

FINAL EXAMINATION

June 2018

P-15(SCMD)

Syllabus 2016

STRATEGIC COST MANAGEMENT — DECISION MAKING

Time Allowed: 3 Hours

Full Marks: 100

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

Section-A

(20 marks)

1. Choose the most appropriate answer to the following questions giving justification : 2×10=20

(i) A Company requires ₹ 85,00,000 in sales to meet its target net profit. Its contribution margin is 30% and the fixed costs are ₹ 15,00,000. What is the target net profit?

(a) ₹ 10,50,000

(b) ₹ 19,50,000

(c) ₹ 25,50,000

(d) ₹ 35,00,000

(ii) In a factory where standard costing system is followed, the production department consumed 1100 kgs of a material @ ₹ 8 per kg for product X resulting in material price variance of ₹ 2200 (Fav) and material usage variance of ₹ 1000 (Adv). What is the standard material cost of actual production of product X?

(a) 11,000

(b) 20,000

(c) 14,000

(d) 10,000

(iii) The following information relate to ABC company for two activity levels:

Activity level	60%	80%
Variable costs (₹)	12,000	16,000
Fixed costs (₹)	20,000	22,000

The differential cost for 20% capacity is

(a) ₹ 4,000

(b) ₹ 2,000

(c) ₹ 6,000

(d) ₹ 5,000

Please Turn Over

- (iv) 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
- (v) 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
- (vi) An operation has a 90% learning curve and the first unit produced took 28 minutes. The labour cost is ₹ 20 per hour. How much should the second unit cost?
- (a) ₹ 9.80
 - (b) ₹ 7.60
 - (c) ₹ 8.40
 - (d) ₹ 6.60
- (vii) If project A has a net present value (NPV) of ₹ 30,00,000 and project B has an NPV of ₹ 50,00,000, what is the opportunity cost if project B is selected?
- (a) ₹ 23,00,000
 - (b) ₹ 30,00,000
 - (c) ₹ 20,00,000
 - (d) ₹ 50,00,000
- (viii) A company operates an activity based costing (ABC) system to attribute its overhead costs to cost objects. In its budget for the year-ending 31st August, 2018. The company expected to place a total of 2000 purchase orders at a total cost of ₹ 1,00,000. This activity and its related costs were budgeted to occur at a constant rate throughout the budget year which is divided into 13 four week periods.
- During the four week period ended 30th June 2017, a total of 200 purchase orders were placed at a cost of ₹ 9,000. The over recovery of these costs for the four week period was
- (a) ₹ 2,000
 - (b) ₹ 3,000
 - (c) ₹ 1,500
 - (d) ₹ 1,000

- (ix) Empire Hotel has a capacity of 100 single rooms and 20 double rooms. Average occupancy is 70% for 365 days of the year. The rent for a double room is kept at 130% of a single room. The total room *occupancy days* in a year in terms of single room is

- (a) 32193
(b) 30660
(c) 31660
(d) 30993

- (x) Which of the following is correct in the context of network analysis?

- (a) There can be one or more activities without a predecessor in a network.
(b) Where two activities have the same start and end events, the end event of one activity is numbered differently and then connected by a dummy to the original start event.
(c) When crashing is carried out, the non-critical paths have to remain non critical.
(d) If the critical path is longer than the other paths, the project may be completed by using a path having a shorter duration.

Section-B

Answer any five questions.

Each Question carries 16 marks.

16×5=80

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

Please Turn Over

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.

Required:

- (a) (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. An Engineering Co. manufactures a single product whose standard cost structure is as follows:

	₹
Direct materials: 2.4kg at ₹ 30 per kg	72.00
Direct Labour : 6 hours at ₹ 4 per hour	24.00
Factory Overheads : 6 hours at ₹ 0.75 per hour	4.50
Total	100.50

The factory overheads are based on the following flexible budget:

Capacity	80%	90%	100%	100%
Production (units)	6,000	6,750	7,500	8,250
Overheads (₹)	29,250	3,150	33,750	36,000

Actual data for the month of January, 2018:

Budgeted production	7,500 units
Materials used	19,240 kg at ₹ 31 per kg
Direct labour	46,830 hours at ₹ 4.20 per hour
Actual factory overheads	₹ 36,340
Production completed	7,620 units

Details of Work-in-Progress:

Opening : 120 units, materials fully supplied, 50% converted.
Closing : 100 units, materials fully supplied, 50% converted.

