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**SUGGESTED SOLUTION**  
**INTERMEDIATE N'19 EXAM**  
**SUBJECT- COSTING**  
**Test Code – CIN 5023 M**  
**(Date :)**

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**ANSWER-1****ANSWER-A****(5 MARKS)****Statement of cost per batch and per order**

No. of batch = 600 units ÷ 50 units = 12 batches

|             | <b>Particulars</b>  | <b>Cost per batch<br/>(Rs.)</b> | <b>Total<br/>Cost<br/>(Rs.)</b> |
|-------------|---|---------------------------------|---------------------------------|
|             | Direct Material Cost  | 5,000.00                        | 60,000                          |
|             | Direct Wages  | 500.00                          | 6,000                           |
|             | Oven set-up cost  | 750.00                          | 9,000                           |
|             | <i>Add: Production Overheads (20% of Direct wages)</i>                          | 100.00                          | 1,200                           |
|             | Total Production cost   | 6,350.00                        | 76,200                          |
|             | <i>Add: S&amp;D and Administration overheads (10% of Total production cost)</i> | 635.00                          | 7,620                           |
|             | Total Cost  | 6,985.00                        | 83,820                          |
|             | <i>Add: Profit (1/3<sup>rd</sup> of total cost)</i>                             | 2,328.33                        | 27,940                          |
| <b>(i)</b>  | <b>Sales price</b>  | <b>9,313.33</b>                 | <b>1,11,760</b>                 |
|             | No. of units in batch   | 50 units                        |                                 |
| <b>(ii)</b> | <b>Cost per unit (Rs.6,985 ÷ 50 units)</b>                                      | <b>139.70</b>                   |                                 |
|             | <b>Selling price per unit (9,313.33 ÷ 50 units)</b>                             | <b>186.27</b>                   |                                 |

**(iii)** If the order is for 605 cakes, then selling price per cake would be as below:

| <b>Particulars</b>  | <b>Total Cost (Rs.)</b> |
|---|-------------------------|
| Direct Material Cost  | 60,500                  |
| Direct Wages  | 6,050                   |
| Oven set-up cost  | 9,750                   |
| <i>Add: Production Overheads (20% of Direct wages)</i>                          | 1,210                   |
| Total Production cost   | 77,510                  |
| <i>Add: S&amp;D and Administration overheads (10% of Total production cost)</i> | 7,751                   |
| Total Cost  | 85,261                  |
| <i>Add: Profit (1/3<sup>rd</sup> of total cost)</i>                             | 28,420                  |
| <b>Sales price</b>  | <b>1,13,681</b>         |
| No. of units  | 605 units               |
| <b>Selling price per unit (Rs.1,13,681 ÷ 605 units)</b>                         | <b>187.90</b>           |

**ANSWER-B****(5 MARKS)**

- (i) Statement of profitability of the Oil Mill (After carrying out further processing) for the quarter ending 31<sup>st</sup> March 20X8.

| Products | Sales Value after further processing | Share of Joint Cost | Additional processing cost | Total Cost after processing | Profit (loss) |
|----------|--------------------------------------|---------------------|----------------------------|-----------------------------|---------------|
| ACH      | 1,72,500                             | 98,667              | 43,000                     | 1,41,667                    | 30,833        |
| BCH      | 15,000                               | 19,733              | 9,000                      | 28,733                      | (13,733)      |
| CSH      | 6,000                                | 4,933               | --                         | 4,933                       | 1,067         |
| DSH      | 45,000                               | 24,667              | 1,500                      | 26,167                      | 18,833        |
|          | 2,38,500                             | 1,48,000            | 53,500                     | 2,01,500                    | 37,000        |

- (ii) Statement of profitability at the split off point

| Product | Selling price of split off | Output in units | Sales value at split off point | Share of joint cost | Profit at split off point |
|---------|----------------------------|-----------------|--------------------------------|---------------------|---------------------------|
| ACH     | 15.00                      | 8,000           | 1,20,000                       | 98,667              | 21,333                    |
| BCH     | 6.00                       | 4,000           | 24,000                         | 19,733              | 4,267                     |
| CSH     | 3.00                       | 2,000           | 6,000                          | 4,933               | 1,067                     |
| DSH     | 7.50                       | 4,000           | 30,000                         | 24,667              | 5,333                     |
|         |                            |                 | 1,80,000                       | 1,48,000            | 32,000                    |

**Note :** Share of Joint Cost has been arrived at by considering the sales value at split off point.

**ANSWER-C****(5 MARKS)**

Calculation of Cost of Production of Arnav Metallic for the period .....

