

PAPER 5 : COST ACCOUNTING & COST SYSTEMS
NOVEMBER 2000

Question No.1 is compulsory

Answer any **four** questions from the rest.

Working notes should form part of the answer.

Question 1

- (a) What is Target Costing and what are the stages to the methodology? **(4 Marks)**
- (b) What are the areas in which Activity based information is used for decision making? **(4 Marks)**
- (c) B Ltd., is a company that has, in stock, materials of type XY that costs Rs.75,000, but that are now obsolete and have a scrap value of only Rs.21,000. Other than selling the material for scrap, there are only two alternative uses for them. **(16 Marks)**

Alternatively 1 –Converting the obsolete materials into a specialized product, which would require the following additional work and materials:

Material A	600 units
Material B	1,000 units
Direct Labour	
5,000 hours unskilled	
5,000 hours semi-skilled	
5,000 hours highly skilled	
Extra selling and delivery expenses	Rs.27,000
Extra advertising	Rs.18,000

The conversion would produce 900 units of saleable product and these could be sold for Rs.300 per unit.

Material A is already in stock and is widely used within the firm. Although present stocks, together with orders already planned, will be sufficient to facilitate normal activity and extra material used by adopting this alternative will necessitate such materials being replaced immediately. Material B is also in stock, but it is unlikely that any additional supplies can be obtained for some considerable time, because of an industrial dispute. At the present time material B is normally used in the production of product Z, which sells at Rs.390 per unit and incurs total variable cost (excluding Material B) of Rs.210 per unit. Each unit of product Z uses four units of material B. The details of Materials A and B are as follows:

	Material AB (Rs.)	Material B (Rs.)
Acquisition cost at the time of purchase	100 per unit	Rs.10 per unit
Net realizable value	85 per unit	Rs.18 per unit
Replacement cost	90 per unit	---

Alternative 2 :Adopting the obsolete materials for use as a substitute for a sub assembly that is regularly used within the firm. Details of the extra work and materials required are as follows:

Material C	1,000 units
Direct labour:	
4,000 hours unskilled	
1,000 hours semi-skilled	
4,000 hours highly skilled	

1,200 units of the sub-assembly are regularly used per quarter at a cost of Rs.900 per unit. The adaptation of material XY would reduce the quantity of the sub-assembly purchased from outside the firm to 900 units for the next quarter only. However, since the volume purchased would be reduced, some discount would be lost and the price of those purchased from outside would increase to Rs.1,050 per unit for that quarter.

Material C is not available externally though 1,000 units required would be available from stocks, it would be produced as extra production. The standard cost per unit of Material C would be as follows:

	Rs.
Direct labour : 6 hours unskilled labour	18
Raw materials	13

Variable overhead : 6 hours at Re.1	6
Fixed overhead : 6 hours at Re.	<u>18</u>
	<u>55</u>

The wage rates and overhead recovery rates for B Ltd., are:

Variable overhead	Re.1 per direct labour hour
Fixed overhead	Rs.3 per direct labour hour
Unskilled labour	Rs.3 per direct labour hour
Semi-skilled labour	Rs.4 per direct labour hour
Highly skilled labour	Rs.5 per direct labour hour

The unskilled labour is employed on a casual basis and sufficient labour can be acquired to exactly meet the production requirements. Semi-skilled labour is part of the permanent labour force, but the company has temporary excess supply of this type of labour at the present time. Highly skilled labour is in short supply and cannot be increased significantly in the short term, this labour is presently engaged in meeting the demand for product L, which requires 4 hours of highly skilled labour. The contribution from the sale of one unit of product L is Rs.24.

Given the above information, you are required to present cost information advising whether the stocks of Materials XY should be sold, converted into a specialized product (Alternative 1) or adopted for use as a substitute for a sub-assembly (Alternative 2)

Question 2

(a) What do you mean by philosophy of continuous process improvement ? What are its challenges?

