## MOCK TEST PAPER -I <br> INTERMEDIATE (NEW): GROUP - I <br> PAPER - 3: COST AND MANAGEMENT ACCOUNTING SUGGESTED ANSWERS/HINTS

1. (a) Total Joint Cost

| Particulars | Amount (₹) |
| :--- | ---: |
| Direct Material | 60,000 |
| Direct Labour | 19,200 |
| Variable Overheads | 24,000 |
| Total Variable Cost | $1,03,200$ |
| Fixed Overheads | 64,000 |
| Total joint cost | $1,67,200$ |

## Apportionment of Joint Costs:

|  |  |  | Product-Ghee | Product-Cream |
| :---: | :---: | :---: | :---: | :---: |
| I. | (i) | Apportionment of Joint Cost on the basis of 'Physical Quantity' | $\begin{gathered} ₹ 76,000 \\ \left(\frac{₹ 1,67,200}{200+240 \text { litre }} \times 200\right) \end{gathered}$ | $\begin{gathered} ₹ 91,200 \\ \left(\frac{₹ 1,67,200}{200+240 \text { litre }} \times 240\right) \end{gathered}$ |
|  | (ii) | Apportionment of Joint Cost on the basis of 'Contribution Margin Method': |  |  |
|  |  | - Variable Costs (on basis of physical units) | $\begin{gathered} ₹ 46,909 \\ \left(\frac{₹ 1,03,200}{200+240 \text { litre }} \times 200\right) \end{gathered}$ | $\begin{gathered} ₹ 56,291 \\ \left(\frac{₹ 1,03,200}{200+240 \text { litre }} \times 240\right) \end{gathered}$ |
|  |  | Contribution Margin | $\begin{gathered} 73,091 \\ (₹ 600 \times 200-46,909) \end{gathered}$ | $\begin{gathered} \hline-8,291 \\ \text { (₹200×240-56,291) } \end{gathered}$ |
|  |  | Fixed Costs* | ₹ 64,000 |  |
|  |  | Total apportioned cost | ₹ 1,10,909 | ₹ 56,291 |
| II. | (iii) | Profit or Loss: |  |  |
|  | When | Joint cost apportioned on | sis of physical units |  |
|  | A. | Sales Value | ₹ $1,20,000$ | ₹ 48,000 |
|  | B. | Apportioned joint cost on basis of 'Physical Quantity': | ₹ 76,000 | ₹ 91,200 |
|  | A-B | Profit or (Loss) | 44,000 | $(43,200)$ |
|  | When Joint cost apportioned on basis of 'Contribution Margin Method' |  |  |  |


|  | C | Apportioned joint cost on <br> basis of 'Contribution <br> Margin Method' | ₹ $1,10,909$ | ₹ 56,291 |
| :--- | :--- | :--- | :---: | :---: |
|  | A-C | Profit or (Loss) | $₹ 9,091$ | $₹(8,291)$ |

* The fixed cost of ₹ 64,000 is to be apportioned over the joint products- Ghee and Cream in the ratio of their contribution margin but contribution margin of Product- Cream is Negative so fixed cost will be charged to Product- Ghee only.
(b) (i) Optimum run size or Economic Batch Quantity (EBQ) $=\sqrt{\frac{2 \times D \times S}{C}}$

Where, D = Annual demand i.e. $2.15 \%$ of $8,00,00,000=17,20,000$ units
S $\quad=$ Set-up cost per run $=₹ 4,500$
C $\quad=$ Inventory holding cost per unit per annum

$$
=₹ 2.5 \times 12 \text { months }=₹ 30
$$

$E B Q=\sqrt{\frac{2 \times 17,20,000 \text { units } \times ₹ 4,500}{₹ 30}}=22,716$ units
(ii) Calculation of Total Cost of set-up and inventory holding

|  | Batch size | No. of setups | Set-up Cost (₹) | Inventory holding cost (₹) | Total Cost <br> (₹) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A | $\begin{gathered} 20,000 \\ \text { units } \end{gathered}$ | $\begin{gathered} 86 \\ \left(\frac{17,20,000}{20,000}\right) \end{gathered}$ | $\begin{gathered} 3,87,000 \\ (86 \times ₹ \\ 4,500) \end{gathered}$ | $\begin{gathered} 3,00,000 \\ \left(\frac{20,000 \times ₹ 30}{2}\right) \end{gathered}$ | 6,87,000 |
| B | $\begin{gathered} 22,716 \\ \text { units } \end{gathered}$ | $\begin{gathered} 76 \\ \left(\frac{17,20,000}{22,716}\right) \end{gathered}$ | $\begin{gathered} 3,42,000 \\ (76 \times ₹ \\ 4,500) \end{gathered}$ | $\begin{gathered} \left.\begin{array}{c} 3,40,740 \\ 22,716 \times ₹ 30 \\ 2 \end{array}\right) \end{gathered}$ | 6,82,740 |
|  | Extra Cost ( $\mathrm{A}-\mathrm{B}$ ) |  |  |  | 4,260 |

