## The Institute of Chartered Accountants of Nepal

## Suggested Answer of CAP-II, Cost \& Management Accounting, June 2013

## All questions are compulsory. Working notes should form part of the answer. Make assumptions wherever necessary.

1. Bridgewater Tyre Company’s budgeted unit sales for the year 2013 were:

| Bike tyres | 60,000 |
| :--- | :--- |
| Bus tyres | 12,500 |

The budgeted selling price for Bus tyres was Rs. 15,000 per tyre and for Bike tyres was Rs. 4,500 per tyre. The beginning finished goods inventories were expected to be 2,500 Bus tyres and 6,000 Bike tyres, for a total cost of Rs. 2,00,25,500, with desired ending inventories at 2,000 and 5,000 , respectively, with a total cost of Rs. $1,63,23,900$. There was no anticipated beginning or ending work-in-process inventory for either type of tyres. The standard material quantities for each type of tyre were as follows:

|  | $\underline{\text { Bus }}$ | $\underline{\text { Bike }}$ |
| :--- | :---: | :---: |
| Rubber | 35 Kgs | 15 Kgs |
| Steel Belts | 4.5 Kgs | 2.0 Kgs |

The purchase prices of rubber and steel were Rs. 150 and Rs. 100 per Kg, respectively. The desired ending inventories for rubber and steel were 60,000 and 6,000 Kgs, respectively. The estimated beginning inventories for rubber and steel were 75,000 and 7,500 Kgs respectively.

The direct labor hours required for each type of tyre were as follows:
Molding Department Finishing Department

| Bus tyre | 0.20 | 0.10 |
| :--- | :--- | :--- |
| Bike tyre | 0.10 | 0.05 |

The direct labor rate for each department is as follows:
Molding Department
Rs. 650 per hour
Finishing Department
Rs. 750 per hour

Budgeted factory overhead costs for 2013 were as follows:

| Particulars | Rs. |
| :--- | ---: |
| Indirect Material | $85,28,000$ |
| Indirect Labour | $79,40,000$ |
| Depreciation of Building and Equipment | $49,16,000$ |
| Power and Light | $63,00,000$ |
| Total |  |

Required:
Prepare each of the following budgets for the year ended 2013:
a) Sales budget
b) Production budget
c) Direct material budget
d) Direct labor budget
e) Cost of goods sold budget.

## Answer No. 1

a)

## Bridgewater Tyre Company

Sales Budget
For the year ended December 31, 2013

| Product | Unit Sales | Unit Selling Price | Total Sales |
| :--- | :--- | :---: | :---: |
|  | Volume | Rs. | Rs. |
| Bike Tyres | 60,000 | 4,500 | $27,00,00,000$ |
| Bus Tyres | $\underline{12,500}$ | 15,000 | $\underline{18,75,00,000}$ |
| Total | $\underline{72,500}$ |  | $\underline{45,75,00,000}$ |

b)

## Production Budget

For the year ended December 31, 2013

| For the year ended December 31, 2013 |  |  |
| :---: | :---: | :---: |
|  | Units |  |
|  | Bike tyres | Bus tyres |
| Sales (from sales budget) | 60,000 | 12,500 |
| Add: Desired ending inventory, Dec. 31 | 5,000 | 2,000 |
| Total | 65,000 | 14,500 |
| Less estimated beginning inventory, Jan. 1 | 6,000 | 2,500 |
| Total production | 59,000 | 12,000 |

c)

## Direct Materials Budget <br> For the year ended December 31, 2013 <br> Direct Materials <br> Total <br> Rubber (Kgs.) Steel Belts (Kgs.)

Quantities required for production:
Bike tyres:

| $59,000 \times 15$ Kgs. | $8,85,000$ | $1,18,000$ |
| :--- | ---: | ---: |

Bus tyres:

| $12,000 \times 35$ Kgs. | $4,20,000$ |  |
| :--- | ---: | ---: |
| $12,000 \times 4.5$ Kgs. |  | 54,000 |
| Total | $\underline{60,000}$ | $\underline{6,000}$ |
| ss: Estimated beginning inventory, Jan. 1 | $13,65,000$ | $1,78,000$ |
| (75,000) | $(7,500)$ |  |
| tal quantity to be purchased | $12,90,000$ | $1,70,500$ |
| it price | Rs. 150 | Rs. 100 |

Total direct materials purchased
Rs. $19,35,00,000 \quad$ Rs. $1,70,50,000$
Rs. 21,05,50,000
d)

| Direct Labor Budget <br> for the year ended December 31, 2013 |  |  |  |
| ---: | ---: | ---: | ---: |
|  | Department <br> Molding | Finishing |  |