(6 Marks)

(b) P.W. Perfume Company manufactures various qualities of perfumes and colognes. One popular line of colognes includes three products that result from a joint production process. Below are data form the most recent month of production:

Product	Sales price	Quantity	Joint cost	Cost After Split Off	Total cost
Evergreen	Rs.40	10,000	Rs.28	Rs.20	Rs.48
Morning flower	Rs.100	6,000	Rs.28	Rs.40	Rs.68
Evening flower	Rs.150	4,000	Rs.28	Rs.50	Rs.78

As the Controller, you are called into the President's Office with the Director of Marketing. The President says, "I don't understand your product cost report. Either, we are selling our largest volume product at a loss or the product cost data are all wrong. Now what is it?".

Required :

- Respond to the President's question.
- Another Company has just introduced a product that competes directly with Morning Flower. To compete successfully with the other company's product, the price of morning flower cologne must be reduced to Rs.60. Should the company do so and sell below cost?
- If P.W. Perfume Company has a policy of maintaining a gross margin of 20 per cent on sales, what would your answer be in response to the price reduction in part (ii)?
- What is the minimum price for which Morning Flower can sell and still meet the 20 per cent product gross margin for the group of products?

Question 3

(a) What will be the marketable transfer pricing procedure regarding the goods transferred under the following conditions (each condition is independent of the other)? **(3 Marks)**

- When divisions are not captives of internal divisions and the divisions are free to do business both internally and externally and when there are reasonably competitive external markets for the transferred products.

- ii. If the external market for the transferred good is not reasonably competitive.
- (b) Discuss the potential for maximization of income by a multinational through the use of transfer pricing mechanism. **(3Marks)**
- (c) City Instrument Company (CIC) consists of the Semi-conductor Division and the Mini-computer Division, each of which operates as an independent profit centre. Semi – conductor Division employs craftsmen, who produce two different electronic components, the new-high performance Super-chip and an order product called Okay-chip. These two products have the following cost characteristics:

(13 Marks)

	Super – chip		Okay - chip	
Material	Parts	Rs.20	Parts	Rs.10
Labour	2 hours × Rs.140	280	½ hour × Rs.140	70

Annual Overhead in Semi-conductor Division is Rs.40,00,000 all fixed. Owing to high skill level necessary for the craftsmen, the semi-conductor Division's capacity is set at 50,000 hours per year.

To date, only one customer has developed a product utilizing super –chip, and this customer orders a maximum of 15,000 super – chips per year at a price of Rs.600 per chip. If CIC cannot meet his entire demand, the customer curtails his own production. The rest of the semi-conductor's capacity is devoted to Okay-chips, for which there is unlimited demand at Rs.120 per chip.

The mini-computer division produces only one product, a process control unit, which requires a complex circuit board imported at a price of Rs.600. The control unit's costs are:

	Control unit	
Material	Circuit board	Rs.600
	Other parts	80
Labour	5 hours at Rs.100	500

The mini-computer division is composed of only a small assembly plant and all overhead is fixed at a total of Rs.8,00,000 per year. The current market price for the control unit is Rs.1,400 per unit.

A joint research project has just revealed that with minor modifications, a single super-chip could be substituted for the circuit board currently used by the mini – computer division. The modification would require an extra one hour of labour by mini-computer's staff, for a total of 6 hours per control unit. Mini-computer has therefore asked semi-conductor division to declare a transfer price at which semi-conductor division would sell super-chip internally.

Required :

- (i) Mini—computer expects to sell 5,000 control units this year. From the overall view point of CIC, how many super-chips should be transferred to Mini-computer Division to replace circuit boards?
- (ii) If the demand for the control unit is sure to be 5,000 units, but its price is uncertain, what should be the transfer price of super-chip to ensure proper decisions? (All other data unchanged).
- (iii) If demand for the control unit rises to 12,000 units at a price of Rs.1,400 per unit, how many of 12,000 units should be built using super-chip? (All other data unchanged)

Question 4

- (a) "Standard costing variances centre around comparison of Actual Performance with the standard and the standards or plans are normally based on the environment anticipated when the targets are set and if the current environment is different from that anticipated, such analysis cannot measure managerial performance." Comment on the statement and how will you deal with the situation with reference to material, labour and sale variances. **(6 Marks)**
- (b) F Manufacturing Ltd., uses the three variances method to analyze the manufacturing overhead variances. Manufacturing overhead variances for the fiscal year just ended were computed as follows: **(13 Marks)**

Spending	Rs.86,000	Adverse
Efficiency	Rs.36,000	Favourable
Volume	Rs.80,000	Favourable

The manufacturing overhead application rate for the year was Rs.160 per machine hours of which Rs.60 per machine hour was the variable component. The year end balance in the Manufacturing Overhead Control Account was Rs.16,50,000 and the standard machine hour for the year were 11,300.

