**BIYANI INSTITUTE OF SCIENCE AND MANAGEMENT**

**MBA II Sem**

**MODEL ANSWER PAPER-2018**

**COST ACCOUNTING**

**“SECTION A”**

Q.1 The Standard Metal Co. Ltd. : manufactures, a single product. The standard of which is as follows:

Material X 60% at Rs. 20

Material Y 40% at Rs. 10

Normal loss in production is 20% of input. Due to shortage of material X, the standard mix was charged. Actual results for March, 2015 were as follows :-

Material X - 210 kgs. at Rs. 20 = 4,200

Material Y - 190 kgs. at Rs. 9 = 1,710

Input 400 kgs. ` 5,910

Loss 70 kgs.

Output 330 kgs.

Calculate Material Variances.

**Ans.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **TABLE SHOWING COST** | | | | | | |
| **Material** | **Standard** | | | **Actual** | | |
|  | **Qty.** | **Price** | **Total** | **Qty.** | **Price** | **Total** |
| **X** | **240** | **20** | **4800** | **210** | **20** | **4200** |
| **Y** | **160** | **10** | **1600** | **190** | **9** | **1710** |
| **Total** | **400** |  | **6400** | **400** |  | **5910** |
|  | |  |  |  |  | |
| Standard output = 320 kgs **Revised Table** Actual Output = 330 kgs | | | | | | |
| **Material** | **Standard** | | | **Actual** | | |
|  | **Qty.** | **Price** | **Total** | **Qty.** | **Price** | **Total** |
| **X** | **247.5** | **20** | **4950** | **210** | **20** | **4200** |
| **Y** | **165** | **10** | **1650** | **190** | **9** | **1710** |
| **Total** | **412.5** |  | **6600** | **400** |  | **5910** |
|  |  |  |  |  |  |  |
| **Since, SO = AO,** that is why we have done SQ for AQ which is shown in revised table above | | | | | | |

Ex- 240/320 × 330 = 247.5

Material Variances (on the basis of revised table)

1. Material Cost variance = Total Standard Cost – Total Actual Cost

= Rs.6600-5910

= Rs. 690 (F)

2. Material Price variance = (Standard Price- Actual Price) Actual Quantity

For Material X = (20-20)210 = 0

For Material Y = (10-9)190 = 190(F)

TOTAL = 190(F)

3. Material Usage variance = (Standard Quantity- Actual Quantity) Standard Price

For Material X = [(247.5) – (210)]20 = 750(F)

For Material Y = (10-9)190 = 250(A)

TOTAL = 500(F)

4. Material Sub-Usage variance = (SQ- Revised Standard Quantity)Standard Price

For Material X = [(247.5) – (240)]20 = 150(F)

For Material Y = (165-160)10 = 50(F)

TOTAL = 200(F)

* **Revised Standard Quantity = SQ/TSQ × Total Actual Quantity**

For Material X = 247.5/412.5 × 400 =240

For Material Y = 165/412.5 × 400 =160

5. Material Mix Variance = (RSQ-AQ) Standard Price

For Material X = (240-210)20 =600(F)

For Material Y = (160-190)10 =300(A)

TOTAL =300(F)

6. Material Yield Variance = Standard Cost per unit(AQ-RSQ)

= 20(330-320)

= 200(F)

Standard Cost Per unit = Total Standard Cost/Standard Output

= 6600/330

=Rs. 20 per unit

Revised Standard Output = Standard Output/TSQ ×TAQ

= 330/412.5 × 400

= 320

**Verification**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Material** | **Material Cost Variance (690F)** | | | **(500F) Material Usage Variance** | | |
|  | **MPV** | **MUV** | **TOTAL** | **MMV** | **MSUV** | **TOTAL** |
| **X** | **0** | **750(F)** | **750(F)** | **600(F)** | **150(F0** | **750(F)** |
| **Y** | **190(F)** | **250(A)** | **60(A)** | **300(A)** | **50(F)** | **250(A)** |
| **Total** | **190(F)** | **500(F)** | **690(F)** | **300(F)** | **200(F)** | **500(F)** |

**Hence , Verified.**

We know, MCV = MPV+MUV

MUV = MMV+MSUV

MSUV=MYV

From above table all these are verified.

