

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) If the direct labour cost is reduced by 20% with every doubling of output, what will be the cost of labour for the sixteenth unit produced as an approximate percentage of the cost of the first unit produced?
- (A) 51.2%
(B) 40.96%
(C) 62%
(D) None of these
- (ii) 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) ₹ 12,000
(C) ₹ 3,000
(D) ₹ 10,000
- (iii) By making and selling 9,000 units of a product, a company makes a profit of ₹ 10,000, whereas in the case of 7,000 units, it would lose ₹ 10,000 instead. The number of units to break-even is
- (a) 7,500 units
(b) 8,000 units
(c) 7,750 units
(d) 8,200 units
- (iv) 1200 units of microchips are required to be sold to earn a profit of ₹1,06,000 in a monopoly market. The fixed cost for the period is ₹74,000. The contribution in the monopoly market is as high as 3/4th of its variable cost. Determine the target selling price per unit.
- (a) 450
(b) 325
(c) 400
(d) 350
- (v) A company has the capacity of production of 80000 units and presently it sells 20000 units at ₹ 100 each. The demand is sensitive to selling price and it has been observed that every reduction of ₹ 10 in selling price the demand is doubled. What should be the target cost at full capacity if profit margin on sales is taken at 25%?

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- (a) ₹ 58 lakhs
- (b) ₹ 52 lakhs
- (c) ₹ 48 lakhs
- (d) ₹ 50 lakhs

(vi) A company makes a single product which it sells at ₹10 per unit. Fixed costs are ₹ 48,000 per month and the product has a contribution to sales ratio of 40%. In a period when actual sales were ₹1,40,000, the company's margin of safety in units was:

- (a) 2000
- (b) 3000
- (c) 3500
- (d) 4000

(vii) Which of the following would take place if a company is able to reduce its variable cost?

Contribution Margin	Break-Even Point
(a) Increase	Increase
(b) Decrease	Decrease
(c) Increase	Decrease
(d) Decrease	Increase

(viii) The information relating to the direct material cost of a company is as under:

Particulars	₹
Standard price per unit	3.60
Actual quantity purchased in units	1,600
Standard quantity allowed for actual production in units	1,450
Material price variance on purchase (favourable)	240

What is the actual purchase price per unit?

- (A) ₹ 3.45
- (B) ₹ 3.75
- (C) ₹ 3.20
- (D) ₹ 3.25

(ix) A company operates throughput accounting system. The details of product X per unit are as under:

Particulars	
Selling Price	₹50
Material Cost	₹20
Conversion	₹15
Time on bottleneck resources	10 minutes

The return per hour for product X is:

- (A) ₹ 210
- (B) ₹ 300
- (C) ₹ 180
- (D) ₹ 90

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- (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

Section - B

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

2. (a) Relevant data relating to Trident Industries Limited are:

	Products			
	P	Q	R	Total
Production and Sales (Units)	60,000	40,000	16,000	
Raw Material Usage (in Units)	10	10	22	
Raw Material Costs (₹)	50	40	22	24,76,000
Direct Labour Hours	2.5	4	2	3,42,000
Machine Hours	2.5	2	4	2,94,000
Direct Labour Costs (₹)	16	24	12	
No. of Production Runs	6	14	40	60
No. of Deliveries	18	6	40	64
No. of Receipts	60	140	880	1080
No. of Production Orders	30	20	50	100

Overheads:	₹
Set-up	60,000
Machines	15,20,000
Receiving	8,70,000
Packing	5,00,000
Engineering	7,46,000

The Company operates a JIT inventory policy and receives each component once per production run.

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Required:

- (i) Compute the product cost based on direct labour hour recovery rate of overheads.
- (ii) Compute the product cost using Activity Based Costing. [4+8=12]

(b) What is Target Cost? How would you determine it? [2+2=4]

3. (a) Excel Electronics manufacturing electronic equipments is currently procuring component A from a local supplier at a cost of ₹60 each. The company is presently considering the proposal for installing a machine for the manufacture of the component. It has two alternative proposals as under:

- (A) Installation of semi-automatic machine involving an annual fixed expenditure of ₹36 lakhs and a variable cost of ₹24 per component manufactured.
- (B) Installing an automatic machine involving an annual fixed expenditure of ₹ 60 lakhs and a variable cost of ₹ 20 per component manufactured.

You are required to:

- (i) Find the annual requirement of components to justify a switch-over from procurement of components to manufacture of the same by installing (I) semiautomatic machine and (II) automatic machine.
- (ii) Advise the company on the machine to be installed if the annual requirement of the components is 5,00,000 units.
- (iii) Advise the company at what annual volume it should select automatic machine instead of semi-automatic machine. [3+3+2=8]

(b) Write eight steps of Business process re-engineering suggested by Vakola et al. (1998). [8]

4. (a) ANRO use traditional standard costing system. The inspection and setup costs are actually ₹ 1,760 against a budget of ₹ 2,000.

