

Paper 17 - Strategic Performance Management

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Time Allowed: 3 Hours

Full Marks: 100

Sec-A : Question 1 Compulsory and carries 20 Marks

- 1 (a) The cost function 'c' for the commodity 'q' is given by $C = q^3 - 4q^2 + 6q$. Find Average Variable cost and also find the value of q for which average variable cost is minimum. **4**
- (b) The following information relates to budgeted operation of Division X of a manufacturing company

Particular	Amount (₹)
Sales: (50,000 units of ₹ 8)	4,00,000
Less: Variable cost @ ₹ 6 per unit	3,00,000
Contribution Margin	1,00,000
Less: Fixed Costs	75,000
Divisional Profit	25,000

The amount of divisional investment is ₹ 1,50,000 and the minimum desired rate of return on the investment is the cost of capital of 20%.

- (i) Calculate divisional expected ROI
 - (ii) Calculate divisional expected RI
 - (iii) Comment on the results of (i) and (ii)
 - (iv) The divisional manager has the opportunity to sell 10,000 units at ₹ 7.50 per unit. Variable cost per unit would be the same as budgeted, but fixed costs would increase by ₹ 5,000. Additional investment of ₹ 20,000 would also be required. If the manager accepts the special order, by how much and in what direction would his residual income change? **[+1+1+1]**
- (c) Mention the objectives of Customer Relationship Management? **4**
- (d) Explain Systematic Risk and Unsystematic Risk? **4**
- (e) Describe the objectives of Management Information systems? **4**

Sec-B : Answer any Five questions, each question carries 16 Marks

2. (a) B manufacturing company sells its product at ₹ 1,000 per unit. Due to competition, its competitors are likely to reduce price by 15%. B wants to respond aggressively by cutting price by 20% and expects that the present volume of 1,50,000 units p.a will increase to 2,00,000 units. B wants to earn at 10% target profit on sales, based on:

Particulars	Existing (₹)	Target (₹)
Direct Material Cost P.U	400	385
Direct manufacturing labour P.U	55	50
Direct machinery costs P.U	70	60
Direct manufacturing costs P.U	525	495
Manufacturing overheads:		
No. of orders (₹ 80 per order)	22,500	21,250
Testing hours (₹ 2per hour)	45,00,000	30,00,000
Units reworked (₹ 100 per unit)	12,000	13,000

Manufacturing overheads are allocated using relevant cost drive ₹ Other operating costs per unit for the expected volume are estimated as follows:

Research and design	₹ 50
Marketing and customer	₹ 130
	₹ 180

Required:

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- (i) Calculate target costs per unit and target costs for the proposed volume showing break up of different elements.
- (ii) Prepare target product profitability statement. **[(4+4)+4]**

(b) Describe the Components of Performance Management. **4**

3. **(a)** Reduce the following two- person zero-sum game to 2x2 order, and obtain the optimal strategies for each player and the value of the game:

		Player B			
		B ₁	B ₂	B ₃	B ₄
Player A	A ₁	3	2	4	0
	A ₂	3	4	2	4
	A ₃	4	2	4	0
	A ₄	0	4	0	8

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(b) From the following information calculate EVA:

Equity share capital	₹ 5,00,000
13% preference share capital	₹2,00,000
Reserves and surplus	₹ 6,00,000
None trade investments (Face value ₹ 1,00,000), Rate of interest	10%
20% Debentures	3,00,000
Profits before tax	3,00,000
Tax rate	40%
WACC	13%

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4. **(a)** Define the following terms in the context of supply chain Management:
 (i) Capacity strategy (ii) Lead Time/Cycle Time, (iii) Preventive Maintenance (iv) Specifications.

[2×4]

(b) Describe different types of On-line Analytical processing?

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5. **(a)** Describe the benefits of Risk Mapping. **8**

(b) Mention the Performance related measures in the context of Corporate Risk Management. **8**

6. Hp Ltd manufactures two parts 'A' and 'B' for computer Industry.

- A: Annual production and sales of 1,00,000 units at a selling price of ₹ 1000.05 per unit.
- B: Annual production and sales of 50,000 units at a selling price of ₹ 150 per unit.