(c) Computation of machine hour rate of new Machine

|  | Total (₹) | Per hour (₹) |
| :--- | ---: | ---: |
| A. $\underline{\text { Standing Charges }}$ <br> I. Insurance Premium ₹ $9,000 \times \frac{1}{9}$ | 1,000 |  |
| II. Rent $\frac{1}{10} \times ₹ 2,400 \times 12$ months | 2,880 |  |
| B. Machine expenses |  |  |
| I. Repairs and Maintenance (₹ $6,000 \div 4,000$ hours) | 3,880 | $0.97^{*}$ |
| II. Depreciation $\left\lfloor\frac{₹ 10,00,000-₹ 10,000}{10 \text { years } \times 4,000 \text { hours }}\right\rfloor$ |  | 1.50 |


| III. Electricity (8 units x ₹ 3.75) |  | 30.00 |
| :---: | :--- | :--- |
| Machine hour rate |  | 57.22 |

## Working Note

Calculation of productive Machine hour rate
Total hours 4,200

Less: Non-Productive hours $\quad \underline{200}$
Effective machine hours $\quad 4,000$

* ₹ $3,880 \div 4,000$ hours $=₹ 0.97$
(d) Computation of Notional Profit

Value of work certified
Less: Cost of work certified
(₹ $4,00,000$ - ₹ 30,200 ) 3,69,800
Notional profit $\quad 1,19,800$
Computation of Estimated Profit
Contract price 5,44,000
Less: Estimated total cost
Cost of work to date 4,00,000
Estimated further expenditure to complete the contract $\underline{22,000} \quad \underline{4,22,000}$
Estimated profit $\quad 1,22,000$
2. (a) Working notes

1. Annual production
2. Raw material required for 40,000 units ( 40,000 units $\times 1 \mathrm{~kg}$.)
$=40,000$ units
$=40,000 \mathrm{~kg}$.
3. $E O Q=\sqrt{\frac{2 \times 40,000 \mathrm{kgs} \times ₹ ₹ 1,000}{₹ 20}}=2,000 \mathrm{kgs}$.
4. Total cost of procurement and storage when the order size is equal to EOQ or $2,000 \mathrm{~kg}$.

No. of orders ( $40,000 \mathrm{~kg} . \div 2,000 \mathrm{~kg}$.)
Ordering cost ( 20 orders $\times ₹ 1,000$ )
Carrying cost (₹) $(1 / 2 \times 2,000 \mathrm{~kg} . \times ₹ 20)$
Total cost
$=20$ times
= ₹ 20,000
= ₹ 20,000
₹ 40,000
(i) Re-order point = Safety stock + Lead time consumption

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\begin{aligned}
& =\quad 1,000 \mathrm{~kg} .+\frac{40,000 \mathrm{~kg} .}{360 \text { days }} \times 36 \text { days } \\
& =\quad 1,000 \mathrm{~kg} .+4,000 \mathrm{~kg} . \quad=5,000 \mathrm{~kg} .
\end{aligned}
$$

(ii) Statement showing the total cost of procurement and storage of raw materials
(after considering the discount)

| Order <br> size | No. of <br> orders | Total cost of <br> procurement | Average <br> stock | Total cost of <br> storage of raw <br> materials | Discount | Total cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kg. |  | $(₹)$ | $\mathbf{K g}$. | $(₹)$ | $(₹)$ | $(₹)$ |
| $\mathbf{( 1 )}$ | $\mathbf{( 2 )}$ | $(3)=(2) \times ₹ 1,000$ | $(4)=1 / 2 \times(1)$ | $(5)=(4) \times ₹ 20$ | $(6)$ | $(7)=[(3)+(5)-(6)$ |
| 40,000 | 1 | 1,000 | 20,000 | $4,00,000$ | 40,000 | $3,61,000$ |
| 20,000 | 2 | 2,000 | 10,000 | $2,00,000$ | 32,000 | $1,70,000$ |
| 10,000 | 4 | 4,000 | 5,000 | $1,00,000$ | 20,000 | 84,000 |
| 8,000 | 5 | 5,000 | 4,000 | 80,000 | 4,000 | 81,000 |