From the above data compute:

- (i) Budgeted Machine Hours
- (ii) Actual Machine Hours.
- (iii) Applied Manufacturing Overhead
- (iv) Total Amount of Fixed Overheads Cost.

Question 5

- (a) "In job order costing, the costs of specific normal spoilage are charged to specific jobs." Do you agree? Explain. **(3 Marks)**
- (b) Describe two pricing practices in which non-cost reasons are important, when setting prices. **(3 Marks)**
- (c) What is bench marketing technique so far as products and operations are concerned? Can you describe the bench marking process? **(4 Marks)**
- (d) M Company's Central Service Department is evaluating new copying machines to replace the firm's current copier, which is worn out. The analysis of alternative machines has been narrowed to three and the estimated costs of operating them are shown below:

	Cost per 100 copies		
	Machine A	Machine B	Machine C
	Rs.	Rs.	Rs.
Material cost	60	40	20
Labour cost	80	30	20
Annual lease cost	30,000	58,000	1,00,000

Required :

- (i) Compute the cost indifference points for the three alternatives.
- (ii) What do the cost indifference points suggest as a course of action in this regard?
- (iii) If the management expects to need 87,000 copies next year, which copier would be most economical?

Question 6

- (a) Cost reduction efforts frequently focus on two key areas? What are they? **(4 Marks)**
- (b) Explain, how Cost Volume Profit (CVP) – based sensitivity analysis can help managers cope with uncertainty. **(4 Marks)**
- (c) A Co., Ltd., manufactures several different styles of jewellery cases. Management estimates that during the third quarter, the company will be operating at 80 per cent of the normal capacity. Because the company desires a higher utilization of plant capacity, the company will consider a special order. The company has received special order inquiries from two companies. The first order is from JCP Co. Ltd., which would like to market a jewellery case similarly to one of A Co., Ltd.'s jewellery cases. JCP jewellery case would be marketed under JCP's own label. JCP Co. Ltd., has offered A Co. Ltd., Rs.57.50 per jewellery case for 20,000 cases to be shipped by the last date of the quarter. The cost data for A Co. Ltd., jewellery case that would be similar to the specifications of JCP special order are as follows;

	Rs.
Regular selling price per unit	90
Costs per unit	
Raw materials	25
Direct labour 0.5 hour @ Rs.60	30
Overhead 0.5 machine hour @ 40	10
Total costs	<u>65</u>

According to the specifications provided by JCP Co., Ltd., the special order case requires less expensive raw materials. Consequently the raw materials will only cost Rs.22.50 per case. Management has estimated that the remaining costs, labour time and machine time will be the same as for A Co., Ltd., jewellery case.

The second special order was submitted by K Co., Ltd., for 7,500 jewellery cases at Rs.75.75 per case. These jewellery cases, like the JCP cases, would be marketed under K label and have to be shipped by the last date of the quarter. However, the K jewellery case is different from any jewellery case in the A Co., Ltd. line. The estimated per unit cost of this case are as follows:

	Rs.
Raw materials	32.50
Direct labour 0.5 hour @ Rs.60	30.00
Overhead 0.5 machine hour @ Rs.40	<u>20.00</u>
Total costs	<u>82.50</u>

In addition, A Co., Ltd., will incur Rs.15,000 in additional setup costs and will have to purchase a Rs.25,000 special device to manufacture these cases, this device will be discarded once the special order is completed.

The A Co. Ltd.'s manufacturing capabilities are limited to the total machine hours available. The plant capacity under normal operations is 90,000 machine hours per year or 7,500 machine hours per month. The budgeted fixed overhead costs are applied to production on the basis of machine hours at Rs.40 per hour.

A Co., Ltd., will have the entire quarter to work on the special orders. Management does not expect any repeat sales to be generated from either special order. Company practice precludes from subcontracting any portion of an order, when special orders are not expected to generate repeat sales.

Required: Should A Co., Ltd., accept either special order? Justify your answer and show the calculations.