ABC system is being implemented and accordingly, the number of batches is identified as the cost driver for inspection and setup costs. The budgeted production is 10,000 units in batches of 1,000 units, whereas actually, 8,800 units were produced in 11 batches.

- (i) Find the volume and total fixed overhead variance under the traditional standard costing system.
- (ii) Find total fixed overhead cost variance under the ABC system. [10]

(b) One kilogram of product 'kit' requires two chemicals A and B. The following were the details of product 'Kit' for the month of June, 2017:

- (a) Standard mix Chemical 'A' 50% and Chemical 'B' 50%
- (b) Standard price per kilogram of Chemical 'A' ₹ 12 and Chemical 'B' ₹ 15
- (c) Actual input of Chemical 'B' 70 kilograms
- (d) Actual price per kilogram of Chemical 'A' ₹ 15
- (e) Standard normal loss 10% of total input.
- (f) Materials cost variance total ₹ 650 adverse
- (g) Materials Yield variance total ₹ 135 adverse.

You are required to calculate:

1. Materials mix variance total

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2. Materials usage variance total
 3. Materials price variance total
 4. Actual loss of actual input
 5. Actual input of chemical 'A'
 6. Actual price per kilogram of Chemical 'B' [6]
5. (a) What is Bench trending and how does it differ from Bench Marking? [8]

- (b) You are given, in respect of a manufacturing company, the following activity centres and their costs for a period:

	₹
1. Material handling	8,000
2. Machining	5,000
3. Assembly	4,800
4. inspection	1,400

The other particulars are:

	₹
Number of materials parts	8,000
Machine hours	150
Numbers of assembly parts	8,000
Number of finished units	1,000

- (i) Calculate overhead allocation rates using ABC.
- (ii) What will be the cost of a product which uses the following?
 8 units of materials
 One-fourth of the machine hour
 8 assembly parts (₹100)
 Power etc. (₹10)
 Given direct material cost for one unit ₹200. [4+4=8]
6. (a) An automobile production line turns out about 100 cars a day, but deviations occur owing to many causes. The production is more accurately described by the probability distribution given below:

Production /Day	Probability	Production /Day	Probability
95	0.03	101	0.15
96	0.05	102	0.10
97	0.07	103	0.07
98	0.10	104	0.05
99	0.15	105	0.03
100	0.20		
		Total	1.00

Finished cars are transported across the bay, at the end of each day, by ferry. If the ferry has space for only 101 cars, what will be the average number of cars waiting to be shipped, and what will be the average number of empty space on the boat? [8]

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(b) A company has four zones open and four salesmen available for assignment. The zones are not equal rich in their sales potentials. It is estimated that a typical salesman operating in each zone would bring in the following annual sales:

Zone: A: 1,26,000; Zone: B: 1,05,000; Zone: C: 84,000; Zone: D: 63,000.

The four sales men are also considered to differ in ability. It is estimated that working under the same condition their yearly sales would be proportionately as follows:

Salesman P: 7; Salesman Q: 5; Salesman R: 5; Salesman S: 4.

If the criterion is maximum expected total sales, the intuitive answer is to assign the best salesman to the richest zone, the next best to the second richest zone and so on. Verify this by the method of assignment. [8]

7. (a) XYZ Auto-manufacturing company has to prepare a design of its latest model of motorcycle. The various activities to be performed to prepare a design are as follows:

Activity	Description of activity	Preceding activity
A	Prepare drawing	---
B	Carry out cost analysis	A
C	Carry out financial analysis	A
D	Manufacture tools	C
E	Prepare bill of material	B, C
F	Receive material	D, E
G	Order sub-accessories	E
H	Receive sub-accessories	G
I	Manufacture components	F
J	Final assembly	I, H
K	Testing and shipment	J

Prepare an appropriate network diagram. [8]

(b) A Company produces the products P, Q and R from three raw materials A, B and C. One unit of product P requires 2 units of A and 3 units of B. A unit of product Q requires 2 units of B and 5 units of C and one unit of product R requires 3 units of A, 2 unit of B and 4 units of C. The company has 8 units of material A, 10 units of B and 15 units of C available to it. Profits/unit of products P, Q and R are ₹ 3, ₹ 5 and ₹ 4 respectively.

(a) Formulate the problem mathematically,

(b) Write the Dual problem. [8]

8. Answer any 4 questions out of 5 [4*4=16]

(a) Simulation Technique

(b) Kaizen Costing

(c) The Variants of Backflush Accounting

(d) Principles of Total Quality Management

(e) Uses of Learning Curve