| Particulars  | Amount (Rs.)       |
|--|--------------------|
| Raw materials purchased                                      | 64,00,000          |
| Add : Opening stock  | 2,88,000           |
| Less : Closing stock   | (4,46,000)         |
| Material consumed  | 62,42,000          |
| Wages paid   | 23,20,000          |
| Prime cost   | 85,62,000          |
| Repair and maintenance cost of plant & machinery             | 9,80,500           |
| Insurance premium paid for inventories                       | 26,000             |
| Insurance premium paid for plant & machinery                 | 96,000             |
| Quality control cost   | 86,000             |
| Research & development cost                                  | 92,600             |
| Administrative overheads related with factory and production | 9,00,000           |
|  | 1,07,43,100        |
| Add : Opening value of W – I – P                             | 4,06,000           |
| Less : Closing value of W – I – P                            | (6,02,100)         |
|  | 1,05,47,000        |
| Less : Amount realised by selling scrap                      | (9,200)            |
| Add : Primary packing cost                                   | 10,200             |
| <b>Cost of Production</b>                                    | <b>1,05,48,000</b> |

Notes :

- (i) Other administrative overhead does not form part of cost of production.
- (ii) Salary paid to Director (Technical) is an administrative cost.

**ANSWER-D**

**(5 MARKS)**

(i) 
$$EOQ = \sqrt{\frac{2ab}{CS}}$$

where

$a$  = Annual consumption

$b$  — Buying cost per order

$C$  = Cost per unit

$S$  = Storage and other inventory carrying cost rate

| EOQ for Super Grow                                     | EOQ for Nature's Own                                   |
|--|--|
| $EOQ = \sqrt{\frac{2 \times 2,000 \times 1,200}{480}}$ | $EOQ = \sqrt{\frac{2 \times 1,280 \times 1,400}{560}}$ |
| $= \sqrt{10,000}$ or 100 bags                          | $= \sqrt{6,400}$ or 80 bags                            |

- (ii) Total annual relevant cost for Super Grow Fertilizer

= Total annual relevant ordering costs + Total annual relevant carrying cost

$= (1,200/100) \times 2,000 + \frac{1}{2} \times 100 \text{ bags} \times 480$

$= \text{Rs. } 24,000 + \text{Rs. } 24,000 = \text{Rs. } 48,000$

Total annual relevant costs for Nature's Own Fertilizer

= Total annual relevant ordering costs + Total annual relevant carrying costs

$= (1,400/80) \times 1,280 \text{ bags} + \frac{1}{2} \times 80 \text{ bags} \times \text{Rs. } 560$

$= \text{Rs. } 22,400 + \text{Rs. } 22,400 = \text{Rs. } 44,800$

- (iii) Number of deliveries for Super Grow Fertilizer per year

$$= \frac{\text{Annual Demand of Fertilizer bags}}{EOQ}$$

$$= 2,000 \text{ bags}/100 \text{ bags} = 20 \text{ orders}$$

Number of deliveries for Nature's Own Fertilizer per year

$$= 1,280 \text{ bags}/80 \text{ bags} = 16 \text{ orders}$$

## ANSWER-2

## ANSWER-A

### Workings:

Preparation of Cost Sheet/ Cost Statement

| Particulars   | Amount (Rs.) |
|---|--------------|
| Materials   | 26,80,000    |
| Wages   | 17,80,000    |
| Prime Cost  | 44,60,000    |
| Add: Factory expenses (20% of Rs. 44,60,000)  | 8,92,000     |
| Factory Cost  | 53,52,000    |
| Add: Administrative expenses (10% of Rs. 53,52,000)   | 5,35,200     |
| Cost of Production  | 58,87,200    |
| Less: Closing Stock $\frac{\text{Rs.}5887200}{52000 \text{ units}} \times 2000 \text{ units}$ | (2,26,431)   |
| Cost of Goods Sold  | 56,60,769    |
| Add: Selling expenses (Rs.10 × 50,000 units)  | 5,00,000     |
| Cost of Sales   | 61,60,769    |
| Profit (Balancing figure)   | 39,231       |
| Sales Value   | 62,00,000    |

(5 MARKS)

### Costing Profit and Loss Account

| Particulars  | Amount (Rs.) | Particulars      | Amount (Rs.) |
|--------------|--------------|------------------|--------------|
| To Materials | 26,80,000    | By Sales         | 62,00,000    |
| To Wages     | 17,80,000    | By Closing stock | 2,26,431     |

|                              |           |  |           |
|------------------------------|-----------|--|-----------|
| To Factory expenses          | 8,92,000  |  |           |
| To Administrative expenses   | 5,35,200  |  |           |
| To Selling expenses          | 5,00,000  |  |           |
| To Profit (Balancing figure) | 39,231    |  |           |
|                              | 64,26,431 |  | 64,26,431 |