Hours required for production:
Bike tyres:

$$
\begin{array}{r}
59,000 \times .10 \\
59,000 \times .05
\end{array}
$$

$$
5,900
$$

| 5,900 | 2,950 |
| :--- | :--- |
|  |  |
| 2,400 | $\mathbf{1 , 2 0 0}$ |
| $\mathbf{8 , 3 0 0}$ | $\mathbf{4 , 1 5 0}$ |

Hourly rate
Total direct labor cost
Rs. 650
Rs. 750
Rs. 53,95,000
Rs. 31,12,500
Rs. 85,07,500
e)

## Cost of Goods Sold Budget

 for the year ended December 31, 2013Direct materials inventory Jan. 1(W. N. 1)
Rs.
1,20,00,000
Direct materials purchases
21,05,50,000
Total direct materials available
Less: Direct materials inventory, Dec. 31 (W. N. 1)
Cost of direct materials used
22,25,50,000
96,00,000
Direct labor
21,29,50,000
Factory overhead
85,07,500
2,76,84,000

Add: Finished goods inventory, Jan. 1
Cost of goods available for sale Less: Finished goods inventory, Dec. 31
Cost of goods sold

24,91,41,500
2,00,25,500
26,91,67,000
1,63,23,900
$\underline{25,28,43,100}$

## Working notes

## W.N.: Direct material inventory (beginning)

| Rubber | 75,000 Kgs. $\times 150$ | Rs. $1,12,50,000$ |
| :--- | :---: | ---: |
| Steel belts | 7,500 Kgs. $\times 100$ | Rs. $\underline{1,20,00,000}$ |
|  |  |  |
| W.N.2 | Direct material inventory (ending) | Rs. $90,00,000$ |
| Rubber | 60,000 Kgs. $\times 150$ | $\underline{6,00,000}$ |
| Steel belts | 6,000 Kgs. $\times 100$ | $\underline{\text { Rs. } 96,00,000}$ |

2. 

a) A manufacturing company has pre-determined overhead recovery rates at $200 \%$ of the direct wages for works expense, $10 \%$ of works cost as management expenses and $20 \%$ on cost of production towards selling and distribution expenses. At the year-end it is found that works overhead stand under- absorbed to the extent of $20 \%$ of direct wages, management expenses show under-recovery of $10 \%$ of the absorbed amount and selling and distribution expenses recovery resulted in over absorption of $30 \%$ of the absorbed amount.

Direct cost and selling price of the job $\mathrm{X}, \mathrm{Y}$ and Z is given below.

|  | Job X | Job Y | Job Z |
| :--- | :---: | :---: | ---: |
| Direct materials (Rs.) | 50 | 40 | 30 |
| Direct wages (Rs.) | 30 | 25 | 20 |
| Selling price (Rs.) | 200 | 160 | 120 |

Find the profit or loss on the respective selling price both on the pre-determined cost and on the basis of full absorption of overheads.
b) PQ Limited plans to start a lodging house at a tourist center with a capacity of 32 single occupancy rooms. Cost per day has been estimated as under:

Cost per day per room
(Rs.)
When occupied:
(i) Electricity and utilities
(ii) Linen, laundry and sanitary supplies

When unoccupied:
(iii) Dusting, sweeping and cleaning

2 15

Over and above these costs, the following expenses represent the estimate of fixed charges per annum (365 days)
Staff expenses
Rs. 3,20,000
Other office expenses`
Rs. 64,000
Taxes, insurance, maintenance and depreciation
Rs. 42,320

PQ Limited defines 100\% occupancy to mean all the 32 rooms to fetch revenue for all 365 days.
You are required to answer the following, using a planning period of one year:
$(4+4+2=10)$
(a) What would be the tariff per day per room in order to reach break-even at an occupancy level of $50 \%$ ?
(b) What would be the profits, if the occupancy level reaches (i) $60 \%$ (ii) $70 \%$ and (iii) $80 \%$ respectively?
(c) What would be the profits, if the tariff per day is reduced by $10 \%$ from the answer in (a) above and the occupancy level is $100 \%$ ?

