

Test Series: September, 2013

MOCK TEST PAPER – 1

FINAL COURSE: GROUP – II

PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question Number 1 is compulsory.

*Attempt any **five** out of the remaining **six** questions.*

Working notes should form part of the answer.

Time Allowed – 3 Hours

Maximum Marks – 100

- 1 (a) Zee Ltd. has two divisions, P and Q. Division P makes and sells product P, which can be sold outside as well as be used by Q. P has a limitation on production capacity, that only 1,200 units can pass through its machining operations in one month. On an average, about 10% of the units that P produces are defective. It may be assumed that out of each lot that P supplies, 10% are defectives.

When P sells in the outside market, the defectives are not returned, since the transportation costs make it uneconomical for the customer. Instead, P's customers sell the defectives in the outside market at a discount.

But, when Q buys product P, it has to fix it into its product, which is reputed for its quality. Therefore, Q returns all the defective units to P. P can manually rework the defectives, incurring only variable labour cost and sell them outside at ₹ 150 and not having to incur any selling costs on reworked units. If P chooses not to rework, it can only scrap the material at ₹ 30 per unit. Q can buy product P from outside at ₹ 200 per unit, but has to incur ₹ 10 per unit as variable transport cost. Q can insist to its outside suppliers also that it will accept only good units.

P incurs a variable selling overhead only on units (other than reworked units) sold outside. The following figures are given for the month:

Variable cost of production – Dept. P (₹ /unit)	120
Variable selling overhead (₹ /u)	20
Selling price per unit in the outside market (₹ /u)	200
Current selling price to Q (₹ /u)	190
Additional variable labour cost of reworking defectives (₹ /u)	100
Selling price of reworked defectives (₹ /u)	150
Fixed costs for the month (₹)	36,000
Maximum demand from Q at present (no. of units)	630

The outside demand can be freely had upto 900units.

Given the demand and supply conditions, you are required to present appropriate calculations for the following:

- (i) Evaluation of the best strategy for P in the present condition.
- (ii) If Q can buy only upto 540 units and the outside demand is only 600 units, how much should P charge Q to maintain the same level of profit as in (i) above?

(12 Marks)

- (b) AB Ltd. makes and sells a labour-intensive product. Its labour force has a learning rate of 80%, applicable only to direct labour and not to variable overhead.

The cost per unit of the first product is as follows:

Direct materials	10,000
Direct labour	8,000 (@ ₹ 4 per hour)
Variable overhead	<u>2,000</u>
Total variable cost	<u>20,000</u>

AB Ltd. has received an order from P Ltd. for 4 units of the product. Another customer, Q Ltd. is also interested in purchasing 4 units of the product. AB Ltd. has the capacity to fulfill both the orders Q Ltd. presently purchases this product in the market for ₹ 17,200 and is willing to pay this price per unit of AB's product. But P Ltd. lets AB choose one of the following options:

- (i) A price of ₹ 16,500 per unit for the 4 units it proposes to take from AB. Or
- (ii) Supply P Ltd.'s idle labour force to AB, for only 4 units of production, with AB having to pay only ₹ 1 per labour hour to P Ltd.'s workers. P Ltd.'s workers will be withdrawn after the first 4 units are produced. In this case, AB need not use its labour for producing P Ltd.'s requirement. P Ltd. assures AB that its labour force also has a learning rate of 80%. In this option, P Ltd. offers to buy the product from AB at only ₹ 14,000 per unit.

P and Q shall not know of each other's offer.

If both orders came before any work started, what is the best option that AB may choose?

Present suitable calculations in favour of your argument.

(8 Marks)

2. (a) The CFO of your company has been given the following statement showing the results for a recent month:

Particulars	Master Budget	Actual
Units produced & sold	10,000	9,000
	₹	₹
Sales	8,00,000	7,00,000
Direct material	2,00,000	1,84,000

Direct Wages	3,00,000	2,62,000
Variable overhead	1,00,000	94,000
Fixed overhead	1,00,000	98,000
Total Cost	7,00,000	6,38,000
Net Surplus	1,00,000	62,000

The standard cost of the product is as follows:

Direct material (1 kg @ ₹ 20/kg) ₹ 20.00 per unit

Direct Wages (1 hour @ ₹ 30/hour) ₹ 30.00 per unit

Variable overhead (1 hour @ ₹ 10/hour) ₹ 10.00 per unit

Actual results for the month revealed that 9,800 kg. of material was used and 8,800 labour hours were recorded.

(i) Prepare a flexible budget for the month and compare with the actual results.