(2 MARKS)

**Reconciliation of profit as per Cost Accounts and as per Financial Accounts**

| Particulars  | Amount (Rs.) |
|--|--------------|
| Profit as per Cost Accounts  | 39,231       |
| <b>Additions:</b>  |              |
| Administrative expenses (Over-absorbed) (Rs. 5,35,200 – Rs.4,80,200) | 55,000       |
| Selling expenses (Overcharged) (Rs. 5,00,000 – Rs. 2,50,000)         | 2,50,000     |
| Dividend received  | 20,000       |
|  | 3,64,231     |
| <b>Deductions:</b>   |              |
| Factory expenses (Under -absorbed) (Rs. 9,50,000 – 8,92,000)         | 58,000       |
| Closing stock (Over-valued) (Rs.2,26,431 – Rs. 1,50,000)             | 76,431       |
| Preliminary expenses written off                                     | 50,000       |
|  | 1,84,431     |
| Profit as per Financial Accounts                                     | 1,79,800     |

(Reconciliation statement may also be prepared by taking financial profit as base.)

(3 MARKS)

**ANSWER-B**

**Working Notes:**

- (i) Effective hours for standing charges (208 hours – 8 hours) = 200 hours
- (ii) Effective hours for variable costs (208 hours – 28 hours) = 180 hours

Standing Charges per hour

|   | Cost per month<br>(Rs.) | Cost per hour<br>(Rs.) (Cost per month ÷ 200<br>hours) |
|---|-------------------------|--|
| Supervisor's salary $\left(\frac{Rs.6000}{3 \text{ machines}}\right)$                 | 2,000                   | 10.00  |
| Rent of building $\left(\frac{1}{6} \times \frac{Rs.72000}{12 \text{ months}}\right)$ | 1,000                   | 5.00   |
| General lighting  | 1,000                   | 5.00   |
| Total Standing Charges  | 4,000                   | 20.00  |

(3 MARKS)

Machine running expenses per hour

|  | Cost per month (Rs.) | Cost per hour (Rs.)  |
|--|----------------------|--|
| Depreciation<br>$\left(\frac{Rs. 50000 - Rs. 20000}{10 \text{ years}} \times \frac{1}{12 \text{ months}}\right)$ | 4,000                | 20.00<br>$\left(\frac{Rs. 4000}{200 \text{ hours}}\right)$ |
| Wages  | 2,500                | 12.50<br>$\left(\frac{Rs. 2500}{200 \text{ hours}}\right)$ |
| Repairs & Maintenance<br>$\left(\frac{Rs. 60480}{12 \text{ months}}\right)$                                      | 5,040                | 28.00<br>$\left(\frac{Rs. 5040}{180 \text{ hours}}\right)$ |
| Consumable stores<br>$\left(\frac{Rs. 47520}{12 \text{ months}}\right)$  | 3,960                | 22.00<br>$\left(\frac{Rs. 3960}{180 \text{ hours}}\right)$ |
| Power (25 units × Rs.2 × 180 hours)  | 9,000                | 50.00  |
| Total Machine Expenses   | 24,500               | 132.50   |

(4 MARKS)

**Computation of Two – tier machine hour rate**

|                                 | Set up time rate per machine hour (Rs.) | Running time rate per machine hour (Rs.) |
|---------------------------------|---|--|
| Standing Charges                | 20.00                                   | 20.00                                    |
| Machine expenses :              |   |  |
| Depreciation                    | 20.00                                   | 20.00                                    |
| Repair and maintenance          | –                                       | 28.00                                    |
| Consumable stores               | –                                       | 22.00                                    |
| Power                           | –                                       | 50.00                                    |
| Machine hour rate of overheads  | 40.00                                   | 140.00                                   |
| Wages                           | 12.50                                   | 12.50                                    |
| Comprehensive machine hour rate | 52.50                                   | 152.50                                   |

**(3 MARKS)**

**ANSWER-3**

**ANSWER-A**

|                             | Rs.      |
|-----------------------------|----------|
| Sales 50,000 units at Rs. 7 | 3,50,000 |
| Variable cost 50,000 × 3    | 1,50,000 |
| Contribution 50,000 × 4     | 2,00,000 |
| Fixed costs                 | 1,20,000 |
| Profit                      | 80,000   |

$$P/V \text{ ratio} = \frac{S-V}{S} \times 100 = \frac{7-3}{7} \times 100 = \frac{4}{7} \times 100 = 57.14\%$$

$$BEP \text{ (units)} = \frac{F}{\text{contribution per unit}} = \frac{120000}{4} = 30000 \text{ units}$$

$$BEP \text{ (Value)} = 30,000 \text{ Units} \times 7 = \text{Rs. } 2,10,000$$

Profit Rs. 80,000 (as calculated above)