Direct and Indirect costs incurred on these two parts are as follows – (₹ In thousands)

Particulars	A	B	Total
Direct Material cost (Variable)	4,200	3,000	7,200
Labour cost (Variable)	1,500	1,000	2,500
Direct Machining costs (See note)	700	550	1,250
Indirect Costs:			
Machine set up cost			462
Testing Cost			2,375
Engineering cost			2,250
Total			16,037

Note: Direct Machining costs represent the cost of machine capacity dedicated to the production of each product. These costs are fixed and are not expected to vary over the long-run horizon.

Additional information is as follows –

Particular	A	B
Production Batch Size	1,000 units	500 units

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Set up time per batch	30 hours	36 hours
Testing time per unit	5 hours	9 hours
Engineering cost incurred on each product	Rs, 8,40,000	₹ 14,10,000

A foreign competitor has introduced product very similar to 'A' to maintain the company's share and profit, HP Ltd. has to reduce the price to ₹ 86.25. The company calls for a meeting and comes up with a proposal to change design of product 'A'. The expected effect of new design is as follows:

- Direct Material cost is expected to decrease by ₹ 5 per unit.
- Labour cost is expected to decrease by ₹ 2 per unit.
- Machine time is expected to decrease by 15 minutes, previously it took 3 hours to produce 1 unit of 'A'. the machine will be dedicated to the production of new design.
- Set up time will be 28 hours for each set up.
- Time required for testing each unit will be reduced by 1 hour.
- Engineering cost and batch size will be unchanged.

Required:

- (a) Company management identifies that cost driver for machine set-up costs is set up hours used in batch setting and for testing costs is 'testing time' Engineering costs are assigned to products by special study. Calculate the full cost per unit for 'A' and 'B using Activity- based costing.
- (b) What is the Mark-up on full cost per unit of A?
- (c) What is the target cost per unit for new design to maintain the same mark up percentage on full cost per unit as it had earlier? Assume cost per unit of cost drivers for the new design remains unchanged.
- (d) Will the new design achieve the cost reduction target?
- (e) List four possible management actions that the HP Ltd. should take regarding new design.

[4+4+4+2+2]

7. (a) Wipro is examining the profitability and pricing policies of its Software Division. The software Division develops software packages for engineers. It has collected data on three of its more recent packages –

- (i) ECE package for electronics and communication engineers
- (ii) CE package for computer engineers and
- (iii) IE package for industrial engineers

Summary details on each package over their two year cradle to grave product lives are –

Package	Selling price	Number of units sold	
		Year 1	Year 2
ECE	₹ 250	2,000	8,000
CE	3000	2000	3,000
IE	2000	5,000	3,000

Assume that no inventory remains on hand at the end of year 2. Wipro is deciding which product line to emphasize in its software division. In the past two years, the profitability of this division has been mediocre.

Wipro is particularly concerned with the increase in R & D costs in several of its divisions. An analyst at the software division pointed out that for one of its most recent packages (IE) major efforts had been made to reduce R & D costs.

Last week, Amit, the Software Division Manager, decides to use life Cycle Costing in his own division. He collected the following Life Cycle revenue and cost information for the packages (in ₹)

Particulars	Packages ECE		Packages CE		Package IE	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Revenue	5,00,000	20,00,000	6,00,000	9,00,000	10,00,000	6,00,000

Costs						
R&D	7,00,000	-	4,50,000	-	2,40,000	-
Design of product	1,15,000	85,000	1,05,000	15,000	76,000	20,000
Manufacturing	25,000	2,75,000	1,10,000	1,00,000	1,65,000	43,000
Marketing	1,60,000	3,40,000	1,50,000	1,20,000	2,08,000	2,40,000
Distribution	15,000	60,000	24,000	36,000	60,000	36,000
Customer services	50,000	3,25,000	45,000	1,05,000	2,20,000	3,88,000

Present a product Life Cycle Income statement for each software package. Which package is most profitable and which is the least profitable? How do the three packages differ in their cost structure (the percentage of total cost in each category)? **[6+2+4]**

(b) Limitation of Value Chain Analysis?

4

8. Write a Short notes on any four of the below

[4X4]

- (i) Objectives of process Analysis
- (ii) Business applications of Activity Based Management
- (iii) Objectives of transfer pricing
- (iv) Price Discrimination under the demand oriented pricing
- (v) ERP.