

Test Series: November, 2021

MOCK TEST PAPER – 1

FINAL COURSE: GROUP – II

PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question No. 1 is compulsory

Answer any **five** questions from the remaining **six** questions

Time Allowed – 3 Hours

Maximum Marks – 100

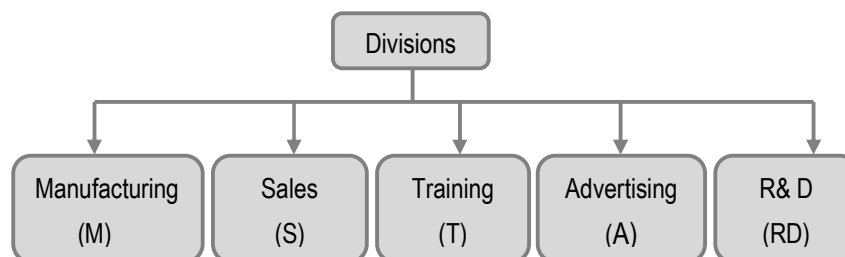
1. (a) Canterbury Ltd. makes two products C_1 and C_2 , whose respective fixed costs are F_1 and F_2 . You are given that the unit contribution of C_2 is one-fifth less than the unit contribution of C_1 , that the total of F_1 and F_2 is ₹ 1,50,000, that the BEP of C_1 is 1,800 units (for BEP of C_1 F_2 is not considered) and that 3,000 units is the indifference point between C_1 and C_2 (i.e. C_1 and C_2 make equal profits at 3,000 unit volume, considering their respective fixed costs). There is no inventory buildup as whatever is produced is sold.

Required

Find out the values F_1 and F_2 and units contributions of C_1 and C_2 . (5 Marks)

- (b) Datacom Limited is a state-owned large public company in the telecommunications sector. One of its main planning and control tools is the preparation and use of traditional annual budgets.

Its divisional structure is as under:



Division T, A and RD incur substantial amount on discretionary expenses.

Required

Identify the possibilities of introducing a Zero Based Budgeting system for Division T, A and RD. (5 Marks)

- (c) N & S Co. (NSC) is a multiple product manufacturer. NSC produces the unit and all overheads are associated with the delivery of units to its customer.

| Particulars | Budget | Actual |
|-----------------------------|--------|--------|
| Overheads (₹) | 4,000 | 3,900 |
| Output (units) | 2,000 | 2,100 |
| Customer Deliveries (no.'s) | 20 | 19 |

Required

Calculate Efficiency Variance and Expenditure Variance by adopting ABC approach.

(5 Marks)

(d) Explain following statement

- Assignment problem is special case of transportation problem; it can also be solved by transportation methods. (5 Marks)

2. (a) Given below is an iteration in a simplex table for a maximization objective linear programming product mix problem for products x, y and z. Each of these products is processed in three machines KA-07, KB-27 & KC-49 and each machine has limited available hours.

| $C_j \rightarrow$ | | | 30 | 40 | 20 | 0 | 0 | 0 |
|-------------------|--------------------|-------------------------------------|----|----|--------|-------|--------|-------|
| C_B | Basic Variable (B) | Value of Basic Variables $b (=X_B)$ | x | y | z | s_1 | s_2 | s_3 |
| 30 | x | 250 | 1 | 0 | -26/16 | 10/16 | -12/16 | 0 |
| 40 | y | 625 | 0 | 1 | 31/16 | -7/16 | 10/16 | 0 |
| 0 | s_3 | 125 | 0 | 0 | 11/16 | -3/16 | 1/8 | 1 |

s_1 , s_2 and s_3 are slack variables for machine KA-07, KB-27 and KC-49 respectively.

Answer the following questions, giving reasons in brief:

- (i) Is this solution 'Feasible'?
- (ii) Is this solution 'Degenerate'?
- (iii) Which of these machines is being used to the full capacity when producing according to this solution?
- (iv) How much would you be prepared to pay for another hour of capacity each on machine KA-07, machine KB-27, and machine KC-49?
- (v) If the company wishes to expand the production capacity, which of the three resources should be given priority?
- (vi) What happens if 16 machine hours are lost due to some mechanical problem in machine KB-27?
- (vii) A customer would like to have one unit of product z and is willing to pay higher price for z in order to get it. How much should the price be increased so that the company's profit remains unchanged?

