

**PAPER 5: ADVANCED COST ACCOUNTING AND COST SYSTEMS
MAY 1998**

Question No.1 is compulsory. Answer any four from the rest.

Question 1

- (a) List out any four operation research techniques which can be used for cost control in an organization **(4 Marks)**
- (b) What is contribution? How is it related to profit? **(2 Marks)**
- (c) Discuss briefly the concept of Skimming Pricing Policy? **(6 Marks)**
- (d) A company produces and sells four types of dolls for children. It also produces and sells a set of dress kit for the dolls.

The company has worked out the following estimates for the next year:

Doll	Estimated demand	Standard Material Cost Rs.	Standard Labour Cost Rs.	Estimated Sales Per Unit Rs.
A	50,000	20	15	60
B	40,000	25	15	80
C	35,000	50	20	120
D	30,000	50	20	120
Dress Kit	2,00,000	15	5	50

To encourage the sale of dress kit, a discount of 20% in its price is offered if it were to be purchased along with the doll. It is expected that all the customers buying dolls will also buy the dress kit.

The company's factory has effective capacity of 2,00,000 labour hours per annum on a single-shift basis and it produces all the products on that basis. The labour hour rate is Rs.15. overtime of labour has to be paid at double the normal rate.

Variable cost works out to 40% of direct labour cost. Fixed cost are Rs.30 lakhs per annum

There will be no inventory at the end of the year.

You are to draw a conservative estimate of the year's profitability

(12 Marks)

Question 2

- (a) Enumerate and briefly explain any three methods of determining transfer prices. **(6 Marks)**
- (b) On 1st April, 1998, ZED Company began the manufacture of a new electronic gadget. The company installed a standard costing system to account for manufacturing costs. The standard cost for a unit of the product are as under:

	Rs.
Direct Material (3 kgs at Rs.5 per kg.)	15.00
Direct Labour (0.5 hour at Rs.20 per hour)	10.00
Manufacturing Overhead (75% of direct labour cost)	7.50
Total cost	32.50

The following data was obtained from ZED Company's records for April, 1998:

	Debit Rs.	Credit Rs.
Sales	--	1,25,000
Sundry creditors (For purchase of direct materials in April, 1998)	68,250	--
Direct Material Price Variance	3,250	--
Direct Labour Rate Variance	2,500	--
Direct Labour Efficiency Variance	--	2,000

The Actual Production in April 1998 was 4,000 units of the gadget, and the actual sales for the month was 2,500 units.

The amount shown above for direct materials price variance applies to materials purchased during April, 1998. There was no opening stock of raw materials on 1st April 1998.

Required:

Calculate for April, 1998 the following:

- (i) Standard direct labour hours allowed for the actual output achieved.
- (ii) Actual direct labour hours worked.
- (iii) Actual direct labour rate.
- (iv) Standard quantity of direct materials allowed (in kgs.)
- (v) Actual quantity of direct materials used (in kgs)
- (vi) Actual quantity of direct materials purchased (in kgs.)
- (vii) Actual direct materials price per kg.

(13 Marks)

Question 3

- (a) Gemini Enterprises currently makes as many units of part no.X-248 as it needs. Sen, General Manager of Gemini Enterprises, has received a quotation from another company for making part no.X-248 Zedco will supply 1,000 units of part no.X-248 per year at Rs.50 per unit. Zedco can begin supply on 1st July, 1998 and continue for 5 years, after which Gemini will not need the part. Zedco can accommodate any changes in Gemini's demand for the part and will supply it for Rs.50 regardless of quantity. Shah, the Controller of Gemini Enterprises, reports the following costs for manufacturing 1,000 unit of part no.X-248.

	Rs.
Direct materials	22,000
Direct labour	11,000
Variable manufacturing overhead	7,000
Depreciation on machine	10,000
Product and process engineering	4,000
Rent	2,000
Allocation of General plant overhead costs	5,000
Total costs	61,000

The following additional information is available:

- (a) Part X-248 is made on a machine used exclusively for its manufacture. The machine was acquired on 1st July, 1997 at a cost of Rs.60,000. The machine has a useful life of six years and a zero terminal disposal price. Depreciation is calculated on straight – line basis.
- (b) The machine could be sold today for Rs.15,000
- (c) Product and process engineering costs are incurred to ensure that the manufacturing process for part no. X-248 works smoothly. Although these costs are fixed in the short run, with respect to units of part no.X-248 is outsourced, product and process engineering cost of Rs.4,000 will be incurred for 1997-98 but not thereafter.
- (d) Rent costs of Rs.2,000 are allocated to products on the basis of the floor space used for manufacturing the product. If part number X-248 is discontinued, the space currently used to manufacture it would become available. The company could then use the space for storage purposes and saves Rs.1,000 currently paid for outside storage.
- (e) General plant overhead costs are allocated to each department on the basis of direct manufacturing labour costs. The costs will not change in total. But no general plant overhead will be allocated to part number X-248 if the part is outsourced.