(iii) Number of orders which the company should place to minimize the costs after taking EOQ also into consideration is 20 orders each of size $2,000 \mathrm{~kg}$. The total cost of procurement and storage in this case comes to ₹ 40,000 , which is minimum. (Refer to working notes 3 and 4)

## (b) Working note:

Computation of revenues (at listed price), discount, cost of goods sold and customer level operating activities costs:

| Particulars | Customers |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Aey | Bee | Cee | Dee | Eey |
| Cases sold: (a) | 9,360 | 14,200 | 62,000 | 38,000 | 9,800 |
| Revenues (at listed price) <br> (₹): (b) $\{(\mathrm{a}) \times$ ₹ 64.80$)\}$ | 6,06,528 | 9,20,160 | 40,17,600 | 24,62,400 | 6,35,040 |
| Discount (₹): (c) $\{(\mathrm{a}) \times$ Discount per case\} |  | $\begin{array}{r} 10,224 \\ (14,200 \text { cases } \times \\ ₹ 0.72) \end{array}$ | $\begin{array}{r} 3,72,000 \\ (62,000 \text { cases } x \\ ₹ 6) \end{array}$ | $\begin{array}{r} 1,73,280 \\ (38,000 \text { cases } \times \\ ₹ 4.56) \end{array}$ | $\begin{array}{r} 63,504 \\ (9,800 \text { cases } \times \\ ₹ 6.48) \end{array}$ |
| Cost of goods sold (₹): (d) $\{(a) \times ₹ 54\}$ | 5,05,440 | 7,66,800 | 33,48,000 | 20,52,000 | 5,29,200 |
| Customer level operating activities costs |  |  |  |  |  |
| Order taking costs (₹): <br> (No. of purchase $\times$ ₹ 240 ) | 7,200 | 12,000 | 14,400 | 12,000 | 14,400 |
| Customer visits costs <br> (₹) (No. of customer visits $\times \text { ₹ 360) }$ | 1,440 | 2,160 | 4,320 | 1,440 | 2,160 |
| Delivery vehicles travel costs (₹) (Kms travelled by delivery vehicles $\times$ ₹ 4.80 per km.) | 3,840 | 3,456 | 5,760 | 7,680 | 11,520 |
| Product handling costs (₹) $\{(\mathrm{a}) \times ₹ 2.40\}$ | 22,464 | 34,080 | 1,48,800 | 91,200 | 23,520 |
| Cost of expediting deliveries (₹) $\{$ No. of expedited deliveries $\times$ ₹ 120\} | - | - | - | - | 240 |
| Total cost of customer level operating activities (₹) | 34,944 | 51,696 | 1,73,280 | 1,12,320 | 51,840 |

(i) Computation of Customer level operating income

| Particulars | Customers |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | Aey (₹) | Bee (₹) | Cee (₹) | Dee (₹) | Eey (₹) |
| Less: Discount <br> (Refer to working note) | $6,06,528$ | $9,20,160$ | $40,17,600$ | $24,62,400$ | $6,35,040$ |
| Revenue <br> (At actual price) |  |  |  |  |  |
| Less: Cost of goods sold <br> (Refer to working note) | - | 10,224 | $3,72,000$ | $1,73,280$ | 63,504 |
| Gross margin | $6,06,528$ | $9,09,936$ | $36,45,600$ | $22,89,120$ | $5,71,536$ |
| Less: Customer level operating <br> activities costs <br> (Refer to working note) | $5,05,440$ | $7,66,800$ | $33,48,000$ | $20,52,000$ | $5,29,200$ |
| Customer level operating income | 64,944 | 51,696 | $1,73,280$ | $1,12,320$ | 51,840 |

(ii) Comments

Customer Dee in comparison with Customer Cee: Operating income of Customer Dee is more than that of Customer Cee, despite having only $61.29 \%$ ( 38,000 units) of the units volume sold in comparison to Customer Cee ( 62,000 units). Customer Cee receives a higher percent of discount i.e. $9.26 \%$ (₹ 6 ) while Customer Dee receive a discount of $7.04 \%$ (₹ 4.56 ). Though the gross margin of customer Cee ( $₹ 2,97,600$ ) is more than that of Customer Dee ( $₹ 2,37,120$ ) but total cost of customer level operating activities of Cee ( $₹ 1,73,280$ ) is more in comparison to Customer Dee ( $₹ 1,12,320$ ). As a result, operating income is more in case of Customer Dee.

