Paper 15- Strategic Cost Management- Decision Making

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Time allowed:3 hours **Full Marks: 100**

The figures in the margin on the right side indicate full

PART – I

Answer Question Number 1 which is compulsory **(20 marks)**

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

(i) The Stock Control data extracted from the records of for Material A are:

Annual usage	**3600 units**
Cost per unit	**Rs.100**
Cost of placing an order	**Rs.40**
Stock holding Cost	**20% of the overall stock volume**
Lead time	**One month**

What will be the EOQ based on the above data?

(a) 210 units
(b) 175 units
(c) 360 units
(d) 120 units

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(ii) B Ltd. produces a product which is sold at a price of Rs. 160. Variable cost is Rs.64. The B Ltd's Fixed cost is Rs.23,04,000 p.a. It operates at a margin of safety of 40%. Derive the total sales of the company.

(a) 42,000 units
(b) 40,000 units
(c) 60,000 units
(d) 50,000 units

(iii) For a Learning Curve percentage of 80% calculate 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.

(a) 51.52 hrs.
(b) 41.47 hrs.
(c) 46.71 hrs.
(d) 40.95 hrs.

(iv) If the P/V Ratio is 50%, and Margin of Safety is 40%, What is the Break Even Sales at a sales volume of Rs. 50,00,000?

(a) Rs. 25,00,000
(b) Rs.30,00,000
(c) Rs.35,00,000
(d) Rs. 36,00,000

(v) The following information are extracted from the records of VV Ltd.

Activity level	60%	80%
Variable costs (Rs.)	24,000	32,000
Fixed costs (Rs.)	40,000	44,000

What is the differential cost for 20% capacity?

(a) Rs. 4,000
(b) Rs. 8,000
(c) Rs. 12,000
(d) Rs. 10,000

(vi) PQ Lodge 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 150% of a single room. What is the total room occupancy days in a year in terms of single room?

(a) 33215
(b) 30660
(c) 31660
(d) 32193

(vii) AR Ltd. makes and sales 9,000 units of a product, it makes a profit of Rs. 10,000, whereas in the case of 7,000 units, it would lose Rs. 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

(viii) If project FR has a net present value (NPV) of Rs.60,00,000 and project CR has an NPV of Rs.1,00,00,000, Calculate the opportunity cost if project CR is _____.

(a) Rs.40,00,000
(b) Rs.60,00,000
(c) Rs.1,00,00,000
(d) Rs.1,60,00,000

(ix) OP Ltd. is a supermarket group the following costs are incurred by OP Ltd.

A. The bought-in price of the goods
B. Inventory finance costs
C. Self-refilling costs
D. Costs of repacking or 'pack out' prior to storage before sale

OP Ltd. Is calculating the Direct Product Profit (DPP) which 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

(x) While conducting 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) Independent float

(c) Interfering float

(d) Total float

PART – II

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

[16x5= 80]

2. (a) RR Ltd. has a key resource (bottleneck) of Facility A in its factory, which is available for 31,300 minutes per week.

Budgeted factory costs and data on two products, X and Y, are shown below

Product	Selling Price/Unit (Rs.)	Material Cost/Unit (Rs.)	Time Facility A
X	35	20.00	5 minutes
Y	35	17.50	10 minutes

Budgeted factory costs per week:

	Rs.
Direct labour	25,000
Indirect labour	12,500
Power	1,750
Depreciation	22,500
Space costs	8,000
Engineering	3,500
Administreation	5,000

In the last week it had an actual production of 4,750 units of product X and 650 units of product Y. Actual factory cost was Rs.78,250.

Compute the following:

(i) Total factory costs (TFC)

(ii) Cost per Factory Minute

(iii) Return per Factory Minute for both products

(iv) TA ratios for both products.

(v) Throughput cost per the week.

(vi) Efficiency Ratio 10

(b) Mr. BH who is a practicing professional spends Rs.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 (Rs.)	Old Bigger Car(Rs.)
Purchase Price	35,000	20,000
Sale price after 5 years	19,000	12,000
Repairs and Servicing Cost p.a.	1,000	1,200
Taxes and insurance p.a	1,700	700

Petrol consumption per liter (k.m)	10	7
Petrol price per liter	3.5	3.5

He has estimated that he drives 10,000 Km annually.

