Intermediate Examinations Autumn 2007

September 07, 2007
COST ACCOUNTING
(MARKS 100)
Module D
(3 hours)
Q. 1 Binary Limited manufactures three joint products viz. Aay, Bee and Cee in one common process. Following this process, product Aay and Bee are sold immediately while product Cee is subjected to further processing. Following information is available for the period ended June 30, 2007:
(i)

|  | Aay | Bee | Cee |
| :--- | :---: | :---: | :---: |
| Opening stock in kg | Nil | Nil | Nil |
| Production in kg | 335,000 | 295,000 | 134,000 |
| Sales in kg | 285,000 | 212,000 | - |
| Sales price per kg (Rs.) | 30.85 | 40.38 | - |

(ii) Total costs of production were Rs $17,915,800$.
(iii) $128,000 \mathrm{~kg}$ of Cee were further processed during the period and converted into $96,000 \mathrm{~kg}$ of Zee. The additional cost of further processing were as follows:

| Direct labour | Rs. 558,500 |
| :--- | :---: |
| Production overhead | Rs. 244,700 |

(iv) $94,000 \mathrm{~kg}$ of Zee was sold during the period, with total revenue of Rs. $3,003,300$. Opening stock of Zee was $8,000 \mathrm{~kg}$, valued at Rs 172,800 . FIFO method is used for pricing transfers of Zee to cost of sales.
(v) $8,000 \mathrm{~kg}$ of a bye-product Vee was also produced during further processing and sold @ Rs. 10 per kg. Sales proceeds of bye-product are adjusted against production cost of product Zee.
(vi) The cost of production is apportioned among Aay, Bee and Cee on the basis of weight of output.
(vii) Selling and administration costs of Rs. 2,500,000 were incurred during the period. These are allocated to all the main products based on sales value.

## Required:

Prepare a profit and loss account for the period, identifying separately the profitability of each of the three main products.
Q. 2 Hexa (Private) Limited is engaged in the supply of a specialized tool used in the automobile industry. Presently, the company is incurring high cost on ordering and storage of inventory. The procurement department has tried different order levels but has not been able to satisfy the management.

The Chief Financial Officer has asked you to evaluate the current situation. He has provided you the following information:
(i) The annual usage of inventory is approximately 8,000 cartons. The supplier does not accept orders of less than 800 cartons. The cost of each carton is Rs. 2,186.
(ii) The average cost of placing an order is estimated at Rs 14,000 and presently two orders are placed in each quarter.
(iii) The sales are made on a regular basis and on average, half of the quantity ordered is held in inventory. The cost of storage is considered to be $16 \%$ of the value of inventory.

## Required:

(a) Determine the following:

- Economic Order Quantity (EOQ).
- Number of orders to be placed, based on EOQ.
(b) Compute the ordering costs and storage costs in the existing situation. How much cost can be saved if quantity ordered is equal to EOQ as determined in (a) above.
Q. 3 Octa Limited manufactures a single product under the brand name "Pak Pure". The latest estimates related to the current year are as follows:

| Production and sales (units) | 25,000 |
| :--- | ---: |
| Cost per unit |  |
| Direct material (Rs.) | 40 |
| Direct labour (Rs.) | 20 |
| Fixed overhead (Rs.) | 15 |
| Variable overhead (Rs.) | 5 |
| Total cost per unit (Rs.) | 80 |

During the next year, the costs per unit are expected to increase as under:

|  | \% |
| :--- | ---: |
| Direct material | 20 |
| Direct labour | 10 |
| Fixed overhead | 5 |
| Variable overhead | 20 |

It is the policy of the company to set the selling price at the time of budget preparation at cost plus $50 \%$. The Sales Manager is worried about the implications of this policy. According to his estimate, demand for the product will vary with price as follows:

| Price (Rs.) | 100 | 105 | 110 | 115 |
| :--- | ---: | ---: | ---: | ---: |
| Demand (thousand units) | 25 | 23 | 21 | 20 |

The Production Manager has informed that a different type of raw material is also available in the market at a cost of Rs. 42.30 per unit. He believes that the new material will give an acceptable quality of output. However, as a result of using cheaper material, a process of inspection will have to be introduced which will cost Rs. 30,000 per annum. The chances of rejection are $2 \%$ and $3 \%$ for raw material and finished goods respectively.

## Required:

(a) Determine the price which will maximize the profit.
(b) Decide whether the company should continue to use the present type of raw material or switch over to the new one.