- (viii) A new product is proposed to be introduced which would require processing time of 4 hours on machine KA-07, 2 hours on machine KB-27 and 4 hours on machine KC-49. It would yield a profit of ₹ 12 per unit. Do you think it is advisable to introduce this product? (8 Marks)
- (b) Oxford Health Care Co. (OHCC) is a pharmaceutical firm, operating its entire business through its four customers Qx₁, Qx₂, Qx₃, and Qx₄. Qx₁ and Qx₂ are small pharmaceutical stores while Qx₃ and Qx₄ are large discount stores with attached pharmacies. OHCC uses discount pricing strategy and prices its products at variable cost plus 25%.

| Item | Small Pharmaceuticals | | Large Pharmaceuticals | | Activity Rate |
|---------------------------------|-----------------------|-----------------|-----------------------|-----------------|---------------|
| | Qx ₁ | Qx ₂ | Qx ₃ | Qx ₄ | |
| Number of Orders | 4 | 9 | 6 | 3 | ₹750 |
| Order Size (₹) | 40,000 | 20,000 | 4,25,000 | 4,00,000 | n/a |
| Average Discount (%) | 4.50 | 9.50 | 17.50 | 11.50 | n/a |
| Regular Deliveries | 4 | 9 | 6 | 3 | ₹375 |
| Expedited Deliveries | 2 | 0 | 2 | 0 | ₹1,250 |
| General Administration Cost (₹) | 20,250 | | 48,375 | | |

Required

- (i) Prepare a 'Customer Profitability Statement' that shows the profit from each customer and each customer channel.
- (ii) Recommend some points to improve OHCC's profit. (8 Marks)
3. (a) P & G International Ltd. (PGIL) has developed a new product 'α³' which is about to be launched into the market. Company has spent ₹ 30,00,000 on R&D of product 'α³'. It has also bought a machine to produce the product 'α³' costing ₹ 11,25,000 with a capacity of producing 1,100 units per week. Machine has no residual value.

The company has decided to charge price that will change with the cumulative numbers of units sold:

| Cumulative Sales (units) | Selling Price ₹ per unit |
|--------------------------|--------------------------|
| 0 to 2,200 | 750 |
| 2,201 to 7,700 | 600 |
| 7,701 to 15,950 | 525 |
| 15,951 to 59,950 | 450 |

| | |
|------------------|-----|
| 59,951 and above | 300 |
|------------------|-----|

Based on these selling prices, it is expected that sales demand will be as shown below:

| Weeks | Sales Demand per week (units) |
|------------|-------------------------------|
| 1-10 | 220 |
| 11-20 | 550 |
| 21-30 | 825 |
| 31-70 | 1,100 |
| 71-80 | 880 |
| 81-90 | 660 |
| 91-100 | 440 |
| 101-110 | 220 |
| Thereafter | NIL |

Unit variable costs are expected to be as follows:

| | ₹ per unit |
|-------------------|------------|
| First 2,200 units | 375 |
| Next 13,750 units | 300 |
| Next 22,000 units | 225 |
| Next 22,000 units | 188 |
| Thereafter | 225 |

PGIL uses just-in-time production system. Following is the total contribution statement of the product 'α³' for its Introduction and Growth phase:

| | Introduction | Growth | |
|-----------------------------------|--------------|-----------|-----------|
| Weeks | 1 - 10 | 11 - 30 | |
| Number of units Produced and Sold | 2,200 | 5,500 | 8,250 |
| Selling Price per unit (₹) | 750 | 600 | 525 |
| Variable Cost per unit (₹) | 375 | 300 | 300 |
| Contribution per unit (₹) | 375 | 300 | 225 |
| Total Contribution (₹) | 8,25,000 | 16,50,000 | 18,56,250 |

Required

- (i) Prepare the total contribution statement for each of the remaining two phases of the product's life cycle.
- (ii) Discuss Pricing Strategy of the product 'α³'.
- (iii) Find possible reasons for the changes in cost during the life cycle of the product 'α³'.

Note: Ignore the time value of money.

