Paper 15- Strategic Cost Management- Decision Making

Paper-15: Strategic Cost Management- Decision Making

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

This paper contains two sections **A** and **B**. **Section A** is compulsory and contains question No.1 for 20 marks. **Section B** contains question Nos. 2 to 8, each carrying 16 marks.

Answer any five questions from **Section B**.

Section – A [20 Marks]

1. Choose the most appropriate answer to the following questions giving justification [10x2=20]

(i) A company has over-absorbed fixed production overheads for the period by ₹6,000. The fixed production overhead absorption rate was ₹8 per unit and is based on the normal level of activity of 5,000 units. Actual production was 4,500 units. What was the actual fixed production overheads incurred for the period?
(a) ₹30,000
(b) ₹34,000
(c) ₹40,000
(d) ₹42,000

(ii) Which of the following would decrease unit contribution margin the most?
(a) 15% decrease in selling price
(b) 15% increase in variable costs
(c) 15% decrease in variable costs
(d) 15% decrease in fixed costs

(iii) A company determines its selling price by marking up variable costs 60%. In addition, the company uses frequent selling price mark downs to stimulate sales. If the mark downs average 10%, what is the company's contribution margin ratio?
(a) 27.5%
(b) 30.6%
(c) 37.5%
(d) 41.75%

(iv) If the capacity usage ratio of a production department is 90% and activity ratio is 99%, then the efficiency ratio of the department is ____%.
(a) 120
(b) 110
(c) 90
(d) 80

(v) A chemical is manufactured by combining two standard items of input A (standard price ₹60/kg) and B (₹45/kg) in the ratio of 60%:40%. 10% of input is lost during processing. If during a month 1,200kg of the chemical is produced incurring a total cost of ₹69,600, the total material cost variance will be _____.

(a) ₹2,400 (A)
(b) ₹2,400 (F)
(c) ₹3,000 (A)
(d) ₹2,000 (F)

(vi) A company has 2,000 units of an obsolete item which are carried in inventory at the original purchase price of ₹30,000. If these items are reworked for ₹10,000, they can be sold for ₹18,000. Alternatively, they can be sold as scrap for ₹3,000 in the market. In a decision model used to analyze the reworking proposal, the opportunity cost should be taken as:

(a) ₹8,000
(b) ₹3,000
(c) ₹10,000
(d) ₹30,000

(vii) A company absorbs overheads on machine hours. In a period, actual machine hours were 17,285, actual overheads were ₹4,96,500 and there was under-absorption of ₹12,520. What was the budgeted overhead absorption rate per machine hour (to the nearest ₹)?

(a) 29
(b) 28
(c) 27
(d) 26

(viii) Z plc provides a single service to its customers. An analysis of its budget for the year ending 31st Dec shows that in period 4, when the budgeted activity was 5,220 service units with a sales value of ₹42 each, the margin of safety was 19.575%. The budgeted contribution to sales ratio of the service is 40%. Budgeted fixed costs in period 4 were nearest to:

(a) ₹1,700
(b) ₹71,000
(c) ₹88,000
(d) ₹1,76,000

(ix) ABC is defined as cost attribution to _____ on the basis of benefit received from indirect activities.

(a) Cost units
(b) Cost objects
(c) Cost centres
(d) Production units

(x) A company operates through accounting system. The details of product X per unit are as under: selling price ₹50; Material cost ₹20; Conversion cost ₹15.
Time on bottleneck resources 10 minutes.
The return per hour for product X is:
(a) ₹210
(b) ₹180
(c) ₹300
(d) ₹90

Section – B

Answer any five questions.

