value for customers and further the financial perspective by increasing shareholder value. Chipset determines internal business process improvement targets after benchmarking against its main competitors. The internal business process perspective comprises three sub processes:

- The innovation process:
  Creating products, services and processes that will meet the needs of customers, aiming at lowering costs and promote growth by improving the technology of its manufacturing.
- The operations process:

Producing and delivering existing products and services that will meet the needs of customers. The strategic initiatives are (A) improving manufacturing quality reducing delivery time to customers and (B) Meeting specified delivery dates.

- Post sales service providing service and support to the customer after the sale of a product of service. Although customers do not require much post sales service.

4. Learning & Growth Perspectives:

This perspective identifies the capabilities of the organization must excel at to achieve superior internal processes that create value for customers and shareholders.

A Company's learning and growth perspectives emphasize three capabilities:

- Employee Capabilities measured using employee education and skill levels.
- Information system capabilities, measured by percentage of manufacturing processes with real-time feedback and
- Motivation measured by employee satisfaction and percentage of manufacturing and sales employees (line employees) empowered to manage processes.

8. (a) TT Newsagents stocks a weekly health magazine. The owner buys the magazines for ₹ 0.30 each and sells them at the retail price of ₹0.50 each.

At the end of the week unsold magazines are obsolete and have no value. The estimated probability distribution for weekly demand is shown below.

Weekly demand in units	Probability
20	0.20
30	0.55
40	0.25
	1.00

You are required to calculate the following:

(i) What is the expected value of demand?

(ii) If the owner is to order a fixed quantity of magazines per week how many should that be? Assume no seasonal variations in demand. [7]

(b) Explain the concept of performance reporting and identify the key requisites for implementing responsibility accounting in an organization. [7]

Answer:

8. (a)

Weekly demand in units	Probability	EV of demand (units per week)
20	0.20	4
30	0.55	16.5
40	0.25	10
Total		30.5

The next step is to set up a decision matrix of possible strategies (numbers bought) and possible demand.

The 'pay-off' from each combination of action and outcome is then computed.

No sale = Cost of ₹ 0.30 per magazine

Sale = Profit of ₹ 0.20 per magazine (₹0.50 - ₹ 0.30)

Probability	Outcome (Numbers demanded)	Decision (profit) (Numbers bought)		
		20	30	40
		₹	₹	₹
0.20	20	4.00	1.00*	(2.00)
0.55	30	4.00	6.00	3.00
0.25	40	4.00	6.00	8.00
	EV	4.00	5.00**	3.25***

* Buy 30 and sell only 20 gives a profit of (20 × ₹0.5) – (30 × ₹0.3) = ₹1

** (0.2 ×1) + (0.55 × 6) + (0.25 × 6) = 5

The strategy which gives the highest expected pay-off is to stock 30 magazines each week.

8. (b) Performance Reporting:

- A control system to be effective should be such that deviations from the plans must be reported at the earliest so as to take corrective action for the future. The deviations can be known only when performance is reported.
- Responsibility accounting system is focused on performance reports also known as 'responsibility reports', prepared for each responsibility unit.
- Unlike authority which flows from top to bottom, reporting flows from bottom to top. These reports should be addressed to appropriate persons in respective responsibility centres.
- The reports should contain information in comparative form as to show plans (budgets) and the actual performance and should give details of variances which are related to that centre.

- The variances which are not controllable at a particular responsibility centre should also be mentioned separately in the report.

Pre-requisites of Responsibility Accounting:

- It should be a big company with divisionalised organization structure.
- The organization should have clearly set goals and targets.
- Managers should actively participate in establishing budgets against which their performance is measured.
- Performance reporting should be timely and contain significant information relating to the responsibility centres.
- Managers are held responsible only for those activities over which they exercise significant degree of control.