**(2.5 MARKS)**



(ii) with a 10% increase in output & sales

**(1 MARK)**

i.e.,  $50,000 + 5,000 = 55,000$  units

|   |              |
|---|--------------|
| Contribution $55,000 \times \text{Rs. } 4$ per unit | Rs. 2,20,000 |
| Fixed costs   | Rs. 1,20,000 |
| Profit  | Rs. 1,00,000 |

(iii) with a 10% increase in Fixed Cost

**(1 MARK)**

|  |              |
|--|--------------|
| Contribution ( $50,000 \times \text{Rs. } 4$ per unit) | Rs. 2,00,000 |
| Fixed cost ( $1,20,000 + 12,000$ )                     | Rs. 1,32,000 |
| Profit   | Rs. 68,000   |

(iv) with a 10% increase in variable costs

**(2 MARKS)**

|   |          |
|---|----------|
| Selling price per unit                  | 7.00     |
| Less: variable cost ( $3 + 0.30$ )      | 3.30     |
| Contribution per unit                   | 3.70     |
| Total contribution $50,000 \times 3.70$ | 1,85,000 |
| Fixed costs                             | 1,20,000 |
| Profit                                  | 65,000   |

(v) with a 10% increase in selling price

**(2 MARKS)**

|   |          |
|---|----------|
| Selling price per unit ( $7.00 + 0.70$ )            | 7.70     |
| Variable cost per unit                              | 3.00     |
| Contribution per unit                               | 4.70     |
| Total contribution $50,000 \times \text{Rs. } 4.70$ | 2,35,000 |
| Fixed costs   | 1,20,000 |
| Profit  | 1,15,000 |

(vi) Effect of all the four above:-

**(1.5 MARKS)**

|                                  |              |
|----------------------------------|--------------|
| Sales 55,000 × Rs. 7.70 per unit | Rs. 4,23,500 |
| Variable cost 55,000 × 3.30      | Rs. 1,81,500 |
| Contribution 55,000 × 4.40       | Rs. 2,42,000 |
| Fixed cost 1,20,000 + 12,000     | Rs. 1,32,000 |
| Profit                           | Rs. 1,10,000 |

Note: It is assumed that the increased output of 55,000 units has been sold.

### ANSWER-B

#### Production budget of Product Minimax and Heavyhigh (in units)

|   | April  |        | May    |       | June   |        | Total  |        |
|---|--------|--------|--------|-------|--------|--------|--------|--------|
|   | MM     | HH     | MM     | HH    | MM     | HH     | MM     | HH     |
| Sales   | 8,000  | 6,000  | 10,000 | 8,000 | 12,000 | 9,000  | 30,000 | 23,000 |
| Add: Closing Stock (25% of next month's sale) | 2,500  | 2,000  | 3,000  | 2,250 | 4,000  | 3,500  | 9,500  | 7,750  |
| Less: Opening Stock                           | 2,000* | 1,500* | 2,500  | 2,000 | 3,000  | 2,250  | 7,500  | 5,750  |
| Production units                              | 8,500  | 6,500  | 10,500 | 8,250 | 13,000 | 10,250 | 32,000 | 25,000 |

\*Opening stock of April is the closing stock of March, which is as per company's policy

25% of next months sale.

(5 MARKS)

#### Production Cost Budget

| Element of cost        | Rate (Rs.)              |                         | Amount (Rs.) |           |
|------------------------|-------------------------|-------------------------|--------------|-----------|
|                        | MM<br>(32,000<br>units) | HH<br>(25,000<br>units) | M<br>M       | HH        |
| Direct Material        | 220                     | 280                     | 70,40,000    | 70,00,000 |
| Direct Labour          | 130                     | 120                     | 41,60,000    | 30,00,000 |
| Manufacturing Overhead |                         |                         |              |           |

|                               |  |  |             |             |
|-------------------------------|--|--|-------------|-------------|
| (4,00,000/ 1,80,000 × 32,000) |  |  | 71,111      |             |
| (5,00,000/ 1,20,000 × 25,000) |  |  |             | 1,04,167    |
|                               |  |  | 1,12,71,111 | 1,01,04,167 |

(5 MARKS)