Customer Eey in comparison with Customer Aey: Customer Eey is not profitable while Customer Aey is profitable. Customer Eey receives a discount of 10\% (₹ 6.48) while Customer Aey doesn't receive any discount. Sales Volume of Customer Aey and Eey is almost same. However, total cost of customer level operating activities of Eey is far more (₹ 51,840 ) in comparison to Customer Aey (₹ 34,944 ). This has resulted in occurrence of loss in case of Customer Eey.
3. (a) (i) Calculation of Raw Material inputs during the month:

| Quantities Entering Process | Litres | Quantities Leaving Process | Litres |
| :--- | ---: | :--- | ---: |
| Opening WIP | 900 | Transfer to Finished Goods | 4,200 |
| Raw material input (balancing figure) | 5,260 | Process Losses | 1,800 |
|  |  | Closing WIP | 160 |
|  | 6,160 |  | 6,160 |

(ii) Calculation of Normal Loss and Abnormal Loss/Gain

| Particulars | Litres |
| :--- | ---: |
| Total process losses for month | 1,800 |
| Normal Loss (10\% input) | 526 |
| Abnormal Loss (balancing figure) | 1,274 |

(iii) Calculation of values of Raw Material, Labour and Overheads added to the process:

|  | Material | Labour | Overheads |
| :--- | ---: | ---: | ---: |
| Cost per equivalent unit | $₹ 23.00$ | $₹ 7.00$ | $₹ 9.00$ |
| Equivalent units (litre) (refer the <br> working note) | 4,734 | 4,892 | 4,966 |
| Cost of equivalent units | $₹ 1,08,882$ | $₹ 34,244$ | $₹ 44,694$ |
| Add: Scrap value of normal loss (526 <br> units $\times$ ₹ 20) | $₹ 10,520$ | -- | -- |
| Total value added | $₹ 1,19,402$ | $₹ 34,244$ | $₹ 44,694$ |

## Workings:

Statement of Equivalent Units (litre):

| Input Details | Units | Output details | Units | Equivalent Production |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Material |  | Labour |  | Overheads |  |
|  |  |  |  | Units | (\%) | Units | (\%) | Units | (\%) |
| Opening WIP | 900 | Units completed: |  |  |  |  |  |  |  |
| Units introduced | 5,260 | - Opening WIP | 900 | -- | -- | 270 | 30 | 360 | 40 |
|  |  | - Fresh inputs | 3,300 | 3,300 | 100 | 3,300 | 100 | 3,300 | 100 |
|  |  | Normal loss | 526 | -- | -- | -- | -- | -- | -- |
|  |  | Abnormal loss | 1,274 | 1,274 | 100 | 1,274 | 100 | 1,274 | 100 |
|  |  | Closing WIP | 160 | 160 | 100 | 48 | 30 | 32 | 20 |
|  | 6,160 |  | 6,160 | 4,734 |  | 4,892 |  | 4,966 |  |

(iv)

Process Account for Month

|  | Litres | Amount (₹) |  | Litres | Amount (₹) |
| :--- | ---: | ---: | :--- | ---: | ---: |
| To Opening WIP | 900 | 29,970 | By Finished goods | 4,200 | $1,63,800$ |
| To Raw Materials | 5,260 | $1,19,402$ | By Normal loss | 526 | 10,520 |
| To Wages | -- | 34,244 | By Abnormal loss | 1,274 | 49,686 |
| To Overheads | -- | 44,694 | By Closing WIP | 160 | 4,304 |
|  | 6,160 | $2,28,310$ |  | 6,160 | $2,28,310$ |

(b)