## Answer No. 2

a)

Statement of Cost of Production and Profit or Loss
Under Pre-determined Cost Basis
(Amount in Rs.)
Direct materials
Direct wages
Prime cost
Works expenses [200\% of direct wages]
Works cost
Management expenses [10\% of works cost]
Cost of production
Selling \& distribution expenses [20\% of cost of production]
Total costs
Profit (Balancing figure)
Selling price

| Job X | Job Y | Job Z |
| :---: | :---: | :---: |
| 50.00 | 40.00 | 30.00 |
| 30.00 | 25.00 | 20.00 |
| 80.00 | 65.00 | 50.00 |
| 60.00 | 50.00 | 40.00 |
| 140.00 | 115.00 | 90.00 |
| 14.00 | 11.50 | 9.00 |
| 154.00 | 126.50 | 99.00 |
| 30.80 | 25.30 | 19.80 |
| 184.80 | 151.80 | 118.80 |
| 15.20 | 8.20 | 1.20 |
| 200.00 | 160.00 | 120.00 |

Statement of Cost of Production and Profit or Loss
Under Full Absorption of Overheads Basis

Direct materials
Direct wages
Prime cost
Works expenses [220\% of direct wages]
Works cost
Management expenses [Working note 1]
Cost of production
Selling \& distribution expenses [Working note 2]
Total costs
Profit (Balancing figure)
Selling price

| Job X | Job Y | Job Z |
| :---: | :---: | :---: |
| 50.00 | 40.00 | 30.00 |
| 30.00 | 25.00 | 20.00 |
| 80.00 | 65.00 | 50.00 |
| 66.00 | 55.00 | 44.00 |
| 146.00 | 120.00 | 94.00 |
| 15.40 | 12.65 | 9.90 |
| 161.40 | 132.65 | 103.90 |
| 21.56 | 17.71 | 13.86 |
| 182.96 | 150.36 | 117.76 |
| 17.04 | 9.64 | 2.24 |
| 200.00 | 160.00 | 120.00 |

Working notes:

1. Management expenses:

Amount on pre-determined basis
Add: $10 \%$ for under absorption
Actual expenses
2. Selling \& distribution expenses:

Amount on pre-determined basis
Less: 30\% for over absorption
Actual expenses

| $\begin{gathered} \text { Job X } \\ \text { Rs. } \end{gathered}$ | $\begin{gathered} \text { Job Y } \\ \text { Rs. } \end{gathered}$ | $\begin{gathered} \text { Job Z } \\ \text { Rs. } \end{gathered}$ |
| :---: | :---: | :---: |
| 14.00 | 11.50 | 9.00 |
| 1.40 | 1.15 | 0.90 |
| 15.40 | 12.65 | 9.90 |
| Job X | Job Y | Job Z |
| Rs. | Rs. | Rs. |
| 30.80 | 25.30 | 19.80 |
| 9.24 | 7.59 | 5.94 |
| 21.56 | 17.71 | 13.86 |

b)
(a) Tariff to break-even at $50 \%$ occupancy level

Fixed cost
Expenses when unoccupied Rs. $2 \times 11,680$
Expenses when occupied Rs. $13 \times 5,840$

Tariff per day to break-even: Rs. 5,25,600/5,840 = Rs. 90
(b) Profit at various occupancy level

Contribution margin $=($ Rs. $90-$ Rs. 13 $)=$ Rs. 77
Profit= (Man-days occupied - BEP man-days) x Contribution margin
Therefore,
Profit at $60 \%$ occupancy level $=(7,008-5,840) \times$ Rs. $77=$ Rs. 89,936
Profit at $70 \%$ occupancy level $\quad=(8,176-5,840) \times$ Rs. 77 = Rs. 179,872
Profit at $80 \%$ occupancy level $=(9,344-5,840) \times$ Rs. $77=$ Rs. 269,808
(c) Contribution margin at reduced tariff $=(0.90 \times 90-13)=$ Rs. 68

Profit at $100 \%$ occupancy level $=$ Contribution- Fixed Costs
$=11680 \times$ Rs. $68-$ Rs, 426,320
= Rs. 367,920

## Working Note:

| $\frac{100 \%}{} \quad=32 \times 365$ days | $=11,680$ room-days |  |
| :--- | :--- | :--- |
| $50 \%$ occupancy | $=0.5 \times 11680$ | $=5840$ room-days |
| $60 \%$ occupancy | $=0.6 \times 11680$ | $=7008$ room days |
| $70 \%$ occupancy | $=0.7 \times 11680$ | $=8176$ room-days |
| $80 \%$ occupancy | $=0.8 \times 11680$ | $=9344$ room-days |

3. 