[16×5= 80]

2. (a) Jyoti Ltd. has developed a new product 'TRIO' which is to be launched soon. The company anticipated to sell 1,25,000 of these units at a sale price of ₹400 per unit over the Product Life Cycle of three years. The other data pertaining to Product TRIO are as under:
Calculate:
1. Life Cycle Cost of the Product 'TRIO'.
2. Revised Life Cycle Cost if Jyoti Ltd. increases sales by 12% through 5% reduction in sale price along with increase in Fixed Manufacturing Cost by ₹1,20,000 per year.
3. Should the company go for reduction in sale price? **[10]**

(b) A machine manufactures 10,000 units of a part of a total cost of ₹21 of which ₹18 is variable. This part is readily available in the market at ₹19 per unit. If the part is purchased from the market then the machine can either be utilized to manufacture a component in same quantity contributing ₹2 per component or it can be hired out at ₹21,000. Recommend which of the alternatives is profitable. **[6]**

3. (a) A Gloves manufacturer has a net profit of ₹25 per pair on a selling price of ₹143. He is producing 6,000 pairs per annum which is 60% of the potential capacity. The cost per unit is as under:

Direct Materials	35
Direct Wages	12.5
Works Overheads (50% fixed)	62.5
Administrative Overheads (75% fixed)	6

During the current year, the manufacturer also estimates demand of 6,000 pairs but anticipates that the fixed charges to go up by 10% while the rate of Direct Labour and Direct Materials will increase by 8% and 6% respectively. But he has no option of increasing the selling price. Under this situation he obtains an offer to utilize further 20% of capacity. What minimum price will you recommend to ensure an overall profit of ₹1,67,300? **[8]**

(b) Your company has a production capacity of 2,00,000 units per year. Normal capacity utilisation is reckoned as 90%. Standard variable production costs are ₹11 per unit. The fixed costs are ₹3,60,000 per year. Variable selling costs are ₹3 per unit and fixed selling costs are ₹2,70,000 per year. The unit selling price is ₹20. In the year just ended on 31st March,2020 the production was 1,60,000 units and sales were 1,50,000 units. The closing inventory on 31.03.2020 was 20,000 units. The actual variable production costs for the year were ₹35,000 higher than the standard.

(i) Calculate the profit for the year: (a) by the Absorption Costing Method, and (b) by the Marginal Costing Method.
(ii) Explain the difference in the profits. **[8]**

4. (a) Akash makes and sells a single product. The company operates a standard marginal costing system and a just-in-time purchasing and production system. No inventory of raw materials or finished goods is held.

Details of the budget and actual data for the previous period are given below:
Budget data

Standard production costs per unit:

Direct material	8 kg @ ₹10.80 per kg	₹86.40
Direct labour	1.25 hours @ ₹18 per hour	₹22.5
Variable overheads	1.25 hours @ ₹6 per direct labour hour	₹7.50
Standard selling price	₹180 per unit	
Budgeted fixed production overheads	₹1,70,000	
Budgeted production and sales	10,000 units	

Actual data

Direct material	74,000 kg @ ₹11.20 per kg
Direct labour	10,800 hours @ ₹19 per hour
Variable overheads	₹70,000
Actual selling price	₹184 per unit
Actual fixed production overheads	₹1,68,000
Actual production and sales	9,000 units

Prepare a statement using marginal costing principles that reconciles the budgeted profit and the actual profit. Your statement should show the variances in as much detail as possible. **[10]**

(b) "Standard costing system is not compatible with Activity based costing system". Do you agree with this statement? Explain your answer. **[6]**

5. (a) A company is organized on decentralized lines, with each manufacturing division operating as a separate profit centre. Each division has full authority to decide on sale of the division's output to outsiders and to other divisions.

Division C has always purchased its requirements of a component from Division A. but when informed that Division A was increasing its selling price to ₹150, the manager of Division C decided to look at outside suppliers. Division C can buy the components from an outside supplier for ₹135. But Division A refuses to lower its price in view of its need to maintain its return on the investment. The top management has the following information:

C's annual purchase of the component	1,000 units
A's variable costs per unit	₹120
A's fixed cost per unit	₹20

Required:

(i) Will the company as a whole benefit, if Division C buys the component at ₹135 from an outside supplier?

(ii) If Division A did not produce the material for Division C, it could use the facilities for other activities resulting in a cash operating savings of ₹18,000. Should Division C then purchase from outside sources?