(11 Marks)

- (b) Hindustan Bikes Ltd. (HBL) formerly known as HELCO is an Indian multinational company. It's headquarter is located in Bengaluru, India. It has been founded in the year 1990 as a manufacturer of locomotives. The company is presently listed locally as well as in international stock market. HBL's parent company is Hindustan Group. The management of HBL recognizes the need to establish a culture at the company so that –

"Do the right things, right the first time, every time".

Management has provide you following actual information for the most recent month of the current year:

| Cost Data | ₹ |
|------------------------------|----------------|
| Customer Support Centre Cost | 35 per hr. |
| Equipment Testing Cost | 18 per hr. |
| Warranty Repair Cost | 1,560 per bike |
| Manufacturing Rework Cost | 228 per bike |

Volume and Activity Data

| | |
|--|-------------|
| Bikes Requiring Manufacturing Rework | 3,200 bikes |
| Bikes Requiring Warranty Repair | 2,600 bikes |
| Production Line Equipment Testing Time | 1,600 hrs. |
| Customer Support Centre Time | 2,000 hrs. |

Additional information

HBL carried out a quality review of its existing suppliers to enhance quality levels during the month at a cost of ₹ 1,25,000. Due to the quality issues in the month, the bike production line experienced unproductive 'down time' which cost ₹ 7,70,000.

Required

Prepare a statement showing 'Total Quality Cost'.

(5 Marks)

4. (a) The following table gives the activities in a construction project and the time durations with associated probability of each activity:

| Activity | Predecessors | Time (in Days) | Probability |
|----------|--------------|----------------|-------------|
| A | --- | 6 | 0.50 |
| | | 8 | 0.50 |
| B | --- | 4 | 0.30 |
| | | 5 | 0.20 |
| | | 6 | 0.50 |
| C | A | 8 | 0.50 |
| | | 16 | 0.50 |
| D | A, B | 8 | 0.30 |
| | | 10 | 0.70 |
| E | C, D | 2 | 0.20 |
| | | 4 | 0.80 |

To simulate the project, use the following random numbers taking the first five random numbers digits (representing the five activities) for each trial and so on:

11, 16, 23, 72, 94; 83, 83, 02, 97, 99; 83, 10, 93, 4, 33; 53, 49, 94, 37, 7

Required

Determine the 'Critical Path' and the 'Project Duration' for each trial. (8 Marks)

- (b) A Hotel having 50 single rooms is having 80% occupancy in normal season (8 months) and 50% in off- season (4 months) in a year (take 30 days month).

Annual Fixed Expenses (₹ Lakh)

Salary of the Staff (excluding Room Attendant).....7.50

Repair & Maintenance.....2.60

Depreciation on Building & Furniture.....2.40

Other Fixed Expenses like Dusting, Sweeping etc.....3.25

Total 15.75

Variable Expenses (per Guest per Day)

Linen, Laundry & Security Support..... ₹ 30.00

Electricity & Other Facilities..... ₹ 20.00

Misc Expenses like Attendant etc..... ₹ 25.00

Management wishes to make a Margin of 25% of Total Cost.

Required

- (i) Calculate the Tariff Rate per Room.
 - (ii) Calculate the Break Even Occupancy in Normal Season assuming 50% Occupancy is Off-Season.
 - (iii) Management is proposing 10% cut in Tariff to improve Occupancy at 100% and 70% in Normal Season and Off-Season respectively. Give your views on it.
 - (iv) What is the minimum rise in Occupancy % to take care of risk of fall in Profit due to Tariff-Cut? (8 Marks)
5. (a) 'EXE' Ltd. manufactures a product called 'HN-2'. The company is organized into two divisions, viz., Division 'KXA' and Division 'KXB'. Division 'KXA' manufactures 'HN-2' and Division 'KXB', which manufactures the containers, packs 'HN-2' in the containers and stores them by using a special protective material called 'P-6'. The details of the expenses incurred by Division 'KXB' during 2020 are as under:

| | (₹) |
|--|----------|
| Direct Materials including 'P-6' | 5,25,000 |
| Direct Labour | 3,75,000 |
| Supervision | 60,000 |
| Maintenance of Machine | 27,000 |
| Rent of a part of the Warehouse used | 33,750 |
| Depreciation of Machine | 1,12,500 |
| Miscellaneous Overheads | 1,18,125 |
| Administration Overheads apportioned to the Division | 1,80,000 |

'WYE' Ltd. a company engaged in warehousing of a variety of a products, approached 'EXE' Ltd. to undertake to manufacture the containers required on contract basis for a period of four years for ₹ 9,37,500 per annum and/or store the packed product for a further sum of ₹ 1,87,500 per annum.