## Cost Sheet of ‘Super’

| Particulars | Per unit | Total (₹) |
| :--- | ---: | ---: |
| $(\mathbf{₹})$ |  |  |
| Direct materials (Working note- (i)) | 8.00 | $4,80,000$ |
| Direct wages (Working note- (ii)) | 4.00 | $2,40,000$ |
| Prime cost | 12.00 | $7,20,000$ |
| Production overhead (Working note- (iii)) | 1.20 | 72,000 |
| Factory Cost | 13.20 | $7,92,000$ |
| Administration Overhead (200\% of direct wages) | 8.00 | $4,80,000$ |
| Cost of production | 21.20 | $12,72,000$ |
| Less: Closing stock (60,000 units - 54,000 units) | - | $1,27,200$ |
| Cost of goods sold i.e. $\mathbf{5 4 , 0 0 0}$ units | 21.20 | $11,44,800$ |
| Selling cost | 1.00 | 54,000 |
| Cost of sales/ Total cost | 22.20 | $11,98,800$ |


|  | Profit <br> Sales value (₹ $30 \times 54,000$ units) | 7.80 |
| :--- | ---: | ---: |
|  | $4,21,200$ |  |

## Working Notes:

(i) Direct material cost per unit of 'Normal' = M

Direct material cost per unit of 'Super' $=2 \mathrm{M}$
Total Direct Material cost $\quad=2 \mathrm{M} \times 60,000$ units $+\mathrm{M} \times 1,80,000$ units
Or, ₹ $12,00,000$
$=1,20,000 \mathrm{M}+1,80,000 \mathrm{M}$
Or, M

$$
=\frac{₹ 12,00,000}{3,00,000}=₹ 4
$$

Therefore, Direct material Cost per unit of 'Super’ $=2 \times ₹ 4=₹ 8$
(ii) Direct wages per unit for 'Super’ =W

Direct wages per unit for 'Normal' $\quad=0.6 \mathrm{~W}$
So, $(\mathrm{W} \times 60,000)+(0.6 \mathrm{~W} \times 1,80,000) \quad=₹ 6,72,000$
W = ₹ 4 per unit
(iii) Production overhead per unit $=\frac{₹ 2,88,000}{(60,000+1,80,000)}=₹ 1.20$

Production overhead for 'Super' = ₹ $1.20 \times 60,000$ units $=₹ 72,000$

## Notes:

1. Administration overhead is specific to the product as it is directly related to direct labour as mentioned in the question and hence to be considered in cost of production only.
2. Cash discount is treated as interest and finance charges; hence, it is ignored.
3. Penalty paid against the copyright infringement case is an abnormal cost; hence, not included.

## 4. (a) Working Notes:

(i) Total Room days in a year

| Season | Occupancy (Room-days) | Equivalent Full Room charge <br> days |
| :--- | :--- | :--- |
| Season $-80 \%$ <br> Occupancy | 200 Rooms $\times 80 \% \times 6$ months <br> $\times 30$ days in a month $=28,800$ <br> Room Days | 28,800 Room Days $\times 100 \%$ <br> $=28,800$ |
| Off-season $-40 \%$ <br> Occupancy | 200 Rooms $\times 40 \% \times 6$ months <br> $\times 30$ days in a month $=14,400$ <br> Room Days | 14,400 Room Days $\times 50 \%=7,200$ |
| Total Room Days | $28,800+14,400=43,200$ <br> Room Days | 36,000 Full Room days |

(ii) Lighting Charges:

It is given in the question that lighting charges for 8 months is $₹ 110$ per month and during winter season of 4 months it is ₹ 30 per month. Further it is also given that peak season is 6 months and off season is 6 months.

It should be noted that - being Hill station, winter season is to be considered as part of Off season. Hence, the non-winter season of 8 months include - Peak season of 6 months and Off season of 2 months.
Accordingly, the lighting charges are calculated as follows:

| Season | Occupancy (Room-days) |
| :---: | :---: |
| Season \& Non-winter - 80\% Occupancy | 200 Rooms $\times 80 \% \times 6$ months $\times$ ₹ 110 per month = ₹ $1,05,600$ |
| Off- season \& Non-winter 40\% Occupancy (8-6 months) | 200 Rooms $\times 40 \% \times 2$ months $\times$ ₹ 110 per month $=$ ₹ 17,600 |
| Off- season \& -winter - $40 \%$ Occupancy months) | $\begin{aligned} & 200 \text { Rooms } \times 40 \% \times 4 \text { months } \times ₹ 30 \text { per month } \\ & =₹ 9,600 \end{aligned}$ |
| Total Lighting charges | ₹ $1,05,600+₹ 17,600$ + ₹ $9,600=$ ₹ 132,800 |