**ANSWER-4**

**ANSWER-A**

**Working Notes**

**Standard Costs**

|                                    | Rs.      |
|------------------------------------|----------|
| Direct materials (6,000 × Rs. 12)  | 72,000   |
| Direct labour (6,000 × Rs. 4.40)   | 26,400   |
| Variable overheads (6,000 × Rs. 3) | 18,000   |
| Total                              | 1,16,400 |

**Actual Cost**

|                                  |          |
|----------------------------------|----------|
| Direct Materials (12,670 × 5.70) | 72,219   |
| Direct wages                     | 27,950   |
| Variable overhead incurred       | 20,475   |
| Total                            | 1,20,644 |

Total Variance = SC- AC = 1,16,400 – 1,20,644 = Rs. 4,244 (A)

(4 MARKS)

**Missing Figures**

1. Actual Direct Labour Hours (DLH)

We can find out this through Variable overhead efficiency variance of Rs. 1,500 adverse

VOH Efficiency Variance= SR (SH – AH)

|               |   |                                |
|---------------|---|--------------------------------|
| 1,500 A       | = | 3(6,000 – AH)                  |
| -1,500        | = | 18,000 – 3 AH                  |
| 3AH           | = | 18,000 + 1,500 = 19,500        |
| AH = 19,500/3 | = | 6,500 Actual Hours i.e. Actual |

$$\text{Actual Labour Rate per hour} = \frac{\text{Rs. } 27950}{6500 \text{ DLH}} = \text{Rs. } 4.30$$

## Relevant Variances:

|    |   |               |
|----|---|---------------|
| 1  | Material Variances:                               |               |
|    | (a) MCV = SC – AC = 72,000 – 72,219 =             | Rs. 219 (A)   |
|    | (b) MPV = AQ (SR – AR) = 12,670 (6 – 5.70) =      | Rs. 3,801 (F) |
|    | or = 19,000 (6 – 5.70) =                          | Rs. 5,700(F)  |
|    | (c) MUV = SR (SQ – AQ) = 6 (6,000 × 2 – 12,670)   |               |
|    | = 6 (12,000 – 12,670) =                           | Rs. 4,020 (A) |
| 2. | Labour Variances:                                 |               |
|    | (a) LCV = SC – AC = 26,400 – 27,950 =             | Rs. 1,550 (A) |
|    | (b) LRV = AHP (SR – AR) = 6,500 (4.40 – 4.30) =   | Rs. 650 (F)   |
|    | (c) LEV = SR (SH – AHP) = 4.40 (6,000 – 6,500) =  | Rs. 2,200 (A) |
| 3. | Variable Overhead Variances : (Output Basis)      |               |
|    | (a) VOH Variance = SVO – AVO = 18,000 – 20,475    | Rs. 2,475 (A) |
|    | (b) Efficiency Variance = SR (SQ – AQ) (Note 1)   |               |
|    | = 3 (6,500 – 6,000) =                             | Rs. 1,500 (A) |
|    | (c) Expenditure Variance = (SVOSP – AVO) (Note 2) |               |
|    | = (19,500 – 20,475) =                             | Rs. 975 (A)   |

**Note :**

- One unit of production in one hour. For 6,500 DLH, 6,500 units should have been produced (SQ). But AQ = 6,000 units. i.e. less than SQ. Hence, it is adverse variance of Rs. 1,500.
- Standard Variable Overhead on Standard Production = 6,500 × 3 = Rs. 19,500

**(6 MARKS)**

## ANSWER-B

### Statement of Equivalent Production Process III

| Input Details       | Units  | Output Particulars                      | Units   | Equivalent Production |         |            |         |                   |         |
|---------------------|--------|---|---------|-----------------------|---------|------------|---------|-------------------|---------|
|                     |        |   |         | Material-A            |         | Material-B |         | Labour & Overhead |         |
|                     |        |   |         | %                     | Units   | %          | Units   | %                 | Units   |
| Opening WIP         | 1,600  | Work on Op. WIP                         | 1,600   | -                     | -       | 20         | 320     | 40                | 640     |
| Process-II Transfer | 55,400 | Introduced & completed during the month | 50,600  | 100                   | 50,600  | 100        | 50,600  | 100               | 50,600  |
|                     |        | Normal loss (5% of 52,800 units)        | 2,640   | -                     | -       | -          | -       | -                 | -       |
|                     |        | Closing WIP                             | 4,200   | 100                   | 4,200   | 70         | 2,940   | 50                | 2,100   |
|                     |        | Abnormal Gain                           | (2,040) | 100                   | (2,040) | 100        | (2,040) | 100               | (2,040) |
|                     | 57,000 |   | 57,000  |                       | 52,760  |            | 51,820  |                   | 51,300  |