(iii) Suppose there is no alternative use of Division A's facilities and the market price per unit for the component drops by ₹20. Should Division C now buy from outside? **[8]**

(b) Nestle has decided to increase the size of the store. It wants the information about the probability of the individual product lines: Kit Kat, Nescafe and Munch. It provides the following data for the year for each product line-

Particulars	Kit Kat	Nescafe	Munch
Revenues (₹)	79,350	2,10,060	1,20,990
Cost of goods sold (₹)	60,000	1,50,000	90,000
Cost of bottles returned (₹)	1,200	0	0
Number of purchase orders	36	84	36
Number of deliveries received	30	219	66
Hours of shelf stocking time	54	540	270
Items sold	12,600	1,10,400	30,600

Nestle also provides the following information for the year:

S. No.	Activity	Description of Activity	Total Costs	Cost Allocation Basis
1	Bottle Returns	Returning of Empty Bottles to the store	1,200	Direct tracing to product line
2	Ordering	Placing of orders of purchases	15,600	156 orders
3	Delivery	Physical delivery & the receipts of merchandise	25,200	315 deliveries
4	Shelf Stocking	Stocking of merchandise on store and ongoing re-stocking	17,280	864 hours of time
5	Customer Support	Assistance provided to customers including bagging and check-out	30,720	1,53,600 items sold

Required:

1. Nestle currently allocates Store Support Costs (all Costs other than Cost Of Goods Sold) to the product lines on the basis of the Cost Of Goods Sold for each product line. Calculate the Operating Income and Operating Income as the percentage of revenue of each product line.
2. If Nestle allocates Store Support Costs (all Costs other than the Cost Of Goods Sold) to the product lines on the basis of ABC System, calculate the Operating Income and Operating Income as the percentage of revenue of each product line.
3. Compare both the systems. **[8]**

6. (a) A company manufactures 30 items per day. The sale of these items depends upon demand which has the following distribution:

Sales (units)	27	28	29	30	31	32
Probability	0.10	0.15	0.20	0.35	0.15	0.05

The production cost and sales price of each unit are ₹40 and ₹50 respectively. Any unsold product is to be disposed of at a loss of ₹15 per unit. There is a penalty of ₹5 per unit if the demand is not met.

Using the following random numbers estimate total profit/loss for the company of the next 10 days: 10,99,65,99,95,01,79,11,16,20.

If the company decides to produce 29 items per day, what is the advantage or disadvantage to the company? **[8]**

(b) An organization producing 4 different products, viz., A,B, C and D having 4 operators viz., P, Q, R and S, who are capable of producing any of the four products, works effectively 7 hours a day. The time (in minutes) required for each operator for producing each of the products are given in the cells of the following matrix along with profit:

(₹ per unit)

Operators	Products			
	A	B	C	D
P	6	10	14	12
Q	7	5	3	4
R	6	7	10	10
S	20	10	15	15
Profit (₹/unit)	3	2	4	1

Find out the assignments of operators to products which will maximize the profit. **[8]**

7. (a) A project schedule has the following characteristics:

Activity	Time	Activity	Time
1-2	4	5-6	4
1-3	1	5-7	8
2-4	1	6-8	1
3-4	1	7-8	2
3-5	6	8-10	5
4-9	5	9-10	7

(i) Construct a PERT network,
(ii) Compute Earliest Time and Latest Time for each event,
(iii) Find the critical path,
(iv) Also obtain the Total and Free Floats of each activity. **[8]**

(b) Laxmi Chemical Company operates a small plant for the manufacture of two joint chemical products X and Y. the production of these chemicals require two raw materials, A and B, which cost ₹5 and ₹8 per litre respectively. The maximum available supply per week is 2,700 litres of A and 2,000 litres of B.

The plant can operate using either of two processes, which have different operating costs and raw materials requirements for the production of X and Y, as follows:

Process	Raw materials consumed (litres per processing hours)		Output (litres per hour)		Operating cost (₹ per hour)
	A	B	X	Y	
1	20	10	15	20	500
2	30	20	20	10	230

The plant can run for 120 hours per week in total, but for safety reasons, process 2 cannot be operated for more than 80 hours per week.

The selling prices of output are:
X ₹18 per litre
Y ₹24 per litre

Required: Formulate a Linear Programming model. **[8]**

8. Write short notes on any four of the following: 4×4=16

(a) Advantages of Target Costing
(b) Enterprise Resource Planning
(c) Difference between Bench Trending and Bench Marking
(d) Limitations of Activity Based Costing
(e) Difference between PERT & CPM