Statement of total cost:

|  | (₹) |
| :--- | ---: |
| Staff salary | $8,00,000$ |
| Repairs to building | $3,00,000$ |
| Laundry | $1,40,000$ |
| Interior | $2,50,000$ |
| Miscellaneous Expenses | $2,00,200$ |
| Depreciation on Building (₹ 300 Lakhs $\times 80 \% \times 5 \%$ ) | $\mathbf{1 2 , 0 0 , 0 0 0}$ |
| Depreciation on Furniture \& Equipment (₹ 300 Lakhs $\times 20 \% \times 15 \%$ ) | $\mathbf{9 , 0 0 , 0 0 0}$ |
| Room attendant's wages (₹ 15 per Room Day for 43,200 Room Days) | $\mathbf{6 , 4 8 , 0 0 0}$ |
| Lighting charges | $1,32,800$ |
| Total cost | $\mathbf{4 5 , 7 1 , 0 0 0}$ |
| Add: Profit Margin (20\% on Room rent or $25 \%$ on Cost) | $11,42,750$ |
| Total Rent to be charged | $\mathbf{5 7 , 1 3 , 7 5 0}$ |

## Calculation of Room Rent per day:

Total Rent / Equivalent Full Room days = ₹ $57,13,750 / 36,000=₹ 158.72$
Room Rent during Season - ₹ 158.72
Room Rent during Off season $=₹ 158.72 \times 50 \%=₹ 79.36$
(b)

| Particulars | Noida | Patparganj |
| :--- | :---: | :---: |
| Hours worked | 36 hr. | 33.75 hr. |
| Conversion Costs | $₹ 6,084$ | $₹ 5,569$ |
| Less: Overheads | $₹ 900$ | $₹ 844$ |
|  | $(₹ 25 \times 36 \mathrm{hr})$. | $(₹ 25 \times 33.75 \mathrm{hr})$. |
| Labour Cost | $₹ 5,184$ | $₹ 4,725$ |

## (i) Finding of Normal wage rate:

Let Wage rate be ₹ R per hour, this is same for both the Noida and Patparganj factory.

Normal wage rate can be found out taking total cost of either factory.
Noida: Rowan Plan
Total Labour Cost $=$ Wages for hours worked + Bonus as per Rowan plan
₹ $5,184=$ Hours worked $\times$ Rate per hour $+\left(\frac{\text { Time saved }}{\text { Time allowed }} \times\right.$ Hours worked $\times$ Rate per hour) $)$
Or, ₹ $5,184=36 \mathrm{hr} . \times \mathrm{R}+\left(\frac{45-36}{45} \times 36 \times \mathrm{R}\right)$
Or, ₹ $5,184=36 R+7.2 R$
R
Normal wage $=36$ hrs $\times$ ₹ $120=₹ 4,320$
OR

## Patparganj: Halsey Plan

Total Labour Cost $=$ Wages for hours worked + Bonus as per Halsey plan
₹ $4,725 \quad=$ Hours worked $\times$ Rate per hour $+(50 \% \times$ Hours saved $\times$ Rate per hour $)$
₹ $4,725=33.75 \mathrm{hr} . \times R+50 \% \times(45 \mathrm{hr} .-33.75 \mathrm{hr}) \times$.
₹ $4,725=39.375 \mathrm{R}$
R = ₹ 120
Normal Wage $\quad=33.75$ hrs $\times$ ₹ $120=₹ 4,050$
(ii) Comparison of conversion costs:

| Particulars | Noida $(₹)$ | Patparganj $(₹)$ |
| :--- | :---: | :---: |
| Normal Wages $(36 \times 120)$ | 4,320 |  |
| $(33.75 \times 120)$ |  | 4,050 |
| Bonus $(7.2 \times 120)$ | 864 |  |
| $(5.625 \times 120)$ |  | 675 |
| Overhead | 900 | 844 |
|  | 6,084 | 5,569 |

5. (a) Working Notes:
(1) Calculation of Cost of Goods Sold (COGS):

COGS $=\mathrm{DM}+\mathrm{DL}+\mathrm{FOH}+\mathrm{AOH}$
COGS $=\{0.3$ COGS +0.15 COGS $+(0.10$ COGS $+₹ 3,45,000)+$ ( 0.02 COGS $+₹ 1,06,500$ ) \}
Or, COGS $=0.57$ COGS $+₹ 4,51,500$
Or COGS $=\frac{₹ 4,51,500}{0.43}=₹ 10,50,000$
(2) Calculation of Cost of Sales (COS):

