

Paper 17 – Strategic Performance Management

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Full Marks: 100

Time allowed: 3 hours

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

This question paper has two sections.

Both the sections are to be answered subject to instructions given against each.

Section – A

Question no. 1 is compulsory

1. Answer the Following Questions:

[4 × 5 = 20]

- (a) The cost function 'c' for the commodity 'q' is given by $C = 2q^3 - 8q^2 + 10q$. Find Average Variable cost and also find the value of q for which average variable cost is minimum.
- (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%.

- Calculate divisional expected ROI;
 - Calculate divisional expected RI;
 - Comment on the results of (i) and (ii);
 - 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?
- (c) Write a note on data availability.
- (d) Discuss the rule of dominance of Game theory.
- (e) Describe the objectives of Management Information systems?

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Section - B

Answer any five questions

[16 × 5 = 80]

2. (a) B manufacturing company sells its products 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 (₹ 2 per hour)	45,00,000	30,00,000
Units reworked (Rs. 100 per unit)	12,000	13,000

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

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

Required:

- (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.

- (b) State the objectives of Performance appraisal.

[12 + 4 = 16]

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

- (b) From the following information calculate EVA:

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Equity share capital	₹ 10,00,000
13% Preference share capital	₹4,00,000
Reserves and surplus	₹ 12,00,000
None trade investments (Face value ₹ 1,00,000), Rate of interest	10%
20% Debentures	₹ 6,00,000
Profits before tax	₹ 6,00,000
Tax rate	40%
WACC	13%

[8+ 8 = 16]

4. (a) Define the following terms in the context of supply chain Management:

- (i) Capacity strategy;
- (ii) Lead Time/Cycle Time;
- (iii) Preventative Maintenance;
- (iv) Specifications.

(b) Mention the steps involved in 'Data Mining Problems'

[8+ 8 = 16]

5. (a) Discuss about risk retention and state its guidelines to be followed for it.

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

[8+ 8 = 16]

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
Set up time per batch	30 hours	36 hours

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Testing time per unit	5 hours	9 hours
Engineering cost incurred on each product	₹ 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:

- (i) 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.
- (ii) What is the Mark-up on full cost per unit of A?
- (iii) 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.
- (iv) Will the new design achieve the cost reduction target?
- (v) List four possible management actions that the HP Ltd. should take regarding new design.

[16]

7. (a) Karishma Ltd., manufacturing electronic equipments, is currently buying component A from a local supplier at a cost of ₹30 each. The company has under its consideration a proposal to install a machine for the manufacture of the component.

Two alternative proposals are available as under:

- Installation of Semi-automatic machine, involving an annual fixed cost of ₹18 lakhs and a variable cost of ₹12 per component manufactured.
- Installation of an automatic machine, involving an annual fixed cost of ₹30 lakhs and a variable cost of ₹10 per component manufactured.

As a Cost and Management Accountant, you are required to find out:

- (i) The annual requirement of the component to justify a switch over from purchase of components to
 - (a) manufacture of the same by installing semi-automatic machine and
 - (b) manufacture of the same by installing an automatic machine.

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(ii) If the annual requirement of the component is 5,00,000 units, which machine would you advise the company to install?

(b) Compare between dashboard and scorecard.

[10 + 6 = 16]

8. Answer any four questions:

[4 × 4 = 16]

(a) Discuss the steps in risk management process

(b) State the principles of Lean Management;

(c) Objectives of transfer pricing;

(d) Write a note on Unique competitor risk;

(e) Discuss about Five fundamental Data Quality Practices.