#### Working note:

Production units = Opening units + Units transferred from Process-II – Closing Units

$$= 1,600 \text{ units} + 55,400 \text{ units} - 4,200 \text{ units}$$

$$= 52,800 \text{ units}$$

(2 MARKS)

#### Statement of Cost

|  | Cost (Rs.) | Equivalent units | Cost per equivalent units (Rs.) |
|--|------------|------------------|---------------------------------|
| Material A (Transferred from previous process)         | 6,23,250   |                  |                                 |
| Less: Scrap value of normal loss (2,640 units × Rs. 5) | (13,200)   |                  |                                 |

|            |          |        |         |
|------------|----------|--------|---------|
|            | 6,10,050 | 52,760 | 11.5627 |
| Material B | 2,12,400 | 51,820 | 4.0988  |
| Labour     | 96,420   | 51,300 | 1.8795  |
| Overheads  | 56,400   | 51,300 | 1.0994  |
|            | 9,75,270 |        | 18.6404 |

(2 MARKS)

**Statement of apportionment of Process Cost**

|   |  | Amount<br>(Rs.) | Amount<br>(Rs.) |
|---|--|-----------------|-----------------|
| Opening WIP                               | Material A                             |                 | 24,000          |
| Completed opening WIP units- 1600         | Material B (320 units × Rs. 4.0988)    | 1311.62         |                 |
|   | Wages (640 units × Rs. 1.8795)         | 1202.88         |                 |
|   | Overheads (640 units × Rs. 1.0994)     | 703.62          | 3,218.12        |
| Introduced & Completed- units 50,600      | 50,600 units × Rs. 18.6404             |                 | 9,43,204.24     |
| Total cost of 52,200 finished goods units |  |                 | 9,70,422.36     |
| Closing WIP units- 4,200                  | Material A (4,200 units × Rs. 11.5627) |                 | 48,563.34       |
|   | Material B (2,940 units × Rs. 4.0988)  |                 | 12,050.47       |
|   | Wages (2,100 units × Rs. 1.8795)       |                 | 3,946.95        |
|   | Overheads (2,100 units × Rs. 1.0994)   |                 | 2,308.74        |

|                             |                             |           |
|-----------------------------|-----------------------------|-----------|
| Abnormal gain units - 2,040 | (2,040 units × Rs. 18.6404) | 66,869.50 |
|                             |                             | 38026.42  |

(3.5 MARKS)

**Process III A/c**

| Particulars |                      | Units  | Amount (Rs.) | Particulars |                | Units  | Amount (Rs.) |
|-------------|----------------------|--------|--------------|-------------|----------------|--------|--------------|
| To          | Balance b/d          | 1,600  | 24,000       | By          | Normal loss    | 2,640  | 13,200       |
| To          | Process II A/c       | 55,400 | 6,23,250     | By          | Finished goods | 52,200 | 9,70,422.36  |
| To          | Direct material      |        | 2,12,400     | By          | Closing WIP    | 4,200  | 66,874.06*   |
| To          | Direct wages         |        | 96,420       |             |                |        |              |
| To          | Production overheads |        | 56,400       |             |                |        |              |
| To          | Abnormal gain        | 2,040  | 38,026.42    |             |                |        |              |
|             |                      | 59,040 | 10,50,496.42 |             |                | 59,040 | 10,50,496.42 |

\* Difference in figure due to rounding off has been adjusted with closing WIP

(2.5 MARKS)

**ANSWER-5**

**ANSWER-A**

**Statement of Operating income and Operating income as a percentage of revenues for each product line**

(When support costs are allocated to product lines on the basis of cost of goods sold of each product)

|  | Soft Drinks<br>(Rs.) | Fresh Produce<br>(Rs.) | Packaged Foods<br>(Rs.) | Total<br>(Rs.) |
|--|----------------------|------------------------|-------------------------|----------------|
| Revenues: (A)                                  | 39,67,500            | 1,05,03,000            | 60,49,500               | 2,05,20,000    |
| Cost of Goods sold (COGS): (B)                 | 30,00,000            | 75,00,000              | 45,00,000               | 1,50,00,000    |
| Support cost (30% of COGS): (C) (Refer working | 9,00,000             | 22,50,000              | 13,50,000               | 45,00,000      |

|  |           |           |           |             |
|--|-----------|-----------|-----------|-------------|
| notes)   |           |           |           |             |
| Total cost: (D) = {(B) + (C)}                              | 39,00,000 | 97,50,000 | 58,50,000 | 1,95,00,000 |
| Operating income: E= {(A)-(D)}                             | 67,500    | 7,53,000  | 1,99,500  | 10,20,000   |
| Operating income as a percentage of revenues: (E/A) × 100) | 1.70%     | 7.17%     | 3.30%     | 4.97%       |

