

Paper 15 – Strategic Cost Management and Decision Making

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Full Marks : 100

Time allowed: 3 hours

Section - A

1. Answer the following and each question carries 2 marks. [10×2=20]

- (i) A company determines its selling price by making up variable costs 60%. In addition, the company uses frequent selling price mark down to stimulate sales. If the mark down average 10%, what is the company's contribution margin ratio?
- (A) 30.6%
(B) 44%
(C) 86.4%
(D) None of these

- (ii) A company produces two joint products, P and V. In a year, further processing costs beyond split-off point spent were ₹ 8,000 and ₹ 12,000 for 800 units of P and 400 units of V respectively. P sells at ₹ 25 and V sells at ₹ 50 per unit. A sum of ₹ 9,000 of joint cost were allocated to product P based on the net realization method. What were the total joint cost in the year?
- (A) ₹ 20,000
(B) ₹ 10,000
(C) ₹ 15,000
(D) None of these

- (iii) A company is to market a new product. It can produce up to 1,50,000 units of this product. The following are the estimated cost data:

	Fixed Cost	Variable Cost
For production up to 75,000 units	₹ 8,00,000	60%
Exceeding 75,000 units	₹ 12,00,000	50%

Sale price is expected to be ₹ 25 per unit.

How many units must the company sell to break even?

- (A) 1,00,000 units
(B) 1,11,000 units
(C) 1,27,000 units
(D) 75,000 units
- (iv) Back flush costing is most likely to be used when
- (A) Management desires sequential tracking of costs
(B) A Just-in-Time inventory philosophy has been adopted
(C) The Company carries significant amount of inventory
(D) Actual production costs are debited to work-in-progress
- (v) If the first time you perform a job takes 60 minutes, how long will the eighth job take if you are on an 80% learning curve?

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- (A) 48 minutes
- (B) 30.72 minutes
- (C) 31 minutes
- (D) None of the above

(vi) Which of the following would decrease unit contribution margin the most?

- (A) 15% decrease in selling price
- (B) 15% increase in variable cost
- (C) 15% decrease in variable cost
- (D) 15% decrease in fixed cost

(vii) A company has the capacity of production of 80,000 units and presently sells 20,000 units at ₹ 100 each. The demand is sensitive to selling price and it has been observed that with every reduction of ₹ 10 in selling price the demand is doubled. What should be the target cost at full capacity if profit margin on sale is taken as 25%?

- (A) ₹ 75
- (B) ₹ 90
- (C) ₹ 60
- (D) ₹ 25

(viii) The time taken to produce the first unit of a product is 4000 hrs, what will be the total time taken to produce the 5th to 8th unit of the product, when a 90% learning curve applies?

- (A) 10,500 hours
- (B) 12,968 hours
- (C) 9,560 hours
- (D) 10,368 hours

(ix) ABC Ltd. has developed a new product just complete the manufacture of first four units of the product. The first unit took 2 hours to manufacture and the first four units together took 5.12 hours to produce. The Learning Curve rate is

- (A) 83.50%
- (B) 80.00%
- (C) 75.50%
- (D) None of the above

(x) A company manufactures two products using common material handling facility. The total budgeted material handling cost is ₹ 60,000. The other details are:

	Product X	Product Y
Number of units produced	30	30
Material moves per product line	5	15
Direct labour hour per unit	200	200

Under activity based costing system the material handling cost to be allocated to product X (per unit) would be:

- (A) ₹ 1,000
- (B) ₹ 500
- (C) ₹ 1,500
- (D) ₹ 2,500

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Section - B

Answer any five questions from question nos. 2 to 8. Each question carries 16 marks.