Division 'KXB' uses a machine for the manufacture of containers This machine was installed four years ago at a capital cost of ₹ 9,00,000 and it has a useful life of four more years. It can be currently sold at ₹ 1,87,500.

Division 'KXB' purchased 'P-6' worth ₹ 7,50,000 during the last year. Out of this, one-fifth was used during the last year and the cost thereof is included in the material cost of 2020. The original purchase price of 'P-6' was ₹ 3,750 per tonne but, if sold now, the stock of 'P-6' would fetch only ₹ 3,000 per tonne. Its current replacement cost is ₹ 4,500 per tonne.

Division 'KXB' hired a warehouse for storage of the product for ₹ 67,500 per annum. It uses only half of the space and has taken only half the amount of rent into account. The remaining space of the warehouse is idle.

Required

Evaluate the following three proposals on a four-year term basis and state recommendations.

- (i) If the contract for manufacture of the containers and the storage of the product, 'HN-2' is given to 'WYE' Ltd. Division 'KXB' will be close down. In that event the supervisory staff will be transferred to another department and there will be 100% saving in direct labour cost.
 - (ii) If 'EXE' Ltd. continues to store the product 'HN-2' and leaves the manufacture of the containers to 'WYE' Ltd., The machine in Division 'KXB' will not be required and the storage space requirements cannot be dispensed with. The supervisory staff will be required to be retained in Division 'KXB' and only 10% of all material will be used. The saving on account of labour retrenchment will come to ₹ 18,750 per annum. The miscellaneous overheads will be reduced by 80%.
 - (iii) If 'EXE' Ltd. continues to manufacture the containers and leaves the storage of 'HN-2' to 'WYE' Ltd. Division 'KXB' will retain the machine and the warehouse space for use. The supervisory staff will also be retained and 90% of all materials will be required. The labour force will continue and the miscellaneous overheads will be reduced by 20%. (12 Marks)
- (b) Z Security Ltd. (ZSL) is a leading IT security solutions and ISO 9001 certified company. The solutions are well integrated systems that simplify IT security management across the length and depth of devices and on multiple platforms. ZSL has recently developed an Antivirus Software and company expects to have life cycle of less than one year. It was decided that it would be appropriate to adopt a market skimming pricing policy for the launch of the product. This Software is currently in the Introduction stage of its life cycle and is generating significant unit profits.

Required

Explain, with reasons, the changes, if any, to the unit selling price that could occur when the Software moves from the Introduction stage to Growth stage of its life cycle.

Also suggest necessary strategies at this stage. (4 Marks)

6. (a) Turn Wood Ltd. has two divisions Division 'TXR' and Division 'TQR'. Both divisions are independent. Each division serves a different market in the furniture industry.

Division 'TXR' manufactures furniture that is used by the canteens/ coffee bars. The division plans to introduce cushioned seat for the counter chairs. A cushioned seat currently made by the Division 'TQR' for use on its stylish stool could be modified for use on the new counter chair. Division 'TQR' can make the necessary modifications to the cushioned seat easily.

The raw materials used in Division 'TXR' seat are slightly different and should cost about 20 percent more than those used in Division 'TQR' stylish stool. However, the labour time should be the same because the seat fabrication operation is basically the same.

Division 'TQR' is operating at full capacity. By making the cushion seats for Division 'TXR', Division 'TQR' have to cut its production of stylish stools. However, Division 'TQR' can increase its production of normal stools. The labour time freed by not having to fabricate the frame or assemble the stylish stool can be shifted to the frame fabrication and assembly of the normal stool. Division 'TQR' can switch its labour force between these two models of stools without any loss of efficiency. Labour hours cannot be increase. Division 'TQR' has excess demand for both products. Following are Division 'TQR's standard costs for the two stools and a schedule of Division 'TQR's manufacturing overhead.