a) From the following information for the month of October 2012, prepare Process III cost account:

| Opening WIP in Process III | $: 1,800$ units at Rs. 27,000 |  |
| :--- | :--- | :--- |
| Transfer from Process II | $:$ | 47,700 units at Rs. 536,625 |
| Transferred to warehouse | $: 43,200$ units |  |
| Closing WIP of Process III | $: 4,500$ units |  |
| Units scrapped | $:$ | Rs. 177,840 |
| Direct material added in Process III | $:$ | Rs. 87,840 |
| Direct Wages | $:$ | Rs. 43,920 |

Degree of Completion:

|  | Opening Stock | Closing Stock | Scrap |
| :---: | :---: | :---: | :---: |
| Material | 80\% | 70\% | 100\% |
| Labour | 60\% | 50\% | 70\% |
| Overheads | 60\% | 50\% | 70\% |

The normal loss in the process was $5 \%$ of the production and scrap was sold at Rs. 6.75 per unit.
b) Shyam Enterprises operating an integral system of accounting. The following transactions incurred for the year end 2012.

Transaction
Raw material Purchased ( $40 \%$ in cash)
Material issued to production

| Amount (Rs.) |
| :---: |
| $10,00,000$ |
| $6,00,000$ |


| Wages paid (50\% Direct) | $2,00,000$ |
| :--- | ---: |
| Wages charged to production | $1,20,000$ |
| Factory Overhead paid | $1,20,000$ |
| Factory Overhead charged to Production | 110,000 |
| Selling and distribution overhead paid | 30,000 |
| Finished goods finalized at cost | $6,50,000$ |
| Sales (70\% in credit) | $11,00,000$ |
| Closing stock of finished goods | - |
| Payment received from Customer | $3,00,000$ |
| Paid to supplier | $5,00,000$ |

You are required to pass journal Entries in the books of Shyam Enterprises under integrated system of accounting for the period ended 2012.

## Answer No. 3

a)

Statement of Equivalent Production
(Process III)

|  |  |  |  | Equivalent production |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Input |  | Output |  | Material Received from Process II |  | Material added in Process III |  | Labour and overheads |  |
| Details | Quantity Units |  | Quantity units | Quantity units | \% | Quantity units | \% | Quantity units | \% |
| Op WIP | 1800 | Work on Op. WIP | 1,,800 | - | - | 360 | 20 | 720 | 40 |
| Process II <br> Transfer | 47700 | Introduced and completed during the month (Bal. fig.) | 41400 | 41,400 | 100 | 41,400 | 100 | 41,400 | 100 |
|  |  | Normal Loss (5\% of 45,000 units) | 2,250 | - | - | - | - | - | - |
|  |  | Closing WIP | 4,500 | 4,500 | 100 | 3,150 | 70 | 2,250 | 50 |
|  |  |  | 49,950 | 45,900 |  | 44,910 |  | 44,370 |  |
|  |  | Abnormal gain | -450 | -450 | 100 | -450 | 100 | -450 | 100 |
| Total | 49,520 |  | 49,500 | 45,450 |  | 44,460 |  | 43,920 |  |

## Working Note

(i) Production units
$=$ Opening units + Units transferred from Process II - Closing Units
$=1800$ units $+47,700$ units -4500 units
$=45000$ units
(ii) Abnormal gain(units) = Production-Normal Loss-Transfer to warehouse
$=45,000-(5 \%$ of 45,000$)-43,200$
$=450$

Statement of Cost

|  | Statement of Cost |  |  |
| :--- | ---: | ---: | ---: |
|  | Cost Rs. | Equivalent units | Cost per equivalent unit Rs. |
| Material Received from Process II | 536,625 |  |  |
| Less: Scrap value of normal loss <br> $(2,250$ units x Rs. 6.75) | $15,187.50$ |  |  |
|  | $\mathbf{5 2 1 , 4 3 7 . 5 0}$ | $\mathbf{4 5 , 4 5 0}$ | $\mathbf{1 1 . 4 7 2 8}$ |
| Material added in Process III | 177,840 | 44,460 | 4.0000 |

The Institute of Chartered Accountants of Nepal

Suggested Answers - Cost and Management Accounting

| Labour | 87,840 | 43,920 | CAP II Examination - June 2013 |
| :--- | ---: | ---: | ---: |
| Overheads | 43,920 | 43,920 | 2.0000 |
|  | $8,31,037.50$ |  | 1.0000 |