(6 Marks)

(ii) Calculate material volume and variable overhead efficiency variances.(2 Marks)

(b) What is disinvestments strategy? Highlight the main reasons for disinvestments.

(4 Marks)

(c) What is uniform costing? Why is it recommended?

(4 Marks)

3. (a) A cement company has three plants producing cements and four depots. The cost of transporting cement from different plants to the depots, production capacity of each plant and requirement at different depots is shown in the following cost-matrix table:

Plants	Depots				Production Capacity
	CA	CB	CC	CD	
CX	6	8	6	5	1,200
CY	4	4	8	4	1,600
CZ	3	7	2	8	1,200
Requirements	1,200	800	600	1,400	4,000

Determine a transportation schedule so that the cost is minimized. The cost in the cost matrix is given in thousand of rupees.

(6 Marks)

(b) Give an appropriate cost unit for each of the following service sectors:

(i) Hotel

(ii) School

(iii) Hospital

- (iv) Accounting firm
- (v) Transport
- (vi) Staff Canteen
- (vii) Machine maintenance
- (viii) Computer Department

(4 Marks)

- (c) Fox Ltd has Division A and Division B. The Division A produces Components which it sells to 'outside' customers and also transfers to the Division B. The Division B produces a product called the 'Zoom' which incorporates a Fox component in its design.

Details of the production and operating costs for the next year are forecasted to be as follows.

Division A's	Division B's
Annual fixed costs ₹ 15,00,000	Annual fixed costs ₹ 25,000
Variable cost per component ₹ 175	Variable cost per 'Zoom' ₹ 350, (excludes transfer costs)

Both Divisions have surplus capacity. Market analysis has indicated that the demand from 'outside' customers for Fox Ltd's products is as follows:

- (i) 4,500 components are sold at a unit selling price of ₹ 350; sales change by an average of 5 components for each ₹ 1 change in the selling price, per component;
- (ii) 500 'Zoom' are sold at a unit selling price of ₹ 1,100; sales change by an average of 125 'Zoom' for each ₹ 75 changes in the selling price per 'Zoom'. It is a established practice for the Division A to transfer components to the Division B at 'market selling price'.

You are required to calculate the, Unit selling price of a 'Zoom' that should be set in order to maximize Fox Ltd's profit. Selling price should also be exact to the nearest paisa. [Note: If $P = a - bQ$ then $MR = a - 2bQ$]

(6 Marks)

4. (a) Piston Ltd. makes three products, P, Q and R in Divisions P, Q and R respectively. The following information is given:

	P	Q	R	
Direct Materials (excluding material P for Divisions Q and R)	4	15	20	₹ /u
Direct Labour	2	3	4	₹ /u
Variable overhead	1	1	1	₹ /u

Selling price to outside customers	15	40	50	₹ /u
Existing Capacity	5,000	2,500	2,500	(No. of units)
Maximum External demand	3,750	5,000	4,000	(No. of units)
Additional fixed costs that would be incurred to install additional capacity	24,000	6,000	18,700	₹
Maximum Additional units that can be produced by additional capacity	5,000	1,250	2,250	(No. of units)

Q and R need material P as their input. Material P is available outside at ₹ 15 per unit. Division P supplies the material free from defects. Each unit of Q and R requires one unit of P as the input material.

If Q purchases from outside, it has to pay ₹ 15 per unit. If Q purchases from P, it has to incur in addition to the transfer price, ₹ 2 per unit as variable cost to modify it.

Q has sufficient idle capacity to inspect its inputs without additional costs.

If R gets material from P, it can use it directly, but if it gets material from outside, which is at ₹ 15, it has to do one of the following:

(i) Inspect it at its own shop floor at ₹ 3 per unit

Or

(ii) Get the supplier to supply inspected products and pay the supplier ₹ 2 p. u. as inspection charges.

Or

(iii) P has enough idle labour, which it can lend to R to inspect at ₹ 1 p.u. even though R purchases from outside.

P has to fix a uniform transfer price for both Q and R. The transfer price will not be known to outsiders and is at the discretion of the Divisional Managers

What is the best strategy for each division and the company as a whole? (12 Marks)

(b) Explain the following in the context of a network: (4 Marks)

(i) Dependency Rule.

(ii) Dummy Activity.

5. (a) Formulate the dual for the following linear program:

Maximise: $50x_1 + 45x_2 + 20x_3 + 30x_4$

Subject to

$3x_1 + 2x_2 + 4x_3 + 2x_4 \leq 70$

$$5x_1 + 5x_2 + x_3 + 3x_4 \leq 60$$

$$5x_1 + 6x_2 + 3x_3 + x_4 \leq 25$$

$$x_1, x_2, x_3, x_4, \geq 0$$

(Only formulation is required. Please do not solve.)