**Working notes:**

**1. Total support cost:**

|                    | (Rs.)     |
|--------------------|-----------|
| Bottles returns    | 60,000    |
| Ordering           | 7,80,000  |
| Delivery           | 12,60,000 |
| Shelf stocking     | 8,64,000  |
| Customer support   | 15,36,000 |
| Total support cost | 45,00,000 |

**2. Percentage of support cost to cost of goods sold (COGS):**

$$= \frac{\text{Total support cost}}{\text{Total COGS}} \times 100$$

$$= \frac{4500000}{15000000} \times 100 = 30\%$$

**3. Cost for each activity cost driver:**

| Activity<br>(1) | Total cost<br>(Rs.)<br>(2) | Cost allocation<br>base<br>(3) | Cost driver rate<br>(4) = [(2) ÷ (3)] |
|-----------------|----------------------------|--------------------------------|---------------------------------------|
| Ordering        | 7,80,000                   | 1,560 purchase orders          | Rs.500 per purchase order             |
| Delivery        | 12,60,000                  | 3,150 deliveries               | Rs.400 per delivery                   |
| Shelf-stocking  | 8,64,000                   | 8,640 hours                    | Rs.100 per stocking hour              |



|                  |           |                      |                    |
|------------------|-----------|----------------------|--------------------|
| Customer support | 15,36,000 | 15,36,000 items sold | Rs.1 per item sold |
|------------------|-----------|----------------------|--------------------|

(7 MARKS)

**Statement of Operating income and Operating income as a percentage of revenues for each product line**

(When support costs are allocated to product lines using an activity -based costing system)

|   | Sof<br>t<br>drink<br>s<br><br>(Rs.) | Fresh<br>Produce<br><br>(Rs.) | Packaged<br>Food<br>(Rs.<br>) | Total<br><br>(Rs.) |
|---|-------------------------------------|-------------------------------|-------------------------------|--------------------|
| Revenues: (A)   | 39,67,500                           | 1,05,03,000                   | 60,49,500                     | 2,05,20,000        |
| Cost & Goods sold                                       | 30,00,000                           | 75,00,000                     | 45,00,000                     | 1,50,00,000        |
| Bottle return costs                                     | 60,000                              | 0                             | 0                             | 60,000             |
| Ordering cost*<br>(360:840:360)                         | 1,80,000                            | 4,20,000                      | 1,80,000                      | 7,80,000           |
| Delivery cost*<br>(300:2190:660)                        | 1,20,000                            | 8,76,000                      | 2,64,000                      | 12,60,000          |
| Shelf stocking cost*<br>(540:5400:2700)                 | 54,000                              | 5,40,000                      | 2,70,000                      | 8,64,000           |
| Customer Support cost*<br>(1,26,000:11,04,000:3,06,000) | 1,26,000                            | 11,04,000                     | 3,06,000                      | 15,36,000          |
| Total cost: (B)   | 35,40,000                           | 1,04,40,000                   | 55,20,000                     | 1,95,00,000        |
| Operating income C: {(A)- (B)}                          | 4,27,500                            | 63,000                        | 5,29,500                      | 10,20,000          |
| Operating income as a % of revenues                     | 10.78%                              | 0.60%                         | 8.75%                         | 4.97%              |

\* Refer to working note 3

(3 MARKS)

**ANSWER-B**

(i) Calculation of total cost for 'Professionals Protect Plus' policy

|           | Particulars                         | Amount (Rs.) | Amount (Rs.) |
|-----------|-------------------------------------|--------------|--------------|
| <b>1.</b> | <b>Marketing and Sales support:</b> |              |              |
|           | - Policy development cost           | 11,25,000    |              |
|           | - Cost of marketing                 | 45,20,000    |              |
|           | - Sales support expenses            | 11,45,000    | 67,90,000    |
| <b>2.</b> | <b>Operations:</b>                  |              |              |
|           | - Policy issuance cost              | 10,05,900    |              |
|           | - Policy servicing cost             | 35,20,700    |              |
|           | - Claims management cost            | 1,25,600     | 46,52,200    |
| <b>3.</b> | <b>IT Cost</b>                      |              | 74,32,000    |
| <b>4.</b> | <b>Support functions</b>            |              |              |
|           | - Postage and logistics             | 10,25,000    |              |
|           | - Facilities cost                   | 15,24,000    |              |
|           | - Employees cost                    | 5,60,000     | 47,29,400    |
|           | - Office administration cost        | 16,20,400    |              |
|           | Total Cost                          |              | 2,36,03,600  |

$$(ii) \text{ Calculation of cost per policy} = \frac{\text{Total cost}}{\text{No. of policies}} = \frac{\text{Rs.23603600}}{528} = \text{Rs. 44703.79}$$

$$(iii) \text{ Cost per rupee of insured value} = \frac{\text{Total cost}}{\text{Total insured value}} = \frac{\text{Rs.2.36 crore}}{\text{Rs.1320 crore}} = \text{Rs. 0.0018}$$