Q.2 The distribution summary of overheads of a factory’s different departments is as follows:

**Production Departments Service Departments**

X ` 40,000 A ` 8,000

Y ` 64,000 B ` 32,000

C ` 16,000

A technical announcement for the apportionment of the cost of the service departments shows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Departments** | **Production Departments** | | **Service Departments** | | |
| **X** | **Y** | **A** | **B** | **C** |
| A  B  C | 30%  40%  30% | 50%  30%  30% | -  20%  30% | 10%  -  10% | 10%  10%  - |

You are required to show the total overheads chargeable to the production departments by using step ladder method.

**Ans.** Table showing apportionment of overhead of service department to production

**(Step Ladder Method)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Particulars** | **Total** | **Production Deptt.** | | **Service Deptt.** | | |
| **X** | **Y** | **A** | **B** | **C** |
| Overhead | 160000 | 40000 | 64000 | 8000 | 32000 | 16000 |
| Apportionment of Overhead of Deptt. B (4:3:2:1) |  | 12800 | 9600 | 6400 | -32000 | 3200 |
| **TOTAL** | **160000** | **52800** | **73600** | **14400** | **-** | **19200** |
| Apportionment of Overhead of Deptt. C (3:3:3) |  | 6400 | 6400 | 6400 | - | -19200 |
| **TOTAL** | **160000** | **59200** | **80000** | **20800** | **-** | **-** |
| Apportionment of Overhead of Deptt. C (3:5) |  | 7800 | 13000 | -20800 | - | - |
| **TOTAL** | **160000** | **67000** | **93000** | **-** | **-** | **-** |

Table showing service rendered and received from other department:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Production Deptt.** | | **Service Deptt.** | | | **Total** |
| **X** | **Y** | **A** | **B** | **C** |
| A | 2400 | 4000 | - | 8000 | 800 | 1600 |
| B | 12800 | 9600 | 6400 | - | 3200 | 9600 |
| C | 4800 | 4800 | 4800 | 1600 | - | 6400 |
| Total services rendered from other department | | | 11200 | 2400 | 4000 | 17600 |

**Table showing ranking of the service department for distribution of overhead:**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Balance** | **Ranking** |
| A= Services Rendered - Services Received | (1600-11200) | -9600 | 3 |
| B= Services Rendered - Services Received | (9600-2400) | 7200 | 1 |
| C= Services Rendered - Services Received | 6400-4000 | 2400 | 2 |

As per the rank overhead of services department B is distributed just then overhead of service department C then overhead of service department is distributed to production department.

Ratio of apportionment of overhead of services department:

B = 4:3:2:1

C = 3:3:3

A = 3:5

**Q.3** The Fancy Toys Co. are manufactures of two types of toy, A and B. The manufacturing cost for the year ended 31st March , 2015 were as follows:-

Rs.

Direct Material 2,00,000

Direct Wages 1,12,000

Production Overheads 48,000

**3,60,000**

There was no work - in- progress at the beginning or at the end of the year. It is ascertained that:-

1. Direct material in type A costs twice as much as direct material in type B.
2. The Direct Wages for type B were 60% of those for type A.
3. Production Overhead was 30 paisa, the same per toy of A and B types.
4. Administration overhead for each grade was 200% of direct labour.
5. Selling Expenses was 25 paisa per toy for each type of toy.
6. Production during the year was :

Type A – 40,000 toys of which 36,000 were sold.

Type B – 1,20,000 toys of which 1,00,000 were sold.

1. Selling prices were Rs. 7 per toy for type A and Rs. 5 per toy for type B.

Prepare a statement showing that the total cost per toy for each type of toy and the profit made on each type of toy.

**Ans.**

Output A: 40,000 Output B: 1,20,000

**Table showing total cost per unit and profit made on each type of Toy**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Particulars** | **Total** | **Toy A** | | **Toy B** | |
| **Total** | **Per Unit** | **Total** | **Per Unit** |
| Direct Material (80:120) | 200000 | 80000 | 2 | 120000 | 1 |
| Direct Labour | 112000 | 40000 | 1 | 72000 | 0.6 |
| **Prime Cost** | 312000 | 120000 | 3 | 192000 | 1.6 |
| Add: Production Overhead @ 0.30 | 48000 | 12000 | 0.3 | 36000 | 0.3 |
| **Works Cost** | 360000 | 132000 | 3.3 | 228000 | 1.9 |
| Add: Administrative Overheads | 224000 | 80000 | 2 | 144000 | 1.2 |
| **Cost of Production** | 584000 | 212000 | 5.3 | 372000 | 3.1 |
| Less: Closing Stock | 83200 | 21200 | - | 62000 | - |
| **Cost of Goods Sold** | 500800 | 190800 | 5.3 | 310000 | 3.1 |
| Add: Selling Expenses @ 0.25 | 34000 | 9000 | 0.25 | 25000 | 0.25 |
| **Cost of Sales** | 534800 | 199800 | 5.55 | 335000 | 3.35 |
| Profit | 217200 | 52200 | 1.45 | 165000 | 1.65 |
| **Sales** | 752000 | 252000 | 7 | 500000 | 5 |