COS $=$ COGS + S\&DOH
$\operatorname{COS}=\operatorname{COGS}+(0.04 \mathrm{COS}+₹ 1,02,000)$
Or COS = ₹ $10,50,000+(0.04$ COS $+₹ 1,02,000)$

$$
\text { Or, } \operatorname{COS}=\frac{₹ 11,52,000}{0.96}=₹ 12,00,000
$$

(3) Calculation of Variable Costs:

| Direct Material- | $(0.30 \times ₹ 10,50,000)$ | $₹ 3,15,000$ |
| :--- | ---: | ---: |
| Direct Labour- | $(0.15 \times ₹ 10,50,000)$ | $₹ 1,57,500$ |
| Factory Overhead- | $(0.10 \times ₹ 10,50,000)$ | $₹ 1,05,000$ |
| Administration OH- | $(0.02 \times ₹ 10,50,000)$ | $₹ 21,000$ |
| Selling \& Distribution OH | $(0.04 \times ₹ 12,00,000)$ | $₹ 48,000$ |
|  |  | $₹ 6,46,500$ |

(4) Calculation of total Fixed Costs:

| Factory Overhead | ₹ $3,45,000$ |
| :--- | ---: |
| Administration OH | ₹ $1,06,500$ |
| Selling \& Distribution OH | ₹ $1,02,000$ |
|  | ₹ $5,53,500$ |

(5) Calculation of P/V Ratio:

$$
\begin{aligned}
\text { P/V Ratio } & =\frac{\text { Contribution }}{\text { Sales }} \times 100=\frac{\text { Sales }- \text { VariableCosts }}{\text { Sales }} \times 100 \\
& =\frac{(₹ 185 \times 7,500 \text { units })-₹ 6,46,500}{₹ 185 \times 7,500 \text { units }} \times 100 \\
& =\frac{₹ 13,87,500-₹ 6,46,500}{₹ 13,87,500} \times 100=53.41 \%
\end{aligned}
$$

(i) Break-Even Sales

$$
=\frac{\text { FixedCosts }}{\mathrm{P} / \text { VRatio }}=\frac{₹ 5,53,500}{53.41 \%}=₹ 10,36,323
$$

(ii) Profit earned during the last year
(iii) Margin of Safety (\%)

$$
\begin{aligned}
& =(\text { Sales - Total Variable Costs })-\text { Total Fixed Costs } \\
& =(₹ 13,87,500-₹ 6,46,500)-₹ 5,53,500 \\
& =₹ 1,87,500 \\
& =\frac{\text { Sales -Breakevensales }}{\text { Sales }} \times 100 \\
& =\frac{₹ 13,87,500-₹ 10,36,323}{₹ 13,87,500} \times 100=25.31 \%
\end{aligned}
$$

(iv) Profit if the sales were $10 \%$ less than the actual sales:

$$
\begin{aligned}
\text { Profit } & =90 \%(₹ 13,87,500-₹ 6,46,500)-₹ 5,53,500 \\
& =₹ 1,13,400
\end{aligned}
$$

(b) SR - Standard labour Rate per Hour

AR - Actual labour rate per hour
SH - Standard Hours
AH - Actual hours
(i) Labour rate Variance $=\mathrm{AH}(\mathrm{SR}-\mathrm{AR})$

$$
\begin{aligned}
-1,53,846 & =25,641(12-A R) \\
-6 & =12-A R \\
\text { AR } & =₹ 18 \\
\text { ciency } & =\frac{S H}{A H} \times 100=105.3 \\
\mathrm{SH} & =\frac{A H \times 105.3}{100}=\frac{25,641 \times 105.3}{100} \\
\mathrm{SH} & =26,999.973 \\
\mathrm{SH} & =27,000 \text { hours }
\end{aligned}
$$

(ii) Labour Efficiency
(iii) Labour Efficiency Variance $=\mathrm{SR}(\mathrm{SH}-\mathrm{AH})$

$$
\begin{aligned}
& =12(27,000-25,641) \\
& =₹ 16,308(\mathrm{~F})
\end{aligned}
$$