Statement of Apportionment of Process Cost

|  |  |  | Rs. |
| :--- | :--- | :--- | ---: |
| Opening WIP | Material From Process II |  | 27,000 |
| Completed opening WIP -1,800 <br> units | Material added in Process III | 360 units x Rs. 4=Rs. 1440 |  |
|  | Wages | 720 units x Rs. 2= Rs. 1440 |  |
|  | Overheads | 720 units x Rs. $1=$ Rs. 720 | 3,600 |
| Introduced and completed 41,400 <br> units |  | 41400 units x Rs. 18.4728 | $7,64,773$ |
| Total cost of 43,200 finished <br> goods units |  | 4,500 units x Rs. 11.4728 | $7,95,373$ |
| Closing WIP -4,500 units | Material from Process II | 3,150 units x Rs. 4 | 51,628 |
|  | Material in process III | 2,250 units x Rs.2 | 12,600 |
|  | Wages | 2,250 units x Re.1 | 4,500 |
|  | Overheads |  | 2,250 |
|  |  | 450 units x Rs. 18.4728 | $\mathbf{7 0 , 9 7 8}$ |
| Abnormal gain -450 units |  |  | 8,313 |

Process III A/c

|  | Units | Rs. | Units | Rs. |  |
| :--- | ---: | ---: | :--- | ---: | ---: |
| To Balance b/d | 1800 | 27,000 | By Normal Loss | 2250 | 15,187 |
| To Process II a/c | 47700 | $5,36,625$ | By Finished goods stock | 43200 | $7,95,373$ |
| To Direct Material |  | $1,77,840$ |  |  |  |
| To Direct Wages |  | 87,840 |  |  |  |
| To Production overheads |  | 43,920 | By Closing WIP | 4500 | 70,978 |
| To Abnormal gain | 450 | 8,313 |  | 49,950 | 881,538 |
|  | 49,950 | 881,538 |  |  |  |

b) Journal Entries in the books of Shyam Enterprises under integrated system of accounting for the period ended 2012.

Store Ledger Control A/C
To Sundry Creditors A/C To Cash/Bank A/C
(Material purchased)
$\qquad$

Work-in-Progress Control A/C
To Store Ledger Control A/C Rs.6,00,000
.............
( Material issued to production)

Rs.6,00,000
Rs.400,000
Rs.10,00,000

Rs.6,00,000

| Wages Control A/C | Rs.200,000 |  |
| :---: | :---: | :---: |
| To Cash/Bank A/C |  | Rs.200,000 |
| (Wages Paid) |  |  |
| Work-in-Progress Control A/C | Rs.1,20,000 |  |
| To Wages Control A/C |  | Rs.1,20,000 |
| (Wages charged to production) |  |  |
| ............ |  |  |
| Factory Overhead Control A/C | Rs.120,000 |  |
| To Cash/Bank A/C |  | Rs.120,000 |
| ( Factory overhead paid) |  |  |
| ............ |  |  |
| Work -in Progress Control A/C | Rs.110,000 |  |
| To Factory Overhead Control A/C |  | Rs.110,000 |
| (Factory overhead charged to production) |  |  |

Selling and Distribution Overhead Control A/C Rs.30,000
To cash/Bank A/C
Rs.30,000
(Selling/distribution overhead paid)
$\qquad$

Finished Stock Ledger Control A/C Rs.650,000
To Work-in-progress Control A/C
Rs.650,000
(Cost of finished goods transferred from work in progress)
$\qquad$

Cost of Sales A/C Rs.6,80,000
To Finished Stock Ledger Control A/C Rs.650,000
To Selling and Distribution control A/C
Rs.30,000

Sundry Debtors Account
Rs.770,000
Cash/Bank A/C
Rs.330,000
To Sales Control Account
Rs.11,00,000
(Finished stock sold)

Cash/Bank Account
To Sundry Debtors A/C
( Amount received from customer)
$\qquad$
Sundry Creditors A/C
Rs.500,000
To Cash/Bank A/C
Rs.500,000
( Payment made to creditors)
$\qquad$
Rs.300,000
Rs.300,000 .
4.
a) The cost structure of an article the selling price of which is Rs. 45,000 is as follows: Direct Material 50\%
Direct Labour 20\%
Overheads 30\%

An increase of $15 \%$ in the cost of direct materials and of $25 \%$ in the cost of direct labour is anticipated. These increased costs in relation to the present selling price would cause a $25 \%$ decrease in the amount of present profit per article.
Required:
i) Prepare a statement of profit per article at present, and
ii) Calculate the revised selling price to produce the same percentage of profit to sales as before.
b) Both direct and indirect labor of a department in a factory is entitled to production bonus in accordance with a Group Incentive Scheme, the outlines of which are as follows:
i) For any production in excess of the standard rate fixed at 10,000 tons per month (of 25 days) a general incentive of Rs. 10 per ton is paid in aggregate. The total amount payable to each separate group is determined on the basis of an assumed percentage of such excess production being contributed by it, namely @ 70\% by direct labor, @ 10\% by inspection staff, @ 12\% by maintenance staff and @ $8 \%$ by supervisory staff.
ii) If the excess production is more than $20 \%$ above the standard, direct labor also gets a special bonus @ Rs. 5 per ton for all production in excess of $120 \%$ of standard.
iii) Inspection staff is penalized @ Rs. 20 per ton for rejection by customer in excess of $10 \%$ of production
iv) Maintenance staff is penalized @ Rs. 20 per hour of breakdown.