## (Round off all the figures to two decimal places).

Q. 4 Nooruddin Ahmed is planning to start a new business. He will invest his saving amounting to Rs. 3,500,000 and intends to make borrowing arrangements with a bank to meet the working capital requirements. His planning is based on the following estimates:
(i) He has identified a factory cum office premises at a monthly rent of Rs. 80,000 which will be payable in advance at the beginning of each month. However, he needs to give three months rent as security deposit to the landlord before occupying the space. Other fixed overheads excluding depreciation are estimated at Rs. 120,000 per month which will be paid in the same month.
(ii) He has signed a contract for supply of machinery costing Rs. 1,800,000. The payment will be made at the time of delivery in January 2008. This machinery has an estimated life of five years with no residual value.
(iii) Production will start in January 2008 and $60 \%$ of the next month's sales will be manufactured in January 2008. Thereafter, the production will consist of $40 \%$ of the current month's sales and $60 \%$ of the next month's sales.
(iv) He estimates the following sales for the first five months:

| Month | Unit | Rupees |
| :--- | :---: | :---: |
| January | - | - |
| February | 2,400 | $3,120,000$ |
| March | 3,200 | $4,160,000$ |
| April | 4,000 | $5,200,000$ |
| May | 4,800 | $6,240,000$ |

(v) Sales will be made on credit basis. A 5\% cash discount will be allowed for payments in the current month. It is estimated that $35 \%$ of each month's sales will qualify for this discount. Balance $65 \%$ will be recovered in the next month.
(vi) Variable production cost per unit has been estimated as:

|  | Rupees |
| :--- | :---: |
| Direct material | 600 |
| Direct labour | 200 |
| Variable overhead | 100 |
| Total variable cost per unit | 900 |

(vii) Raw materials costing Rs. 1,600,000 will be purchased in January 2008 in cash. Thereafter, he intends to follow a policy of purchasing $50 \%$ of the monthly requirement in the same month and $50 \%$ of the next month's requirement. All purchases after January shall be made on 30 days credit.
(viii) Salaries shall be paid in the first week of subsequent month.
(ix) $70 \%$ of the variable overheads shall be paid in the same month and $30 \%$ in the next month.

## Required:

Prepare a cash budget for the months January 2008 to April 2008 showing the balance of cash / running finance at the end of each month.
Q. 5 Quadra Electronics assembles and sells three products - W, X and Y. The cost per unit for each product is as follows:

|  | $\mathbf{W}$ | X | Y |
| :--- | ---: | ---: | ---: |
|  | Rupees | Rupees | Rupees |
| Direct materials | 4,880 | 1,600 | 1,000 |
| Direct labour | 4,000 | 2,000 | 700 |
| Variable overheads | 1,360 | 480 | 348 |
| Fixed production overheads | 1,172 | 1,290 | 960 |
| Total cost per unit | 11,412 | 5,370 | 3,008 |

The fixed overheads are worked out on the basis of normal production levels i.e 15,000; 45,000; and 60,000 units per annum for $\mathrm{W}, \mathrm{X}$ and Y respectively.

The fixed selling and administrative costs for the next year are expected to be Rs. 71,270,400.

Management estimates that the ratio of sales quantities of $\mathrm{W}, \mathrm{X}$ and Y shall be 1:3:4 and selling price per unit shall be Rs. 12,800; Rs. 6,000 and Rs. 3,600 respectively.

## Required:

(a) Calculate the number of units of $\mathrm{W}, \mathrm{X}$ and Y to be sold in order to achieve break even.
(b) Calculate the break even sales in terms of Rupees.
Q. 6 Ternary Packages is located at a remote site in an industrial estate which is far away from the center of the city. Management of the company is now considering to provide pick and drop facility to its employees. A two member committee has reviewed the available options and has come up with a proposal to purchase three vans and run them on three different routes i.e. A, B and C. The information for each van is as follows:

|  | Rupees |
| :--- | ---: |
| Purchase price | $1,200,000$ |
| Expected trade-in value after 4 years | 200,000 |
| Insurance per annum | 50,000 |
| Quarterly service including change of lubricants | 4,000 |
| Replacement of spare parts per 20,000 km | 15,000 |
| Vehicle License fee per annum | 8,000 |
| Tyre replacements after $40,000 \mathrm{~km}$ | 14,000 |
| Cost of diesel per litre | 40 |

Annual running for each van will be as follows:

|  | km |
| :--- | :---: |
| Van on route A | 80,000 |
| Van on route B | 120,000 |
| Van on route C | 160,000 |

The committee has estimated that average running will be 16 km per litre.

## Required:

(a) Prepare a schedule to be presented to the management showing following costs in respect of each van for the first year of operation:

- Total variable cost - Variable cost per km
- Total fixed cost - Fixed cost per km
- Total cost - Total cost per km
(b) Briefly explain why the cost per km is different in each case.
Q. 7 Decimal World (Pvt) Limited is engaged in the manufacturing of standard and scientific calculators. The company operates a bonus scheme for all its factory workers. A performance bonus is incorporated into the wages by adding $75 \%$ of the efficiency ratio in excess of $100 \%$ to the basic hourly rate. The following information is available for the month of July 2007:

| Basic rate of pay per hour (Rs.) | 125 |
| :--- | ---: |
| Standard production per hour (units) | 4 |
| Production during the period (units) | 226,176 |
| Actual hours spent | 45,600 |

## Required:

(a) Calculate the hourly wage rate inclusive of performance bonus.
(b) Calculate the total labour cost variance.