Which of the three alternatives will be cheaper? If his practice expands he has to drive 19,000 Km p.a. in that case where will the cost of the two cars break even and why? Ignore interest and Income-tax. 6

3. (a) Four types of products under the brand name of L,M,P and P are manufactured by ABC Ltd. The sales mix in value comprises 33 1/3%, 41 2/3%, 16 2/3% and 8 1/3% of products L, M, O and P, respectively. The total budgeted sales (100%) are Rs. 1,20,000 p.m.

Operating Costs are —

Variable costs: Product L 60% of selling price, Product M 68% of selling price, Product O 80% of selling price, Product P 40% of selling price; Fixed costs: Rs. 29,400 p.m. Required:

Derive the break-even-point for the products on overall basis. 8

(b) The profit for SS Ltd. worked out to be 12.5% of the capital employed and the other relevant figures are as under:

Particulars	Rs.
Sales	5,00,000
Direct Material	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

4. (a) A brass foundry making castings which are transferred to the machine shop of the company at standards in regard to material stocks which are kept at standard price are as follows:

Figures in respect of a costing period are as follows:

Particulars	Copper	Zinc
Standard Mixture	70%	30%
Standard Price	Rs.2,400/ Tonne	Rs.650/ Tonne
Standard Loss in melting	5% of input	5% of input
Opening Stock in quantity	100 Tonnes	60 Tonnes
Finished Stock in quantity	110 Tonnes	50 Tonnes
Purchases in quantity	300 Tonnes	100 Tonnes
Purchases costing	Rs.7,32,500	Rs.62,500
Metal melted	400 Tonnes	
Casting Produced	375 Tonnes	

Present figures showing: Material Price, Mixture and yield Variance. 8

(b) List the requisites for Installation of a Uniform Costing System. 8

5. (a) PQR Ltd which has a system of assessment of Divisional Performance on the basis of residual income. It has two divisions A and B. A has annual capacity to manufacture 15,00,000 numbers of a special component that it sells to outside customers, but has idle capacity. The budgeted residual income of B is Rs. 1,20,00,000 while that of A is Rs. 1,00,00,000. Other relevant details extracted from the budget of A for the current year were as follows.

Particulars	
Sale (Outside Customer)	12,00,000 @ Rs.180
Variable cost p.u.	160
Divisional fixed cost	Rs. 80,00,000
Capital employed	9,00,00,000
Cost of Capital	10%

B has just received a special order for which it requires components similar to the ones made by A. Fully aware of the idle capacity of A, B has asked A to quote for manufacture and supply of 3,00,000 numbers of the components with a slight modification during final processing. A and B agree that this will involve an extra variable cost of Rs. 6 per unit.
You are required to calculate the transfer price which A should quote to B to achieve its budgeted residual income. 8

(b) The management of a manufacturing company decided to implement Just-in-Time (JIT) policy and further identified the following tasks:

(1) To implement JIT, the company has to modify its production and material receipt facilities at a capital cost of Rs.10,00,000. The new machine will require a cash operating cost Rs.1,08,000 p.a. The capital cost will be depreciated over 5 years.

(2) Raw material stockholding will be reduced from Rs.40,00,000 to Rs.10,00,000.

(3) The company can earn 15% on its long-term investments.

(4) The company can avoid rental expenditure on storage facilities amounting to Rs. 33,000 per annum. Property Taxes and insurance amounting to Rs. 22,000 will be saved due to JIT programme.

(5) Presently there are 7 workers in the store department at a salary of Rs. 5,000 each per month. After implementing JIT scheme, only 5 workers will be required in this department. Balance 2 workers' employment will be terminated.

(6) Due to receipt of smaller lots of Raw Materials, there will be some disruption of production. The costs of stock-outs are estimated at Rs. 77,000 per annum.

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

6. (a) MN Travels Is a tourist operator. It has the following pattern of demand of cars rented out, 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

(b) G Ltd. has four zones of operation and four salesmen available for assignment. The zones are not equally rich in regards 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 salesmen are also considered to differ in ability. It is estimated that if they are 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) Following are the information extracted regarding a project and the time duration of each relevant activity:

Activity	Preceding	Normal time (days)
A	-	16
B	-	20
C	A	8
D	A	10
E	B, C	6
F	D, E	12

You are required to:

(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) BB Ltd. produces the following three 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 Rs.3, Rs.5 and Rs.4 respectively.

(i) Formulate the problem mathematically,

(ii) Write the Dual problem. **5+3=8**

8. Write short notes on any four of the following: **4×4= 16**

(a) Implementation of PRAISE Process
(b) Limitations of Back Flush Accounting
(c) Characteristics of Target Costing
(d) Assignment
(e) Life Cycle Costing