From the following particulars for a month work out the production bonus earned by each group:

| (i) | Actual working days | $: 20$ |
| :--- | :--- | :--- |
| (ii) | Production | $: 11,000$ tons |
| (iii) | Rejection by customers | $: 200$ tons |
| (iv) | Machine breakdown | $: 40$ hours |

c) Discuss briefly the principles to be followed while taking credit for profit on incomplete contracts.

## Answer No. 4

a)

Let the total cost of the article be "X".
Now,

|  | Present condition | Revised condition |
| :--- | :---: | :---: |
| Direct Material | 0.5 x | 0.575 x |
| Direct Labour | 0.2 x | 0.250 x |
| Overheads | $\underline{0.3 \mathrm{x}}$ | $\underline{0.300 \mathrm{x}}$ |
| Total | $\underline{1.0 \mathrm{x}}$ | $\underline{1.125 \mathrm{x}}$ |
| Selling Price | Rs. 45,000 | Rs. 45,000 |
| Profit | (Rs. $45,000-\mathrm{x})$ | (Rs. $45,000-1.125 \mathrm{x}$ ) |

From the above exercise, following equation can be made:

$$
(\text { Rs. } 45,000-x)-(\text { Rs. } 45,000-1.125 x)=25 \% \text { of (Rs. } 45,000-x)
$$

Or, $\quad-\mathrm{x}+1.125 \mathrm{x}=$ Rs. $11,250-0.25 \mathrm{x}$
Or, $\quad 0.375 x=$ Rs. 11,250
Or, $\quad x=$ Rs. 30,000.
Statement of profit per article under present condition

|  |  | Rs. |
| :--- | :--- | ---: |
| Direct Material | Rs. $30,000 \times 0.5$ | 15,000 |
| Direct Labour | Rs. $30,000 \times 0.2$ | 6,000 |
| Overheads | Rs. $30,000 \times 0.3$ | 9,000 |
| $\quad$Total Cost |  | 30,000 |
| Profit (balancing figure) |  | 15,000 |
| $\quad$ Selling Price |  | 45,000 |
| Percentage of profit to cost |  | $50 \%$ |
| Percentage of profit to selling price | [Rs. $15,000 /$ Rs. $30,000 \times 100$ ] | $33.33 \%$ |

Statement of profit per article under revised condition

Direct Material<br>Direct Labour<br>Total Cost<br>Profit (50\% of cost or $33.33 \%$ of selling price) Selling Price

Rs. $30,000 \times 0.575$
Rs. $30,000 \times 0.250$
Rs.

Rs. $30,000 \times 0.300$
17,250
7,500

9,000
33,750
16,875
50,625
b)
(i) No. of working days during month : 20
(ii) Standard production for 20 days @ 10,000 tons per month of 25 days

$$
=10,000 \times 20 / 25=8,000 \text { tons }
$$

(iii) Actual production during the month $=11,000$ tons
(iv) Excess production during the month $=11,000-8,000=3,000$ ton
(v) Excess production above 20\% of standard : 3,000-20\% of 8,000

$$
=3,000-1,600=1,400 \text { tons }
$$

Statement showing Bonus earned by each category of staff:

|  | Category | $\begin{aligned} & \text { General Incentive @ Rs. } 10 \\ & \text { per ton } \\ & \hline \end{aligned}$ |  |  | Special Incentive @ Rs. 5 per ton |  | Penalty | Bonus earned |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \% | Tons | Amount | Tons | Amount | Rs | Rs |
| (a) | Direct labor | 70 | 2,100 | 21,000 | 1,400 | 7,000 | - | 28,000 |
| (b) | Inspection Staff | 10 | 300 | 3,000 | - | - | -* | 3,000 |
| (c) | Maintenance staff | 12 | 360 | 3,600 | - | - | 800** | 2,800 |
| (d) | Supervisory staff | 8 | 240 | 2,400 | - | - | - | 2,400 |
|  | Total | 100 | 3,000 | 30,000 | 1,400 | 7,000 | 800 | 36,200 |

* Penalty for rejection: Not applicable (Actual rejection is less than allowed level)
** Penalty for machine breakdown for 40 hours @ Rs. 20 per hour.


