

**PAPER 5 : COST ACCOUNTING & COST SYSTEM  
NOVEMBER 1998**

Question No.1 is compulsory

Answer any four questions from the rest.

Working notes should form part of the answer.

**Question 1**

- (a) Explain the concept of cost drives. **(4 Marks)**  
Indicate what you will consider as cost drives for the following business functions:  
(i) research and development; and  
(ii) customer service.
- (b) Briefly identify the areas of cost reduction at the product design stage. **(4 Marks)**
- (c) List out the assumptions of break – even analysis. **(4 Marks)**
- (d) A Company presently brings coal to its factory from a nearby yard and the rate paid for transportation of coal from the yard located 6 km away to factory is Rs.50 per tonne. The total coal to be handled in a month is 24,000 tonne. **(12 Marks)**

The company is considering proposal to buy its own truck and has the option of buying either a 10 tonne capacity or a 8 tonne capacity truck.

The following informations are available:

	10 tonne Truck	8 tonne Truck
Purchase price	Rs.10,00,000	8,50,000
Life (year)	5	5
Scrap value at the end of 5 <sup>th</sup> year	Nil	Nil
Km per litre of diesel	3	4
Repair / Maint. P.a. per Truck	60,000	48,000
Other fixed expenses p.a.	60,000	36,000
Lubricants & Sundries per 100 km	Rs.20	Rs.20

Each truck will daily make 5 trips (to and fro) on an average for 24 days in a month.

Cost of Diesel Rs.15 per litre.

Salary of Drivers Rs.3,000 per month – Two Drivers will be required for a Truck

Other staff expenses Rs.1,08,000 p.a.

Present a comparative cost sheet on the basis of above data showing transport cost per tonne of operating 10<sup>t</sup> and 8<sup>t</sup> Truck at full capacity utilization.

**Question 2**

- (a) What are the limitations of marginal costing ? Explain **(5 Marks)**
- (b) A Company can produce and sell at its maximum capacity 20,000 units of a product. The sale price is Rs.100. The present sales is 15,000 units. To produce over 20,000 units and upto another 10,000 units some balancing equipments are to be installed at a cost of Rs.10 lakhs and the same will have a life span of 10 years. **(14 Marks)**

The current cost structure is as under:

Direct material	30% of sale value
Direct labour	20% of sale value
Variable overheads	Rs. 20 per unit
Profit	Rs.15 per unit.

The present cost is estimated to go up due to price escalation as under:

10% in Direct Material from present level of 30%

25% in Direct Labour from present level of 20%

Rs.50,000 in Fixed overheads per year.

There is a concrete proposal from a party to take 10,000 units additionally over the present level of output on a long term basis at a unit of Rs.90. apart from the investment of Rs.10 lakhs, as shown above, the fixed overheads will increase by Rs.50,000 due to additional Administrative expenses.

The Company is in a dilemma as to whether to accept the order for 10,000 units or to use the present unused capacity of 5,000 units for which there will be additional selling expenditure of Rs.50,000. Ignore financing charges and give your recommendation.

**Question 3**

- (a) What are incremental costs and sunk costs? Discuss. **(3 Marks)**
- (b) Briefly explain the implications of replacement costs and historical costs in financial reporting. **(3 Marks)**

(c) A Company is organized on decentralized lines, with each manufacturing division operating as a separate profit centre. Each division manager has full authority to decide on sale of the division’s output to outsiders and to other divisions.

Division C has always purchased its requirement of a component from Division A. but when informed that Division A was increasing its selling price to Rs.150, the manager of Division C decided to look at outside suppliers.

Division C can buy the component from an outside supplier for Rs.135. But Division A refuses to lower its price in view of its need to maintain its return on the investment.

The top management has the following information:

C’s annual purchase of the component	1,000 units
A’s variable costs per unit	Rs.120
A’s fixed cost per unit	Rs.20

Required : **(13 Marks)**

- (i) Will the company as a whole benefit, if Division C bought the component at Rs.135 from an outside supplier?
- (ii) If A did not produce the material for c, it could use the facilities for other activities resulting in a cash operating savings of Rs.18,000. Should C then purchase from outside sources?
- (iii) Suppose there is no alternative use of A’s facilities and the market price per unit for the component drops by Rs.20. Should C now buy from outside?