(iv) Standard Labour Cost per Unit $\quad=\frac{27,000 \times 12}{9,000}=₹ 36$
(v) Actual Labour Cost Per Unit $\quad=\frac{25,641 \times 18}{9,000}=₹ 51.282$
6. (a) Journal entries are as follows:

|  |  |  | Dr. <br> (₹) | Cr. <br> (₹) |
| :---: | :---: | :---: | :---: | :---: |
| (i) | Stores Ledger Control A/c. $\qquad$ To Cost Ledger Control A/c | Dr. | 27,000 | 27,000 |
| (ii) | Work-in-Process Control A/c. $\qquad$ To Manufacturing Overhead Control A/c | Dr. | 6,000 | 6,000 |
| (iii) | Cost of Sales A/c. $\qquad$ <br> To Selling \& Dist. Overhead Control A/c | Dr. | 4,000 | 4,000 |
| (iv) | (1) Wage Control A/c. $\qquad$ To Cost Ledger Control A/c | Dr. | 8,000 | 8,000 |
|  | (2) Manufacturing Overhead Control A/C. $\qquad$ To Wages Control A/c | Dr. | 8,000 | 8,000 |
|  | OR |  |  |  |
|  | Manufacturing Overhead Control A/c. $\qquad$ To Cost Ledger Control A/C | Dr. | 8,000 | 8,000 |
| (v) | Stores Ledger Control A/c $\qquad$ To Work-in-Process Control A/c | Dr. | 9,000 | 9,000 |

*Cost Ledger Control A/c is also known as General Ledger Control A/c
(b) Difference between Cost Accounting and Management Accounting

|  | Basis | Cost Accounting | Management Accounting |
| :--- | :--- | :--- | :--- |
| (i) | Nature | It records the quantitative <br> aspect only. | It records both qualitative and <br> quantitative aspect. |
| (ii) | Objective | It records the cost of <br> producing a product and <br> providing a service. | It Provides information to <br> management for planning and <br> co-ordination. |


| (iii) | Area | It only deals with cost <br> Ascertainment. | It is wider in scope as it includes <br> financial accounting, budgeting, <br> taxation, planning etc. |
| :--- | :--- | :--- | :--- |
| (iv) | Recording of data | It uses both past and <br> present figures. | It is focused with the projection of <br> figures for future. |
| (v) | Development | Its development is related <br> to industrial revolution. | It develops in accordance to the <br> need of modern business world. |
| (vi) | Rules and Regulation | It follows certain principles <br> and procedures for <br> recording costs of different <br> products. | It does not follow any specific <br> rules and regulations. |

(c) Zero-based Budgeting: (ZBB) is an emergent form of budgeting which arises to overcome the limitations of incremental (traditional) budgeting system. Zero- based Budgeting (ZBB) is defined as 'a method of budgeting which requires each cost element to be specifically justified, although the activities to which the budget relates are being undertaken for the first time, without approval, the budget allowance is zero'.
ZBB is an activity based budgeting system where budgets are prepared for each activities rather than functional department. Justification in the form of cost benefits for the activity is required to be given. The activities are then evaluated and prioritized by the management on the basis of factors like synchronisation with organisational objectives, availability of funds, regulatory requirement etc.

ZBB is suitable for both corporate and non-corporate entities. In case of non-corporate entities like Government department, local bodies, not for profit organisations, where these entities need to justify the benefits of expenditures on social programmes like mid-day meal, installation of street lights, provision of drinking water etc.

## ZBB involves the following stages:

(i) Identification and description of Decision packages
(ii) Evaluation of Decision packages
(iii) Ranking (Prioritisation) of the Decision packages
(iv) Allocation of resources
(d) (i) Fringe benefits: These are the additional payments or facilities provided to the workers apart from their salary and direct cost-allowances like house rent, dearness and city compensatory allowances. These benefits are given in the form of overtime, extra shift duty allowance, holiday pay, pension facilities etc.

These indirect benefits stand to improve the morale, loyalty and stability of employees towards the organisation. If the amount of fringe benefit is considerably large, it may be recovered as direct charge by means of a supplementary wage or labour rate; otherwise, these may be collected as part of production overheads.
(ii) Bad debts: There is no unanimity among different authors of Cost Accounting about the treatment of bad debts. One view is that 'bad debts' should be excluded from cost. According to this view bad debts are financial losses and therefore, they should not be included in the cost of a particular job or product.
According to another view it should form part of selling and distribution overheads, especially when they arise in the normal course of trading. Therefore, bad debts should be treated in cost accounting in the same way as any other selling and distribution cost. However extra ordinarily large bad debts should not be included in cost accounts.