Assume that Gemini requires a 12% rate of return for this project. The following information maybe useful:

Year	Present Value Factor at 12%
0	1.000
1	0.893
2	0.797
3	0.712

4	0.636
5	0.567

Required:

- (i) Should part number X-248 be outsourced? Prepare a quantitative analysis.
(ii) State any sensitivity analysis that seems to be advisable. Do not perform any sensitivity calculations
(iii) Sen is particularly concerned about his bonus for 1997-98. The bonus is based on the accounting income of Gemini Enterprises. What decision will Sen make if he wants to maximize his bonus for 1997-98? **(16Marks)**
- (b) Briefly explain the concept of Simo Charts. **(3 Marks)**

Question 4

- (a) Distinguish between absorption costing and marginal costing. **(4 Marks)**
(b) ACE Office Supplies Corporation retails two products – a standard and a deluxe version of a designer ball point pen. The budgeted income statement is as under:

	Standard	Deluxe	Total
Sales (in units)	1,50,000	50,000	2,00,000
	Rs.	Rs.	Rs.
Sales :			
@ Rs.20 per unit	30,00,000	--	
@ Rs.30 per unit	--	15,00,000	45,00,000
Variable costs:			
@ Rs.14 per unit	21,00,000	--	
@ Rs.18 per unit	--	9,00,000	30,00,000
Contribution	9,00,000	6,00,000	15,00,000
Fixed costs			12,00,000
Profit			3,00,000

Required :

- (i) Calculate the break even point in units assuming that the planned sales mix is maintained.
(ii) Calculate the breakeven point in units:
i. If only standard version is sold, and
ii. If only deluxe version is sold.
(iii) Suppose 2,00,000 units are sold, but only 20,000 units are of deluxe quality. Calculate the profit. Calculate the breakeven points if these relationships persists in the next accounting period. Compare your answer with the original plan and the answer in requirement (b). What is your major finding? **(15 Marks)**

Question 5

Modern Airways owns a single jet aircraft and operates between EXETOWN and WYETOWN. Flights leave EXETOWN on Mondays and Thursdays and depart from WYETOWN on Wednesdays and Saturdays. Modern Airways cannot afford any more flights between EXETOWN and WYETOWN. Only tourist class seats are available on its flights. An analyst has collected the following information:

Seating capacity per plane	360
Average passengers per flight	200
Flights per week	4
Flights per years	208
Average one-way fare	Rs.5,000
Variable fuel costs	Rs.1,40,000 per flight
Food service to passengers (not charged to passengers)	Rs.200 per passenger
Commission paid to travel agents paid by Modern Airways on each ticket booked on Modern Airways.	8% fare

(Assume that all Modern Airways tickets are booked by travel agents)

Fixed annual lease cost allocated to each flight	Rs.5,30,000 per flight
Fixed ground service (maintenance, check-in, baggage handling cost allocated to each flight)	Rs.70,000 per flight
Fixed salaries of flight crew allocated to each flight	Rs.40,000 per flight.

For the sake of simplicity, assume that fuel costs are unaffected by the actual number of passengers on a flight. Required:

- What is the operating income that Modern Airways makes on each one-way flights between EXETOWN and WYETOWN?
- The market research department of Modern Airways indicates that lowering the average one-way fare to Rs.4,800 will increase the average number of passenger per flight to 212. Should Modern Airways lower its fare?
- Zed Tours and Travels, a tour operator, approaches Modern Airways to charter its jet aircraft twice each month, first to take Zed's international tourists from EXETOWN to WYETOWN and then bring the tourists back form WYETOWN to EXETOWN. If Modern Airways accepts the offer, it will be able to offer only 184 (208 minus 24) of its own flights each year. The terms of the charter are:
 - For each one –way flight Zed will pay Modern Rs.7,50,000 to charter the plane and to use its flight crew and ground service staff.
 - Zed will pay for fuel costs.
 - Zed will pay for all food costs.

On purely financial considerations, should Modern Airways accept the offer from Zed Tours and Travels? What other consideration should Modern Airways consider is deciding whether or not to charter its plane to Zed Tours and Travels?

Question 6

- Explain, briefly, the terms Expense Centre, Profit Centre and Investment Centre. (6 Marks)
- What is job evaluation? How is it related to merit rating? Discuss. (5 Marks)
- ACE Ltd., has an inventory of 5,000 units of a product left over from last years' production. This model is no longer in demand. It is possible to sell these at reduced prices through the normal distribution channels. The other alternative is to ask someone to take them on "as is where is" basis. The latter alternative will cost the company Rs.5,000.

The company produced 2,40,000 units of the product last year, when the units costs were as under:

	Rs.	Rs.
Manufacturing Cost:		
Variable	6.00	
Fixed	1.00	7.00
Selling & Distribution Cost:		
Variable	3.00	
Fixed	1.50	4.50
Total cost		11.50
Selling price per unit		14.00

Required :

Should the company scrap the items or sell them at a reduced price? If you suggest the latter, what minimum price would you recommend? (8 Marks)