

FINAL EXAMINATION

December 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.

Answer Question No. 1 in Section A, which is compulsory, carrying 20 marks.

Further, answer any 5(five) Questions from Section B, each carrying 16 marks.

Section-A

(20 marks)

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

(i) A company has a break even point when sales are ₹ 3,20,000 and variable cost at that level of sales are ₹ 2,00,000. How much would contribution margin increase or decrease if variable expenses are dropped by ₹ 30,000?

- (A) Increase by 27.5%
- (B) Increase by 9.375%
- (C) Decrease by 9.375%
- (D) Increase by 37.5%

(ii) Twin Ltd. uses JIT and back flush accounting. It does not use a raw material stock control account. During September 2018, 10000 units were produced and sold. The standard cost per unit is ₹ 150 which includes materials of ₹ 60. During September 2018, ₹ 9,90,000 of conversion costs were incurred. The debit balance in cost of goods sold account for September 2018 was

- (A) ₹ 14,00,000
- (B) ₹ 14,80,000
- (C) ₹ 15,90,000
- (D) ₹ 16,20,000

Please Turn Over

- (iii) A company operates a standard absorption costing system. The budgeted fixed production overheads for the company for last year were ₹ 3,30,000 and budgeted output was 220,000 units. At the end of the company's financial year, the total of the fixed production overheads debited to the Fixed Production Overhead Control Account was ₹ 2,60,000 and the actual output achieved was 2,00,000 units. The under/over absorption of overhead was
- (A) ₹ 40,000 over absorbed
(B) ₹ 40,000 under absorbed
(C) ₹ 50,000 over absorbed
(D) ₹ 50,000 under absorbed
- (iv) A company has the capacity of producing 80000 units and presently sells 20000 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 in selling price if the demand is doubled at full capacity and profit margin on sale is taken at 25%?
- (A) ₹ 75
(B) ₹ 90
(C) ₹ 25
(D) ₹ 60
- (v) A factory can make only one of the three products X, Y or Z in a given production period. The following information are given:

Per unit ₹	X	Y	Z
Selling Price	1500	1800	2000
Variable Cost	700	950	1000

Assume that there is no constraint on resource utilization or demand and similar resources are consumed by X,Y and Z. The opportunity cost of making one unit of Z is

- (A) ₹ 850
(B) ₹ 800
(C) ₹ 1800
(D) ₹ 1500

(vi) AB company is a supermarket group that incurs the following costs:

- (a) The bought-in price of the goods
- (b) Inventory finance costs
- (c) Self refilling costs
- (c) Costs of repacking or 'pack out' prior to storage before sale

AB company's calculation of direct product profit (DPP) would include

- (A) Costs (a) and (c) only
- (B) All of the above costs except (b)
- (C) All of the above costs except (d)
- (D) All of the above costs

(vii) S Ltd. manufactures a product whose time for the first unit is 1000 hours. It experiences a learning curve of 80%. What will be the total time taken in hours for units 5 to 8?

- (A) 4096 hours
- (B) 3200 hours
- (C) 1536 hours
- (D) 2000 hours

(viii) H Group has two divisions, Division P and Division Q. Division P manufactures an item that is transferred to Division Q. The item has no external market and 6000 units produced are transferred internally each year. The costs of each division are as follows:

	Division P	Division Q
Variable cost	₹ 100 per unit	₹ 120 per unit
Fixed cost each year	₹ 1,20,000	₹ 90,000

Head Office management decides that a transfer price should be set that provides a profit of ₹ 30,000 to Division P. What should be the transfer price per unit?

- (A) ₹ 145
- (B) ₹ 125
- (C) ₹ 120
- (D) ₹ 135

- (ix) In the context of Critical Path Analysis, the portion of the float of an activity which cannot be consumed without affecting adversely the float of the subsequent activities is called
- (A) Free float
 - (B) Interfering float
 - (C) Independent float
 - (D) Total float
- (x) In CPA (Critical Path Analysis) which of the following is not a correct step in sequence?
- (A) Understanding the logic of the system under consideration
 - (B) Constructing the net work
 - (C) Providing estimates for activity duration
 - (D) Implementing and controlling the net work

Section-B

Answer *any five* questions.

Each Question carries 16 Marks.