(10 MARKS)

## ANSWER-6

### ANSWER-A

(5 MARKS)

Before setting up a system of cost accounting the under mentioned factors should be studied:

- (i) **Objective:** The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.
- (ii) **Nature of Business or Industry:** The Industry in which business is operating. Every business industry has its own peculiarity and objectives. According to its cost information requirement cost accounting methods are followed. For example, an oil refinery maintains process wise cost accounts to find out cost incurred on a particular process say in crude refinement process etc.
- (iii) **Organisational Hierarchy:** Costing system should fulfil the information requirements of different levels of management. Top management is concerned with the corporate strategy, strategic level management is concerned with marketing strategy, product diversification, product pricing etc. Operational level management needs the information on standard quantity to be consumed, report on idle time etc.
- (iv) **Knowing the product:** Nature of product determines the type of costing system to be implemented. The product which has by-products requires costing system which account for by-products as well. In case of perishable or short self- life, marginal costing method is required to know the contribution and minimum price at which it can be sold.
- (v) **Knowing the production process:** A good costing system can never be established without the complete knowledge of the production process. Cost apportionment can be done on the most appropriate and scientific basis if a cost accountant can identify degree of effort or resources consumed in a particular process. This also includes some basic technical know- how and process peculiarity.
- (vi) **Information synchronisation:** Establishment of a department or a system requires substantial amount of organisational resources. While drafting a costing system, information needs of various other departments should be taken into account. For example, in a typical business organisation accounts department needs to submit monthly stock statement to its lender bank, quantity wise stock details at the time of filing returns to tax authorities etc.
- (vii) **Method of maintenance of cost records:** The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and how the results of separate sets of accounts i.e. cost and financial, could be reconciled by means of control accounts.
- (viii) **Statutory compliances and audit:** Records are to be maintained to comply with statutory requirements and applicable cost accounting standards to be followed.
- (ix) **Information Attributes:** Information generated from the Costing system should possess all the attributes of information i.e. complete, accurate, timeliness, relevant etc. to have an effective management information system (MIS).

**Difference between Fixed and Flexible Budgets:**

| Sl. No. | Fixed Budget  | Flexible Budget  |
|---------|---|--|
| 1.      | It does not change with actual volume of activity achieved. Thus it is known as rigid or inflexible budget  | It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.   |
| 2.      | It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic. | It consists of various budgets for different levels of activity  |
| 3.      | Here as all costs like - fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.       | Here analysis of variance provides useful information as each cost is analysed according to its behaviour.                                       |
| 4.      | If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture.       | Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations. |
| 5.      | Comparison of actual performance with budgeted targets will be meaningless specially when there is a difference between the two activity levels.                  | It provides a meaningful basis of comparison of the actual performance with the budgeted targets.  |

**ANSWER-C****(5 MARKS)**

**Net Realisable Value method:** The realisation on the disposal of the by-product may be deducted from the total cost of production so as to arrive at the cost of the main product. For example, the amount realised by the sale of molasses in a sugar factory goes to reduce the cost of sugar produced in the factory.

When the by-product requires some additional processing and expenses are incurred in making it saleable to the best advantage of the concern, the expenses so incurred should be deducted from the total value realised from the sale of the by-product and only the net realisations should be deducted from the total cost of production to arrive at the cost of production of the main product. Separate accounts should be maintained for collecting additional expenses incurred on:

- (i) further processing of the by-product, and
- (ii) selling, distribution and administration expenses attributable to the by-product.

**Zero based budgeting is superior to traditional budgeting:** Zero based budgeting is superior to traditional budgeting in the following manner:

- It provides a systematic approach for evaluation of different activities.
- It ensures that the function undertaken are critical for the achievement of the objectives.
- It provides an opportunity for management to allocate resources to various activities after a thorough – cost benefit analysis.
- It helps in the identification of wasteful expenditure and then their elimination. It facilitates the close linkage of departmental budgets with corporate objectives.
- It helps in the introduction of a system of Management by Objectives