'TQR' DIVISION

Standard Selling Price and Cost

| | Stylish Stool | | Normal Stool | |
|--------------------------|---------------|--------|--------------|--------|
| | (₹) | (₹) | (₹) | (₹) |
| Selling Price | | 225.00 | | 160.00 |
| Less: Raw Materials | | | | |
| Framing | 32.60 | | 39.04 | |
| Cushioned Seat | | | | |
| - Padding | 9.60 | | --- | |
| - Vinyl | 16.00 | | --- | |
| Moulded Seat (Purchased) | -- | 58.20 | 24.00 | 63.04 |
| Less: Direct Labour | | | | |
| Frame Fabrication | | | | |
| - (0.5 × ₹ 30.00/DLH#) | 15.00 | | --- | |
| - (0.5 × ₹ 30.00/DLH) | --- | | 15.00 | |
| Cushion Fabrication | | | | |

| | | | | |
|------------------------------|-------|-------|------|-------|
| - (0.5 × ₹ 30.00/DLH) | 15.00 | | --- | |
| Assembly* | | | | |
| - (0.5 × ₹ 30.00/DLH) | 15.00 | | --- | |
| - (0.3 × ₹ 30.00/DLH) | -- | 45.00 | 9.00 | 24.00 |
| Less: Manufacturing Overhead | | | | |
| - (1.5 DLH × ₹ 51.20/DLH) | | 76.80 | | --- |
| - (0.8 DLH × ₹ 51.20/DLH) | | --- | | 40.96 |
| Profit / (Loss) | | 45.00 | | 32.00 |

(*)Attaching seats to frames and attaching rubber feet

(#) DLH refers to Direct Labour Hour

'TQR' DIVISION

Manufacturing Overhead Budget

| Overhead Item | (₹) |
|---|-------------|
| Indirect Material (Variable - at Current Market Prices) | 16,80,000 |
| Indirect Labour (Variable) | 15,00,000 |
| Supervision (Non Variable) | 10,00,000 |
| Power (Use Varies with Activity; Rates are Fixed) | 7,20,000 |
| Heat and Light (Non Variable - Same Regardless of Production) | 5,60,000 |
| Miscellaneous Overheads (Non Variable - Any Change in Amounts or Rates is Independent of Production) | 8,00,000 |
| Depreciation (Fixed) | 68,00,000 |
| Employee Benefits (20% of Supervision, Direct and Indirect Labour) | 23,00,000 |
| Total Overhead | 1,53,60,000 |
| Capacity in DLH | 3,00,000 |
| Overhead Rate / DLH | ₹ 51.20 |

Required

Assume that you are the corporate controller. What transfer price would you recommend for a 200 unit lot of seats?
(12 Marks)

- (b) Tri-max Ltd. has produced the following figures relating to production for the week ended 27th Jan

| | Production (in units) | |
|---------------------------------|-----------------------|--------|
| | Budgeted | Actual |
| Product A..... | 200 | 200 |
| Product B..... | 200 | 150 |
| Product C..... | 50 | 70 |
| Standard production times were: | | |
| Standard hours per unit | | |
| Product A..... | 10 | |
| Product B..... | 5 | |
| Product C..... | 2 | |

During the week, 2,800 hours were worked on production.

Required

Calculate the production volume ratio and efficiency ratio for the week ended 27st Jan. (4 Marks)

7. Answer any **four** of the following questions:

- (a) Well Fit Ltd. is engaged in business of manufacturing branded readymade garments. It has a single manufacturing facility at harbour city. Raw material is supplied by various suppliers.

Majority of its revenue comes from export to Euro Zone and US. To strengthen its position further in the Global Market, it is planning to enhance quality and provide assurance through long term warranty.

For the coming years company has set objective to reduce the quality costs in each of the primary activities in its value chain.

Required

State the primary activities as per Porter's Value Chain Analysis in the value chain of Well Fit Ltd with brief description. (4 Marks)

- (b) How do you know whether an alternative solution exists for a transportation problem? (4 Marks)
- (c) Explain the learning curve ratio with an example. (4 Marks)
- (d) Write a note on Six Sigma. (4 Marks)

(e) What are the steps in simulation?

(4 Marks)