

# FINAL EXAMINATION

December 2017

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. Each question carries 2 (two) marks. 2×10=20

- (i) The following figures are extracted from the books of a company:

Budgeted O/H ₹ 10,000 (Fixed ₹ 6,000, Variable ₹ 4,000)

Budgeted Hours 2000

Actual O/H ₹ 10,400 (Fixed ₹ 6,100, Variable ₹ 4,300)

Actual Hours 2100

Variable O/H cost variance and Fixed O/H cost variance will be:

- (a) 100 (A) and 200 (A)  
(b) 100 (F) and 200 (F)  
(c) 100 (A) and 200 (F)  
(d) 200 (A) and 100 (F)
- (ii) A company produces a product which is sold at a price of ₹ 80. Its Variable cost is ₹ 32. The company's Fixed cost is ₹ 11,52,000 p.a. The company operates at a margin of safety of 40%. The total sales of the company is:
- (a) 4,000 units  
(b) 40,000 units  
(c) 30,000 units  
(d) 20,000 units

Please Turn Over

- (iii) The P/V ratio of a firm dealing in Electrical equipment is 50% and the margin of safety is 40%. BEP of the firm at a sales volume of ₹ 50,00,000 will be
- (a) ₹ 25,00,000
  - (b) ₹ 35,00,000
  - (c) ₹ 30,00,000
  - (d) ₹ 36,00,000
- (iv) ABC Limited has current PBIT of ₹ 19.20 lakhs on total assets of ₹ 96 lakhs. The company has decided to increase assets by ₹ 24 lakhs, which is expected to increase the operating profit before depreciation by ₹ 8.40 lakhs. There will be a net increase in depreciation by ₹ 4.80 lakhs. This will result in ROI
- (a) to increase by 1%
  - (b) to decrease by 1%
  - (c) to decrease by 1.5%
  - (d) to remain the same
- (v) For a Learning Curve percentage of 72%, the time to be taken to complete the 4th unit of a 12-unit job involved in the assembly line, if the initial unit requires 80 hours, will be
- (a) 43.50 hrs
  - (b) 41.47 hrs
  - (c) 46.71 hrs
  - (d) 40.95 hrs
- (vi) Marketing department of an organisation estimates that 40,000 of new mixers could be sold annually at a price of ₹ 60 each. To design, develop and produce these new mixers an investment of ₹ 40,00,000 would be required. The company desires a 15% return on investment (ROI). Given these data, the target cost to manufacture, sell, distribute and service one mixer will be
- (a) ₹ 37.50
  - (b) ₹ 40.00
  - (c) ₹ 45.00
  - (d) ₹ 48.60

(vii) When you wait until the manufacture of a product has been completed and then record all of the related issuances of inventory from stock that were required to create the product, it is called

- (a) Forensic Accounting
- (b) Back-flush Accounting
- (c) Tax Accounting
- (d) Lean Accounting

(viii) Match the following:

(A)	Dr. Deming believes	(1)	Common causes
(B)	Ishikawa development	(2)	To prevent defect
(C)	Type of variation is due to	(3)	Cause & effect diagram
(D)	Crosby's objective of quality	(4)	Histogram

The correct order is

- (a) A-3, B-2, C-1, D-4
- (b) A-2, B-3, C-4, D-1
- (c) A-2, B-3, C-1, D-4
- (d) A-4, B-3, C-1, D-2

(ix) Sab Ltd. fixes the inter-divisional transfer prices for its products on the basis of cost plus a return on investment in the division. The budget for division X for 2016-17 appears as under:

	₹
Fixed Assets	5,00,000
Current Assets	3,00,000
Debtors	2,00,000
Annual Fixed cost of the Division	8,00,000
Variable cost per unit of product	10

Budgeted Volume	400000 units per year
Desired R.O.I.	28%

Transfer price for division X is

- (a) ₹ 12.70
  - (b) ₹ 10.70
  - (c) ₹ 8.70
  - (d) ₹ 14.70
- (x) A company uses traditional standard costing system. The inspection and set-up 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 set up. The budgeted production is 10,000 units in batches of 1,000 units whereas actually 9,000 units were produced in 11 batches. The cost per batch under ABC system will be
- (a) ₹ 160
  - (b) ₹ 200
  - (c) ₹ 180
  - (d) ₹ 220

### **Section-B**

Answer *any five* questions.