16×5=80

2. (a) You are given the following data for a period in respect of two products, X and Y, which consume support services in different proportions:

	Product X	Product Y
Units produced	40	40
Material moves per product unit	12	28
Direct labour hrs. per unit	1740	1740

Budgeted material handling costs: ₹ 3,48,000

Required:

- (i) Determine cost per unit of X and Y using the volume-based allocation method (direct labour hrs.).
- (ii) Compute cost per unit of X and Y using ABC.
- (iii) How would you explain the results?

1+3+4=8

- (b) The profit for The Forward Look Ltd. works out to 12.5% of the capital employed and the relevant figures are as under:

	₹
Sales	5,00,000
Direct Materials	2,50,000
Direct Labour	1,00,000
Variable Overheads	40,000
Capital employed	4,00,000

The new Sales Manager who has recently joined the Company estimates for the next year a profit of about 23% on the capital employed provided the volume of Sales is increased by 10% and simultaneously there is an increase in Selling Price of 4% and an overall cost reduction in all the elements of cost by 2%.

Verify the contention of the Sales Manager by computing in detail the cost and profit for the next year and state whether his proposal can be adopted by the management. 8

3. (a) XYZ Ltd. produces three products. The cost data are as under:

Particulars	X	Y	Z
Direct Materials	₹ 64	₹ 152	₹ 117
Direct Labour:			

Dept.	Rate per hour (₹)	Hrs.	Hrs.	Hrs.
1	5	18	10	20
2	6	5	4	6.5
3	4	10	5	20
Variable overheads		₹ 16	₹ 9	₹ 24

Fixed overheads ₹ 4,00,000 per annum.

The budget was prepared at a time, when market was sluggish. The budgeted quantities and selling prices are as under:

Product	Budgeted Quantity	Selling price (₹)/unit
X	9750	270
Y	7800	280
Z	7800	400

Later the market improved and the sales quantities could be increased by 20% for product X and 25% each for products Y and Z. The Sales Manager confirmed that the increased quantities could be achieved at the prices originally budgeted. The Production Manager has stated that the output cannot be increased beyond the budgeted level due to limitation of direct labour hours in Department 2.

Required:

- (i) Set optimal product mix,
- (ii) State profit under optimal product mix.

6+6=12

(b) A company is producing and selling three products. How would you determine relative profitability of products in each of the following independent situation?

- (i) Total sales potential in unit is limited,
- (ii) Total sales potential in value is limited,
- (iii) Raw materials are in short supply,
- (iv) Production capacity (machine hours) is limited.

1+1+1+1=4

4. (a) A company is organized into two divisions, namely X and Y, and produces three products A, B and C. Data per unit are:

	A	B	C
Market price (₹)	240	230	200
Variable costs (₹)	168	120	140
Direct labour (hours)	4	5	3
Maximum sales potential (units)	1600	1000	600

Division Y has a demand for 600 units of product B for its use. If Division X cannot supply the requirement, Division Y can buy a similar product from market at ₹ 224 per unit.

Required:

What should be the transfer price of 600 units of B for Division Y, if the total direct labour-hours available in Division X are restricted to 15000?

(b) Prism Ltd. has decided to adopt JIT policy for materials. The following effects of JIT policy are identified:

- (i) To implement JIT, the company has to modify its production and material receipt facilities at a capital cost of ₹ 2,00,000. The new machine will require a cash operating cost ₹ 2,16,000 p.a. The capital cost will be depreciated over 10 years.
- (ii) Raw material stockholding will be reduced from ₹ 40,00,000 to ₹ 15,00,000.
- (iii) The company can earn 12% on its long-term investments.
- (iv) The company can avoid rental expenditure on storage facilities amounting to ₹ 66,000 per annum. Property Taxes and Insurance amounting to ₹ 44,000 will be saved due to JIT programme.
- (v) Presently there are 7 workers in the Store department at a salary of ₹ 10,000 each per month. After implementing JIT scheme, only 4 workers will be required in this department. Balance 3 workers' employment will be terminated.
- (vi) Due to receipt of smaller lots of Raw Materials, there will be some disruption of production. The costs of stockouts are estimated at ₹ 1,54,000 per annum.
- (vii) Since the supplier is new having no reputation as yet in the market, an additional inspection cost of ₹ 12,000 p.a. has to be incurred.