2. (a) K&Co. manufactures and sells 15,000 units of a product. The full cost per unit is ₹ 200. The Company has fixed its price so as to earn a 20% return on an Investment of ₹ 18,00,000.
Required:
- (i) Calculate the selling price per unit from the above. Also, calculate the Mark-up % on the Full Cost per unit.
 - (ii) If the selling price as calculated above represents a mark-up % of 40% on variable cost per unit, calculate the variable cost per unit.
 - (iii) Calculate the company's income if it had increased the selling price to ₹ 230. At this price, the company would have sold 13,500 units. Should the company have increased the selling price to ₹ 230?
 - (iv) In response to competitive pressures, the company must reduce the price to ₹ 210 next year, in order to achieve sales of 15,000 units. The company also plans to reduce its investment to ₹ 16,50,000. If a 20% return on investment should be maintained, what is the Target cost per unit for the next year? [8]
- (b)(i) Explain the relationship of synergy with strategic realignment in the context of merger.
(ii) What are the problems of strategy evaluation. [4+4]
3. (a) What is BPR? How can BPR be applied to an organisation? [2+6]

- (b) A manufacturing company currently operating at 80% capacity has received an export order from Middle East, which will utilise 40% of the capacity of the factory. The order has to be either taken in full and executed at 10% below the current domestic prices or rejected totally.

The current sales or cost data are given below:

Items	₹ lakhs
Sales	16.00
Direct Material	5.80
Direct Labour	2.40
Variable Overheads	0.60
Fixed Overheads	5.20

The following alternatives are available to the management:

- (i) Continue with domestic sales and reject the export order.
- (ii) Accept the export order and allow the domestic market to starve to the extent of excess of demand.
- (iii) Increase capacity so as to accept the export order and maintain the domestic demand by –
Purchasing additional plant and increasing 10% capacity and thereby increasing fixed overheads by ₹ 65,000, and Working overtime at one and half time the normal rate to meet balance of the required capacity.

You are required to evaluate each of the above alternatives and suggest the best one.

[6+2]

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4. (a) AYX Ltd., manufactures three products. The material cost, selling price and bottleneck resource details per unit are as follows:

Particulars	Product X	Product X	Product X
Selling Price (₹)	66	24	15
Material and Other variable cost (₹)	75	30	15
Bottleneck resource time (minutes)	90	40	20

Budgeted factory costs for the period are ₹ 2,21,600. The bottleneck resources time available is 75,120 minutes per period.

Required:

- (i) Company adopted throughput accounting and products are ranked according to 'product return per minute'. Select the highest rank product.
- (ii) Calculate throughput accounting ratio and comment on it.

- (b) XYZ Ltd. follows JIT system. It had following transactions in May, 2017:

- (i) Raw materials were purchased for ₹ 2,00,000,
- (ii) Direct labour cost incurred ₹ 36,000,
- (iii) Actual overhead costs ₹ 3,00,000,
- (iv) Conversion costs applied ₹ 3,16,000

All materials, that were purchased, were placed into production and the production was also completed and sold during the month. The difference between actual and applied costs is computed.

You are required to pass Backflush journal entries.

[8+8]

5. (a) What is the purpose of preparation of 'Lean accounting'? [3]
(b) What control process should be considered in 'Target Costing' project? [3]
(c) A manufacturing company has the following production budget for November 2016:

Product A = 20,000 units and Product B = 40,000 units

A standard hour represents 10 units of A and 8 units of B.

Standard wage rate per hour is ₹ 0.50

During the month 7500 hours were paid for @ ₹ 0.60 per hour, which included 350 unproductive hours due to unbudgeted holidays as also loss of production of 250 units of Product-A due to machine breakdown.

Actual production for the month was 24,000 units of A and 38,000 units of B.

Calculate the following:

- (i) Direct labour rate variance
- (ii) Direct labour idle time variance
- (iii) Direct labour efficiency variance.
- (iv) Direct labour total variance.