**Ratio of Material and Labour between Toy A and B**

**A B**

Material 2 : 1

Labour 10 : 6

**Total Material and Labour for A and B**

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **A** | **B** | **Total** |
| Ratio of Material | 2 | 1 |  |
| No. of Unit | 40000 | 120000 |  |
| Total Material Required | 80000 | 120000 | 200000 |
| Ratio of Labour | 10 | 6 |  |
| Required | 400000 | 720000 | 1120000 |

**Apportionment of Material for A and B**

A = 200000/200000 x 80000 = 80000 `

B = 200000/200000 x 120000 = 120000 `

**Apportionment of Wages for A and B**

A = 112000/1120000 x 400000 = 40000 `

B = 112000/1120000 x 720000 = 72000 `

**Production Overhead**

A = 0.30 x 40000 = 12000 `

B = 0.30 x 120000 = 36000 `

**Administration Overhead**

A = 200% of 40000 = 80000 `

B = 200% of 72000 = 144000 `

**Selling Overhead**

A = 0.25 x 36000 = 9000 `

B = 0.25 x 100000 = 25000 `

Q.4 What do you mean by Cash Budget? How it is beneficial for management?

**Ans.** **Cash Budget**: A cash budget is an estimation of the cash inflows and outflows for a business over a specific period of time, and this budget is used to assess whether the entity has sufficient cash to operate. Companies use sales and production [forecasts](https://www.investopedia.com/terms/f/forecasting.asp)to create a cash budget, along with assumptions about necessary spending and accounts receivable. If a company does not have enough [liquidity](https://www.investopedia.com/terms/l/liquidity.asp) to operate, it must raise more capital by issuing stock or by taking on debt.In other words we can say that a cash budget is a finance tool geared toward limiting a company's expenditures to the amount of cash it actually has available.

**Benefits for Management:**

* It helps the management to concentrate their attention on significant matters that is not proceeding according to plan.
* It helps to improve communication, better understanding and harmonious relationship among the employees.
* It helps to coordinate the activities of the entire department in an organization.
* It helps the management to think ahead and devise effective and efficient ways of handling the resources.
* It helps in minimizing the cost and profit maximization.
* A cash budget also provides the benefit of forcing you to think critically about your company's financial situation and make realistic predictions.
* A cash budget can help to prepare you financially for seasonal fluctuations in sales and expenditures.
* A cash budget provides you with a basis for comparing your predictions and assumptions with actual events as they unfold.

**“SECTION B”**

Q.1 Following are the budgeted expenses for a factory operation at 70% level of activity with 1,400 hours:

Variable 2800

Semi-variable 3200

Fixed 4000

The semi-variable expenses go up by 15% between 80 and 90 percent level of activity, and by 20% above 90 percent activity. Prepare a flexible budget for 80, 90 and 100 percent level of activity, and calculate recovery rate per hour.

**Ans.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Flexible Budget** | | | | |
| Level of Activity | 70% | 80% | 90% | 100% |
| Budgeted Hours | 1400 | 1600 | 1800 | 2000 |
| ` | ` | ` | ` |
| Variable Expenses | 2800 | 3200 | 3600 | 4000 |
| Semi-variable Expenses | 3200 | 3200 | 3680 | 3840 |
| Fixed Expenses | 4000 | 4000 | 4000 | 4000 |
| **Total Cost** | 10000 | 10400 | 11280 | 11840 |
| **Recovery Rate per Hour** | 7.143 | 6.5 | 6.267 | 5.92 |
| (Total Cost/Budgeted Hours) | (10000/1400) | (10000/1600) | (11280/1800) | (11840/2000) |

**Working Note:**

1. A semi-variable expense between 80% and 90% of activity is: 3200 + 15% of 3200 = 3680.
2. Semi-variable expenses above 90% level of activity is: 3200 + 20% of 3200 = 3840.