Each Question carries 16 Marks.

16×5=80

2. (a) What do you understand by 'quality' in the context of Quality Cost Management? Explain. 8
- (b) Why would you classify costs of quality into different groups? Enumerate them and give suitable examples where possible. 4+4=8
3. (a) The Stock Control Policy of Vidhata Co. is that each stock is ordered twice a year, the quantum of each order being one-half of the year's forecast demand. The Materials Manager,

however, wishes to introduce a policy in which for each item of stock, Re-order Levels and EOQ are calculated. For one of the items X, the following information are available:

Forecast Annual Demand	3,600 units
Cost per unit	₹ 100
Cost of Placing an order	₹ 40
Stockholding Cost	20% of the average stock value
Buffer Stock to cover fluctuations in demand	100 Nos.

*Required:*

If the new policy is adopted, calculate for stock item X,

- Re-order Level that would be set by the Materials Manager.
- Anticipated reduction in value of the average stock investment.
- Anticipated reduction in total inventory costs in the first and subsequent years.

$$2+3+(3+2)=10$$

- (b) The management of W Ltd., which is now operating at 50% capacity, expects that the volume of sales will drop below the present level of 5,000 units per month. The operating statement prepared for monthly sales shows:

	₹	₹
Sales (5,000 units at ₹ 3 per unit)		15,000
Less: Variable Costs at ₹ 2 per unit	10,000	
Fixed Overheads	<u>5,000</u>	<u>15,000</u>
Net Profit		Nil

It is proposed that the company should suspend production until market conditions improve. The General Manager estimated that a minimum of fixed cost (shut down costs) amounting to ₹ 2,000 would be necessary in any event.

*Required:*

- Advise Management at what level of sales it could think of suspending production.
- If the sales price is ₹ 2.80, what should be the level of sales for shut down decision?

$$3+3=6$$

4. (a) The following data are obtained from the records of a company:

	Year 1 (₹)	Year 2 (₹)
Sales	80,000	1,00,000
Profit	10,000	15,000

Required:

- Calculate Break-even Point
- Profit or Loss when sales amount to ₹ 60,000, and
- Required sales for level of profit of ₹ 20,000.

4+2+2=8

- (b) Your company wants to buy one machine. Two alternative models are available — A and B. The following information are available with respect to them:

	Model A	Model B
Output p.a.	10,000	10,000
Fixed costs p.a. (₹)	30,000	16,000
Profit at 100% capacity (₹)	30,000	24,000

Both the machines will produce identical products. The annual market demand for the product is 10,000 units @ ₹ 10 per unit.

Required:

- The level of sales at which both are equally profitable;
- The range of sales at which one is more profitable than the other.

4+4=8

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

Particulars	Product T	Product C	Product S
Selling Price (₹)	66	75	90
Material and other variable cost (₹)	24	30	40
Bottleneck resource time (minutes)	15	15	20

Budgeted factory costs for the period are ₹ 4,43,200. The bottleneck resource time available is 1,50,240 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.

3+3=6

- (b) Force Ltd. is a manufacturer of a fire fighting equipment which consists of five components three of which are made using general purpose machines and two by manual labour. The data for the manufacture of the equipment are as follows:

Components	F	O	R	C	E	Total
Machine hours required per unit	20	28	24			72 hrs
Labour hours required per unit				2	1	3 hrs
Variable cost per unit ₹	64	108	116	24	8	320
Fixed cost per unit (apportioned) ₹	96	204	232	48	72	632
Total component cost ₹	160	312	348	72	60	952
Assembly cost/unit (all variable) ₹						80
Selling price/unit ₹						1,200