[2½ × 4 = 10]

6. (a) The ABC Pvt. Ltd., which has a satisfactory preventive maintenances system in its plant has installed a new Hot Air Generator based on electricity instead of fuel oil for drying its finished products. The Hot Air Generator required periodic shutdown maintenance. If the shutdown is scheduled yearly, the cost of maintenance will be as under:

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Maintenance Cost	Probability
₹ 15,000	0.3
₹ 20,000	0.4
₹ 25,000	0.3

The costs are expected to be almost linear, i.e., if the shutdown is scheduled twice a year the maintenance cost will be double.

There is no previous experience regarding the time taken between breakdowns. Costs associated with breakdown will vary depending upon the periodicity of maintenance. The probability distribution of breakdown cost is estimated as under:

Breakdown Costs per annum	Shutdown once a year	Shutdown twice a year
₹ 75,000	0.2	0.5
₹ 80,000	0.5	0.3
₹ 1,00,000	0.3	0.2

Simulate the total costs – maintenance and breakdown costs – and recommend whether shutdown overhauling should be resorted to once a year or twice a year? [8]

- (b) A captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows:

Batting Position		III	IV	V	VI	VII
Batsmen	A	40	40	35	25	50
	B	42	30	16	25	27
	C	50	48	40	60	50
	D	20	19	20	18	25
	E	58	60	59	55	53

Make the assignment so that the expected total average runs scored by these batsmen are maximum. [8]

7. (a) A manufacturing company produces a chemical product which passes through two processes factory and finishing. It has the capacity to process an input of 1,00,000 kgs. of raw material. Normal scrap will be 10% and 5% of input in factory and finishing processes respectively. The realisable value of such scrap is ₹4 and ₹8 per kg. respectively for factory and finishing processes to be credited against the cost of respective process. Relevant cost data for the coming year are:

	Factory Process (₹)	Finishing Process (₹)
Direct wages	6,00,000	5,50,000
Overheads	2,28,000	4,22,900

There are three possible sources of purchase of raw materials:

Supplier	Purchase price per kg. (₹)	Maximum quantity
X	5.00	60,000 kgs.
Y	5.60	80,000 kgs.
Z	5.30	Provided entire quantity of 1,00,000 kgs is ordered, otherwise at ₹ 5.80 per kg.

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In each case the company is required to collect the raw materials from the godown of supplier.

Variable transport cost depends upon the distance involved. The same are as under:

Supplier	X	Y	Z
Transport cost (per kg)	30 paise	25 paise	25 paise

Fixed transport cost would be ₹1,00,000 per annum irrespective of the supplier to be contracted.

The output of the finishing process can be sold to three prospective customers, their offer being as follows:

Customer	Price per kg. Of output (₹)	Trade discount (%)	Conditions
A	32.50	2	Maximum quantity 40,000 kgs.
B	32.00	2	Maximum quantity 80,000 kgs.
C	30.90	---	Provide the entire output is sold to him

In case of supplies to customers A and B, the fixed delivery costs will be ₹ 1,500 per month and the variable delivery costs will be 65 paise and 36 paise per kg. respectively.

Customer C will collect the entire output from the warehouse of the company.

You are required to indicate with reasonings:

- (i) Choice of supplier with comparative cost tables.
- (ii) Choice of customer with comparative tables of net realisations. [10]

(b) The following table gives data on normal time & cost and crash time & cost for a project.

Activity	Normal	Cost (₹)	Crash	Cost (₹)
	Time (Days)		Time (Days)	
1-2	6	600	4	1,000
1-3	4	600	2	2,000
2-4	5	500	3	1,500
2-5	3	450	1	650
3-4	6	900	4	2,000
4-6	8	800	4	3,000
5-6	4	400	2	1,000
6-7	3	450	2	800

The direct cost per day is ₹ 100.

- (i) Draw the network and identify the critical path;
- (ii) What are the normal project duration and associated cost? [6]

8. Answer any 4 questions out of 5 [4*4=16]
- (a) Distinguish between Cost Reduction & Cost Control
 - (b) Lean Accounting
 - (c) Six Sigma
 - (d) Steps to be followed to increase the throughput
 - (e) Vogel's Approximation Method (VAM).