Required:

- (i) Effective or Equivalent Production for each element of cost.

(ii) Calculate:

- (a) Material variances (cost, price and usage)
- (b) Labour variances (cost, rate of pay and efficiency)
- (c) Overhead variances (expenditure and volume variance, efficiency and capacity variance)

4+3+6=13

4. (a) A company manufactures two types of herbal product, A and B. Its budget shows profit figures after apportioning the fixed joint cost of ₹ 15 lakhs in the proportion of the numbers of units sold. The budget for 2018 indicates:

Particulars	A	B
Profit (₹)	1,50,000	30,000
Selling price per unit (₹)	200	120
P/V Ratio (%)	40	50

Required to advise on the best option among the following, if the company expects that the number of units to be sold would be equal.

- (i) Due to change in manufacturing process, the joint fixed cost would be reduced by 15% and the variable cost would be increased by 7%.
- (ii) Price of A could be increased by 20% as it is expected that the price elasticity of demand would be unity over the range of price.
- (iii) Simultaneous introduction of both the options, viz, (i) and (ii) above.

4+4+4=12

(b) What are the advantages of Inter-firm comparison?

4

5. A regional audit firm offers audit, tax and consulting services. The segmented profit and loss position for the next year shows the following position:

	Audit ₹	Tax ₹	Consulting ₹
1. Revenues	60,000	1,00,000	1,20,000
2. Costs:			
Service-level	50,000	60,000	70,000
Facility-level (apportioned)	10,000	12,000	16,000
Total	60,000	72,000	86,000
3. Operating Profit (1-2)	Nil	28,000	34,000

Partners are concerned about the profitability of their audit business and contemplate to close it down. In the event of closure of audit service, it might do more tax work. If audit service is discontinued, 50 per cent of the facility costs associated with auditing would be saved. More tax work would increase tax revenues by 45 per cent, but tax service-level costs would also increase by 45 per cent.

Required:

- (a) Determine whether the firm should drop auditing service and the impact on its closure on profit. Assume that audit centre facility level costs can be allocated to two other centres based on revenues. Compare Profitability of Tax and Consulting Services before and after closure of Audit Centre.
- (b) What other considerations are important to drop auditing service? 12+4=16
6. (a) Explain the concept of 'quality' and enumerate 'costs of quality' under different groups. 3+5=8
- (b) What is Learning Curve? What factors affect Learning Curve? 4+4=8

7. (a) A small project is composed of 8 activities whose estimated time are listed below:

Activity	1-2	2-3	2-4	3-5	4-6	5-6	5-7	6-7
Optimistic time (in weeks)	3	3	2	4	4	0	3	2
Most likely time (in weeks)	3	6	4	6	6	0	4	5
Pessimistic time (in weeks)	3	9	6	8	8	0	5	8

Required:

- (i) Draw the project network.
- (ii) Find the expected duration and variance for each activity.
- (iii) Find the critical path and expected project length.
- (iv) The probability that the project will be completed in 23 weeks.

Given that:

Z Value :	1.00	1.91	1.92	1.93	1.94
Probability :	0.9713	0.9719	0.9726	0.9732	0.9738

$$3+3+2+2=10$$

- (b) The management of SAB Ltd. has suggested that a linear programming model might be used for selecting the best mix of five possible products — A, B, C, D and E. The following information are available.

Per Unit of Product

	A	B	C	D	E
Selling Price (₹):	96	84	76	62	54
Costs (₹):					
Material	30	28	32	30	32
Direct Labour	36	32	12	8	8
Fixed Overhead	18	16	6	4	4
Total Costs	84	76	50	42	44

Expected maximum unit demand per week for each product at the prices indicated:

A	B	C	D	E
3000	2400	1800	1200	1200

Cost of material includes a special component which is in short supply. It costs ₹ 6 per unit. Only 11,600 units are available to the company during the week. The number of units of the special component needed for a unit of each product is:

A	B	C	D	E
2	1	4	3	6

The management of SAB Ltd. has ruled that expenditure on materials must not exceed a sum of ₹ 60,000.

All other resources are freely available in sufficient quantities for planned need.

Formulate a linear programming model stating clearly the criterion you use.

6

8. Write short notes on *any four* of the following:

4×4=16

- (a) Backflush Accounting
 - (b) Relevant Cost Analysis
 - (c) Treatment of Variances in cost accounts
 - (d) Value Engineering
 - (e) Life Cycle Costing
-