Required:

Determine the financial impact of the JIT policy. Is it advisable for the company to implement JIT system? 6+2=8

5. (a) One kilogram of product 'K' requires two chemicals A and B. The following were the details of product 'K' for the month of June 2018:

- (i) Standard mix ratio is 1 : 1
- (ii) Standard price per kilogram of chemical 'A' ₹ 12 and chemical 'B' ₹ 15
- (iii) Actual input of chemical 'B' 70 kilograms

- (iv) Actual price per kilogram of Chemical 'A' ₹15
- (v) Standard normal loss 10% of total input
- (vi) Materials cost variance total ₹ 650 adverse and the same was fully attributable to Chemical 'B'
- (vii) Materials yield variance total ₹ 135 adverse

Required:

Compute all missing variances and complete the Variance Report.

6+4=10

(b) For a machine the financial data are given below:

Time (Year)	0	1	2	3	4
Outlay (₹)	5000				
Operating Costs (₹)		1400	1500	1600	1700
Maintenance (₹)			300	400	500
Value if Scrapped (₹)		3400	2000	800	600

The appropriate interest rate is 12% p.a. and the discount factor is as follows:

Year	0	1	2	3	4
12% Disc. Factor	1	0.893	0.797	0.712	0.636

Required:

Determine the optimal length of replacement cycle.

4+2=6

6. (a) The following is the information regarding turnover and quality cost of a company:

- (i) Sales revenue ₹ 10,000,000; net income ₹10,00,000
- (ii) During the year, customers returned 30000 units needing repair. Repair cost averages ₹ 7 per unit.

- (iii) Six inspectors are employed, each earning an annual salary of ₹ 25,000. These six inspectors are involved only with final inspection (Product acceptance).
- (iv) Total scrap is 30000 units. All scrap is quality related. The cost of scrap is about ₹ 15 per unit.
- (v) Each year, approximately 150000 units are rejected in final inspection. Of these units, 80 per cent can be recovered through rework. The cost of rework is ₹ 3.00 per unit.
- (vi) A customer cancelled an order that would have increased the profits by ₹ 2,50,000. The customer's reason for cancellation was poor product performance. The accounting and marketing departments agree that the company loses at least this much during the year for the same reason.
- (vii) The company employs five full time employees in its complaint department. Each earns ₹ 20,000 a year.
- (viii) The company gave sales allowances totalling ₹ 1,30,000 due to substandard products being sent to the customer.
- (ix) The company requires all new employees to take in three hour Quality-Training programme. The estimated cost for the programme is ₹ 80,000.
- (x) Inspection of the final product requires testing equipment. The annual cost operating and manufacturing this equipment is ₹ 1,20,000.

Required:

Prepare a simple quality cost report classifying costs by rational category.

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- (b) The following was the pattern for demand of cars rented out by a tourist operator observed for 100 days:

No. of cars	5	7	10	15
No. of days	20	30	40	10

The random numbers are 88, 76, 10, 05, 23.

Required:

- (i) Simulate the demand for cars over five days.
- (ii) How many cars should the operator have in order to have at least 75% probability of fulfilling the demand based on your simulated results?

5+3=8

7. (a) Given the following information regarding a project and the time duration of each activity:

Activity	Preceding activity	Normal Time (days)
A	—	16
B	—	20
C	A	8
D	A	10
E	B,C	6
F	D,E	12

Required:

- (i) Draw the activity network of the project.
- (ii) Find critical path and duration of the project.
- (iii) Find the total float and free-float for each activity. 2+2+4=8

(b) Coffee powder is made by a shop by blending different flavours of coffee seeds. 520 gms of Plantation A seeds and 510 gms of Plantation B seeds are ground to yield 1000 gms of Special Blend powder. 520 gms of Peaberry seeds and 560 gms of Plantation A seeds are ground to yield 1050 gms of Special Peaberry powder. 500 gms of Plantation B seeds and 510 gms of Robusta seeds are ground to get 980 gms of Normal Blend powder. The contribution per kg of Special Blend, Special Peaberry and Normal Blend are ₹ 100, 120 and 140 respectively. The following stocks are available for the production period:

Plantation A: 200 kgs; Plantation B: 300 kgs; Peaberry: 250 kgs; Robusta: 51kgs.

Grinding capacity on a total is limited to 500 kgs of output in a production period.

Required:

Formulate the above as a linear programme with the objective to maximise contribution. Identify the variables and give the constraints. (Consider 1000 gms = 1kg).

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

4×4=16

- (a) Business Process Re-engineering
 - (b) Assignment
 - (c) Features of Target Costing
 - (d) Differences between Standard Costing and Kaizen Costing
 - (e) Methods of Solving Transportation Problem
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