The marketing department of the company anticipates 50% increase in demand during the next period. General purpose machinery used to manufacture. F, O and R are already working to the maximum capacity of 9,504 hours and there is no possibility of increasing this capacity during the next period. But labour is available for making components C and E and also for assembly according to demand. The management is considering the purchase of one of the components F, O or R from the market to meet the increase in demand. These components are available in the market at the following prices:

Component F : ₹ 160

Component O : ₹ 320

Component R : ₹ 250

Required:

- (i) Profit made by the company from current operations.
- (ii) If the company buys any one of the components F, O or R, what is the extent of additional capacity that can be created?
- (iii) Assuming 50% increase in demand during the next period, which component should the company buy from the market?
- (iv) The increase in profit, if any, if the component suggested in (iii) is purchased from the market. 2+3+2+3=10

6. (a) Wipro is examining the profitability and pricing policies of its Software Division. The Software Division develops Software Packages for Engineers. It has collected data on three of its more recent packages — (i) ECE Package for Electronics and Communication Engineers, (ii) CE Package for Computer Engineers, and (iii) IE Package for Industrial Engineers.

Summary details on each package over their two-year cradle to grave product lives are:

Package	Selling Price	Number of units sold	
		Year 1	Year 2
ECE	₹ 250	2,000	8,000
CE	₹ 300	2,000	3,000
IE	₹ 200	5,000	3,000

Assume that no inventory remains on hand at the end of year 2. Wipro is deciding which product lines to emphasize in its software division. In the past two years, the profitability of this division has been mediocre.

Wipro is particularly concerned with the increase in R & D costs in several of its divisions. An analyst at the Software Division pointed out that for one of its most recent packages (IE), major efforts had been made to reduce R & D costs. Last week, Amit, the Software Division



Manager, decides to use Life Cycle Costing in his own division. He collects the following Life Cycle Revenue and Cost information for the packages (in ₹):

Particulars	Package ECE		Package CE		Package IE	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Revenues	5,00,000	20,00,000	6,00,000	9,00,000	10,00,000	6,00,000
Costs:						
R & D	7,00,000	—	4,50,000	—	2,40,000	—
Design of Product	1,15,000	85,000	1,05,000	15,000	76,000	20,000
Manufacturing	25,000	2,75,000	1,10,000	1,00,000	1,65,000	43,000
Marketing	1,60,000	3,40,000	1,50,000	1,20,000	2,08,000	2,40,000
Distribution	15,000	60,000	24,000	36,000	60,000	36,000
Customer Service	50,000	3,25,000	45,000	1,05,000	2,20,000	3,88,000

*Required:*

Prepare a Product Life Cycle Income Statement for each Software Package. Which package is most profitable and which is the least profitable? How do the three packages differ in their cost structure (the percentage of total costs in each category)? 6+2+2=10

(b) A practicing Cost and Management Accountant now spends ₹ 0.90 per K.M. on taxi fares for his client's work. He is considering two other alternatives – the purchase of a new small car or an old bigger car.

Item	New Small Car	Old Bigger Car
	(₹)	(₹)
Purchase Price	35,000	20,000
Sale Price after 5 years	19,000	12,000
Repairs and servicing per annum	1,000	1,200
Taxes and insurance p.a.	1,700	700
Petrol consumption per litre (k.m.)	10	7
Petrol price per litre	3.5	3.5

He estimates that he will travel 10000 K.M. annually.

Required:

Which of the three alternatives will be cheaper? If his practice expands and he has to travel 19,000 K.M. per annum will the cost of the two cars break even and why? Ignore interest and Income tax.

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7. (a) Draw a network from the following activities. Find the critical path and total duration of the project.

Activity	Immediate predecessor activity	Duration (days)
A	—	10
B	A	5
C	A	4
D	A	7
E	B,C	6
F	C,D	4
G	E,F	7

8

- (b) A company produces 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. One 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 units 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 per unit of product P, Q and R are ₹ 3, ₹ 5 and ₹ 4 respectively.

- (i) Formulate the problem mathematically.  
(ii) Write the Dual problem.

4+4=8

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

(a) Usefulness of Pareto Analysis

(b) Seven Principles of BRR

(c) Four P's of TQM

(d) Lean Accounting

(e) Value Engineering

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