**Question 4**

- (a) What are relevant costs ? Identify two common pitfalls in relevant cost analysis. **(4 Marks)**
- (b) Inorganic Chemicals purchases salt and processes it into more refined products such as caustic soda, chlorine and polyvinyl chloride (PVC). For the month of October, 1998, the firm purchased salt for Rs.80,000 conversion costs incurred were Rs.1,20,000 upto the split off point, at which time two salable products were produced; Caustic soda and chlorine. Chlorine could be further processed into PVC. Production and other relevant information for the month of October, 1998 are as follows: **(15 Marks)**

	Production	Sales	Sales price per ton
Caustic soda	2,400 tons	2,400 tons	Rs.100
Chlorine	1,600 tons	--	--
PVC	1,000 tons	1,000 tons	Rs.400

The full production of chlorine was further processed at an incremental cost of Rs.40,000 to yield 1,000 tons of PVC. There were no by-products or scrap from this further processing of chlorine. The organization did not have any opening or closing stocks of any of the above commodities for October, 1998.

There is a very active market for chlorine. The firm could have sold its entire production for October, 1998 at Rs.150 per ton.

You are required to calculate:

- (i) How the joint costs of Rs.2,00,000 would be allocated between caustic soda and chlorine under each of the methods, viz., (a) sales value at split off; (b) Physical measure (9tons); and (c) Estimated net realizable value?

- (ii) The gross margin percentage of (a) caustic soda and (b) PVC under the three methods given in (i) above.
- (iii) Daily Swimming Pool Ltd., offers to purchase 1,600 tons of chlorine in November, 1998 at Rs.150 per ton. This would mean that no PVC would be produced that month. Will the acceptance of the offer affect the operating income for November, 1998?

**Question 5**

CARCARE CORPORATION has just today paid for and installed a special machine for polishing cars at one of its prestigious outlets. It is the first day of the company's fiscal year. The machine costs Rs.20,000. Its annual operating costs total Rs.15,000, exclusive of depreciation. The machine will have a four year useful life and a zero terminal disposal value. **(19 Marks)**

After the machine has been used for one day, a machine salesman walks in. He offers a different machine that promises to do the same job at a yearly operating cost of Rs.9,000, exclusive of depreciation. The new machine will cost Rs.24,000 in cash, duly installed. The "old" machine is unique and can be sold outright for only Rs.10,000 minus Rs.2,000 removal cost. The new machine, like the old one, will have a four year useful life and zero terminal disposal value.

Sales, all in cash, will be Rs.1,50,000 annually and other cash costs will be Rs.1,10,000 annually, regardless of this decision.

For simplicity, ignore income taxes, interest and present value considerations.

Required :

- Prepare a statement of cash receipts and disbursements for each of the four years under both alternatives. What is the cumulative difference in cash flows for the four years taken together?
- Prepare income statement for each of the four years under both alternatives. Assume straight line depreciation. What is the cumulative difference in operating income for the four years taken together?
- What are the irrelevant items in your representations in requirements (a) and (b) ? Why are they irrelevant ?
- Suppose the cost of the "old" machine was Rs.10,00,000 rather than Rs.20,000. nevertheless, the old machine can be sold outright for only Rs.10,000 minus Rs.2,000 removal costs. Would the net differences in requirements (a) and (b) change ? Explain.
- "To avoid a loss, we should keep the old machine." What is the role of book value in decisions about replacement of machines?

**Question 5**

- Identify the role of cost accountant in the area of material cost control. **(4 Marks)**
- How are the cost variances disposed off in a standard costing system? Explain **(3 Marks)**
- The Operations Manager of FLEXI SHOP ENTERPRISES is considering the possibility of leasing equipment for a new flexible manufacturing system(FMS) to replace existing equipment. The FMS lease will increase annual fixed costs by Rs.9,00,000 per year and reduce variable costs by Rs.800 per job. **(12 Marks)**

The manager believes that the annual number of jobs processed by the firm will be 900 , 1,200 or 1,500. The probabilities of these events occurring are:

Annual number of jobs	Probability
900	0.25
1,200	0.45
1,500	0.30
	1.00

**Required:**

Should the company lease the FMS? Support your conclusions with appropriate calculations.