## C)

Under Contract Accounting it may be noticed that certain contracts are completed, while others are still in progress at the end of a financial year. These incomplete contracts may require a few more years for their completion. The figures of profit made (the excess of credit over the debit items in a contract) on completed contracts can be safely taken to the credit of Profit and Loss Account, but this practice is not being followed in the case of incomplete contracts.

In the case of incomplete contracts the entire profit is not being credited to Profit and Loss Account because some provision is to be made for meeting contingencies and unforeseen losses. There are no hard and fast rules regarding the calculation of figure of profit to be taken to the credit of profit and loss account. However, the following principles may be followed:-
i. Profit should be considered in respect of work certified and uncertified work should be valued at cost.
ii. If the amount of work certified is less than 1/4th of the contract price, no profit should be taken to Profit and Loss Account. The entire amount in such contracts should be kept as reserve for meeting out contingencies.
iii. If the amount of work certified is $1 / 4$ th or more but less than $1 / 2$ of the contract price, then $1 / 3$ rd of the profit disclosed as reduced by the percentage of cash received from the contractee should be taken to the Profit and Loss Account. The balance should be allowed to remain as a reserve.
iv. If the amount of work certified is $1 / 2$ or more of the contract price, then $2 / 3$ rd of the profit disclosed as reduced by the percentage of cash received from the contractee, should be taken to the Profit and Loss Account. The balance should be treated as reserve.
v. If the contract is near completion, the total cost of completing the contract may be estimated if possible. By deducting the total estimated cost from the contract price, the estimated total profit of the contract should be calculated. The proportion of total estimated profit on cash basis, which the work certified bears to the total contract price should be credited to profit and loss account.
vi. The entire loss, if any, should be transferred to the Profit and Loss Account.
5. Distinguish between:
a) Cost Centre and Cost Unit
b) Job Costing and Batch Costing
c) Forecast and Budget
d) Opportunity Cost and Sunk Cost

Answer No. 5
a) Cost Centre and Cost Unit

Cost centre is defined as a location, person or an item of equipment (or group of these) for which cost may be ascertained and used for the purpose of cost control. Cost centres are of two types, viz. Personal and Impersonal Cost Centre. A personal cost centre consists of a person or group of persons and an impersonal cost centre consists of a location or an item of equipment (or group of these).

Cost unit is a unit of product, service or time (or combination of these) in relation to which costs may be ascertained or expressed. We may, for instance, determine the cost per tonne of steel, per tonne kilometre of a transport service or cost per machine hour. Sometimes, a single order or contract constitutes a cost unit. A batch which consists of a group of identical items and maintains its identity through one or more stages of production may also be considered as a cost unit.
b) Job Costing and Batch Costing

Job Costing :The system of job costing is used where production is not highly repetitive and in addition consists of distinct jobs so that the material and labor costs can be identified by order number. This method of costing is very common in commercial foundries and drop forging shops and in plants making specialized industrial equipment. In all these cases, an account is opened for each job and all appropriate expenditure is charged thereto.

Batch Costing: This method is employed where orders or jobs are arranged in different batches after taking into account the convenience of producing articles. The unit of cost is a batch or a group of identical products instead of a single job order or contract. This method is particularly suitable for general engineering factories which produce components in convenient economic batches and pharmaceutical industries.
C) Difference between Forecast and Budget

| Forecast | Budget |  |
| :---: | :---: | :---: | :---: |
| i.Forecast is merely an estimate of what is likely to <br> happen. It is a statement of probable events which <br> are likely to happen under anticipated conditions <br> during a specified period of time. | i.Budget shows the policy and programme to be <br> followed in a period under planned conditions. <br> A budget is a tool of control since it represents <br> actions which can be shaped according to will so <br> that it can be suited to the conditions which may |  |
| ii.Forecasts, being statements of future events, do not <br> connote any sense of control. | or may not happen. |  |
| iii.Forecasting is a preliminary step for budgeting. It <br> ends with the forecast of likely events. | iii.It begins when forecasting ends. Forecasts are <br> converted into budget. |  |
| iv.Forecasts are wider in scope and it can be made in <br> those spheres, also where budgets cannot interfere. | iv.Budgets have limited scope. It can be made of <br> phenomenon capable of being expressed <br> quantitatively. |  |

## d) Opportunity Cost and Sunk Cost

Opportunity cost refers to the value of sacrifice made or benefit of opportunity forgone in accepting an alternative course of action. For example, a firm financing its expansion project by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion project.