(6 Marks)

(b) Prescribe the steps to be followed to solve an assignment problem. (5 Marks)

(c) Modern Ltd. is a manufacturer of a range of goods. The cost structure of its different products is as follows:

Particulars	Product KA	Product KB	Product KC	
Direct materials	50	40	40	₹ /u
Direct labour @ 10 ₹ /hour	30	40	50	₹ /u
Production overheads	30	40	50	₹ /u
Total Cost	110	120	140	₹ /u
Quantity produced	10,000	20,000	30,000	Units

Modern Ltd. was absorbing overheads on the basis of direct labour hours. A newly appointed management accountant has suggested that the company should introduce ABC system and has identified cost drivers and cost pools as follows:

Activity Cost Pool	Cost Driver	Associated Cost
Stores Receiving	Purchase Requisitions	2,96,000
Inspection	Number of Production runs	8,94,000
Dispatch	Orders Executed	2,10,000
Machine Setup	Number of setups	12,00,000

The following information is also supplied:

Details	Product KA	Product KB	Product KC
No. of Setups	360	390	450
No. of Orders Executed	180	270	300
No. of Production runs	750	1,050	1,200
No. of Purchase Requisitions	300	450	500

You are required to calculate activity based production cost of all the three products. (5 Marks)

6. (a) Pick-lock Ltd., a retail store buys computers from Champ Ltd. and sells them in retail. Champ Ltd. pays Pick-lock Ltd. a commission of 10% on the selling price at which Pick-lock Ltd. sells to the outside market. This commission is paid at the end of the month in which Pick-lock Ltd. submits a bill for the commission. Pick-lock Ltd. sells the computers to its customers at its store at ₹ 30,000 per piece. Champ Ltd. has a policy of not taking back computers once dispatched from its factory. Champ Ltd. sells a minimum of 100 computers to its customers.

Champ Ltd. charges prices to Pick-lock Ltd. as follows:

₹ 29,000 per unit, for order quantity 100 units to 140 units.

₹ 26,000 per unit, for the entire order, if the quantity is 141 to 200 units. Pick-lock Ltd. cannot order less than 100 or more than 200 units from Champ Ltd.

Due to the economic recession, Pick-lock Ltd. will be forced to offer as a free gift, a digital camera costing it ₹ 4,500 per piece, which is compatible with the computer. These cameras are sold by another Co., Photoshop Ltd. only in boxes, where each box contains 50 units. Pick-lock Ltd. can order the cameras only in boxes and these cameras cannot be sold without the computer.

In its own store, Pick-lock Ltd. can sell 110 units of the computer. At another far off location, Pick-lock Ltd. can sell upto 80 units of the computer (along with its free camera), provided it is willing to spend ₹ 5,000 per unit on shipping costs. In this market also, the selling price that each unit will fetch is ₹ 30,000 per unit.

You are required to:

- State what is Pick-lock Ltd's best strategy along with supporting calculations.
- Compute the break-even point in units, considering only the above costs.

(13 Marks)

- (b) What are the various formulae used in calculating budget ratios? (3 Marks)

7. Answer any four of the following questions:

- (a) Sikara Ltd. produces 4 products using 3 different machines. Machine capacity is limited to 3,000 hours for each machine. The following information is available for February, 2013:

Products	W	X	Y	Z
Contribution (Sales-direct material) ₹	1,500	1,200	1,000	600
Machine Hours Required/Unit :				
Machine 1	10	6	2	1
Machine 2	10	9	3	1.5

Machine 3	10	3	1	0.5
Estimated Demand (units)	200	200	200	200

From the above information you are required to identify the bottleneck activity and allocate the machine time. (4 Marks)

- (b) Explain the essential features of Life-cycle costing. (4 Marks)
- (c) Explain briefly the concepts of Opportunity costs and Relevant costs. (4 Marks)
- (d) A refreshment centre in a railway station has two counters - (i) self-service (opted by 60 % of the customers) and (ii) attended service (opted by 40 % of the customers). Both counters can serve one person at a time. The arrival rate of customers is given by the following probability distribution:

No. of arrivals	1	3	4	0	2
Probability	0.10	0.30	0.05	0.20	0.35

Formulate the associated interval of 2 digit random numbers for generating

- (i) the type of service and
- (ii) the arrival rate (4 Marks)
- (e) Six Sigma (4 Marks)