Historical costs incurred in the past are known as sunk costs. They play no role in decision making in the current period. For example, in the case of a decision relating to the replacement of a machine, the written down value of the existing machine is a sunk cost and therefore not considered.
6. Write short notes on:
a) Budgetary control
b) Circumstances under which cost audit is ordered
c) Advantages of ABC analysis
d) Objectives of Uniform Costing

## Answer No. 6

a) Budgetary control is a methodical control of an organization's operations through establishments of standards and targets regarding income and expenditure and a continuous monitoring and adjustment of performance against them. Budgetary control is the establishment of budgets relating the responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgeted results, either to secure by individual action the objectives of that policy or to provide a firm basis of its revision.

The objectives of budgetary control are:

- Definition of Goals: Portraying with precision, the overall aims of the business and determining targets of performance for each section or department of the business.
- Defining Responsibilities: Laying down the responsibilities of each individual so that everyone knows what is expected of him and how he will be judged.
- Basis for Performance Evaluation: Providing basis for the comparison of actual performance with the predetermined targets and investigation of deviation, if any, of actual performance and expenses from the budgeted figures. It helps to take timely corrective measures.
- Optimum use of Resources: Ensuring the best use of all available resources to maximize profit or production, subject to the limiting factors.
- Co-ordination: Coordinating various activities of the business and centralizing control, and also facilitating for the management to decentralize responsibility and delegate authority.
- Planned action: Engendering a spirit of careful forethought, assessment of what is possible and an attempt at it. It leads to dynamism without recklessness. It also helps to draw up long range plans with a fair measure of accuracy.
- Basis for policy: Providing a basis for revision of current and future policies.


## Disadvantages / Limitation

- Estimates: Budgets may or may not be true, as they are based on estimates. The assumptions about future events may or may not actually happen.
- Rigidity: Budgets are considered as rigid document. Too much emphasis on budgets may affect day-to-day operations and ignores the dynamic state of organizational functioning.
- False Sense of Security: Mere budgeting cannot lead to profitability. Budgets cannot beexecuted automatically. It may create a false sense of security that everything has been taken care of in the budgets.
- Lack of co-ordination: Staff co-operation is usually not available during budgetary control exercise.
- Time and Cost: The introduction and implementation of the budgetary control system may be expensive.
b) Discuss the circumstances under which a Cost Audit is ordered along with the purpose of Cost Audit.


## Circumstances under which Cost Audit is ordered

i. Price Fixation - The need for fixation of retention price in case of materials of national importance like steel, cement etc., may cause a necessity for cost audit.
ii. Cost variation within an industry: Cost audit may be necessary to find reasons for such differences.
iii. Inefficient Management - Where a factory is run inefficiently and uneconomically, institution of cost audit may be necessary.
iv. Tax assessment - Where a duty or tax is levied on products based on cost of production, the levying authorities may ask for cost audit to determine the correct cost of production.
v. Trade disputes: cost audit may be useful in settlement of trade disputes about claim for higher wages, incentives etc.

## Purposes of Cost Audit

i. Protective purpose: To examine that there is no undue wastage or losses and the costing system brings out the correct cost of production or processing.
ii. Constructive purpose - Cost Audit provides information to management useful in regulating production, choosing economical methods of operation and reducing operations cost.
c) Advantages of ABC analysis

Followings are the advantages of ABC analysis system:
(i) It ensures that, without there being any danger of interruption of production for want of materials or stores, minimum investment will be made in inventories of stocks of materials or stocks to be carried.
(ii) The cost of placing orders, receiving goods and maintaining stocks is minimized especially if the system is coupled with the determination of proper economic order quantities.
(iii) Management time is saved since attention need be paid only to some of the items rather than all the items as would be the case if the ABC system was not in operation.
(iv) With the introduction of the ABC system much of the work connected with purchases can be systematized on a routine basis to be handled by subordinate staff.
d) Objectives of Uniform Costing
(i) To facilitate the comparison of costs and performance of different units in the same industry; it provides objective basis.
(ii) To eliminate unhealthy competition among the different units of an industry.
(iii) To improve production capacity level and labour efficiency by comparing the production costs of different units with each other.
(iv) To provide relevant cost information or data to the government for fixing and regulating prices of the products.
(v) To bring standardization and uniformity in the operation of participating units.
(vi) To reduce production, administration, selling \& distribution costs, and to exercise control on fixed costs.

