

**COST AND MANAGEMENT ACCOUNTING**  
**STANDARD COSTING**  
**CA IPCC/ INTER**

**MATERIALS:**

**PROBLEM:1.**

One kg of the product 'K' requires two chemicals namely A and B. The following are the details of the product 'K' for the month of June.

- (a) Standard mix of Chemical A, 50% and Chemical B, 50%
- (b) Standard price per kg of Chemical A, Rs. 12 and Chemical B, Rs. 15
- (c) Actual input of Chemical B, 70 Kgs
- (d) Actual price per kg of Chemical A, Rs. 15 and Chemical B, Rs.20
- (e) Standard normal loss, 10 per cent of total output
- (f) Total Material cost variance Rs. 650 (adverse)
- (g) Total Material yield variance Rs. 135 (adverse)
- (h) Actual output, 90 kgs

You are required to calculate: (i) Material mix variance (total) (ii) Material usage variance (total), (iii) Material price variance (total), (iv) Actual loss of actual input, (v) Actual input of chemical A.

**Solution:**

We have to fill in the following table with the information given in the problem.

	<b>SQ × SP (1)</b>	<b>RSQ × SP (2)</b>	<b>AQ × SP (3)</b>	<b>AQ × AP (4)</b>
A	$X/2 \times 12$	$? \times 12$	$? \times 12$	$? \times 15$
B	$X/2 \times 15$	$? \times 15$	$70 \times 15$	$70 \times 20$
	?	?	?	?

Let the actual input be 100 Kg. The output expected will be 90 kg as the normal loss is 10% of input. The input of Chemical A & B will be 50% each (as per the problem). So the standard cost will be –

$$= 50 \times 12 + 50 \times 15 = \text{Rs. } 1,350.$$

Material cost variance is given as Rs. 650 (Adverse). That means actual cost is Rs. 650 more than standard cost of Rs. 1,350.

So column 4 i.e. (AQ × AP) will be (1350 + 650) = Rs. 2000

Solving for column 4, we can find out actual quantity of A

$$X \times 15 + 70 \times 20 = 2000$$

$$15 X \times 1400 = 2000$$

$$X = 600 \div 15 = 40 \text{ Kgs.}$$

Now the Table will be as under –

<b>Chemicals</b>	<b>SQ × SP (1)</b>	<b>RSQ × SP (2)</b>	<b>AQ × SP (3)</b>	<b>AQ × AP (4)</b>
A	$50 \times 12 = 600$	$55 \times 12 = 660$	$40 \times 12 = 480$	$40 \times 15 = 600$
B	$50 \times 15 = 750$	$55 \times 15 = 825$	$70 \times 15 = 1050$	$70 \times 20 = 1400$
Total	1350	1485	1530	2000

∴ The actual total quantity will be  $40 + 70 = 110$  So RSQ will be  $A = 0.50 \times 110 = 55$ ,  $B = 0.50 \times 110 = 55$ .

(1)	–	Material	Yield	SP (SQ - RSQ)	1350 – 1485	135 A
(2)		Variance				
(2)	–	Material	Mix	SP (RSQ - AQ)	1485 - 1530	45A
(3)		Variance				
(1)	–	Material	Usage	SP (SQ - AQ)	1350 – 1530	180A
(3)		Variance				
(3)	–	Material	Price	AQ (SP - AP)	1530 – 2000	470A
(4)		Variance				
(1)	–	Material	Cost	(SQ × SP) - (AQ × AP)	1350 - 2000	650A
(4)		Variance				

## **FIXED OVERHEAD VARIANCE:**

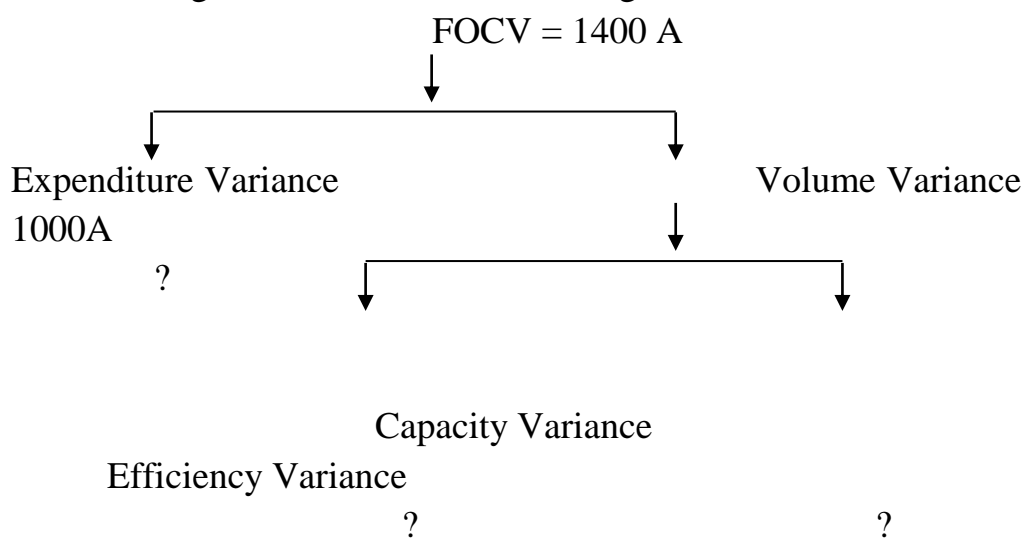
### **PROBLEM: 2.**

A cost accountant of a company was given the following information regarding the overheads for March

- (a) Overhead cost variance Rs.1400 (Adverse)
- (b) Overheads volume variance Rs.1000 (Adverse)
- (c) Budgeted hours for March, 1200 hours
- (d) Budgeted overhead for March Rs. 6000
- (e) Actual rate of recovery of overheads Rs.8 per hour

You are required to assist him in computing the following for the month of March

- (a) Overheads Expenditure Variance, (b) Actual overheads incurred
- (c) Actual hours for Actual production, (d) Overheads Capacity variance
- (e) Overheads Efficiency Variance, (f) Standard hours for Actual production

**Solution:****Step 1:** Fill the following chart with the information given

Fixed Overhead Cost Variance = Expenditure Variance + Volume Variance

$$1400 \text{ A} = ? + 1000 \text{ A}$$

$$\text{Expenditure Variance} = 1400 - 1000 = 400 \text{ A}$$

$$\text{Standard Rate per Hour} = \text{BFOH} \div \text{BH} = 6000 \div 1200 = \text{Rs. } 5$$

Actual Overheads are Rs.400 more than budgets =  $6000 + 400 = \text{Rs. } 6400$

$$\text{Actual hours worked} = \text{Actual Overhead} \div \text{Actual Rate} = 6400 \div 8 = 800 \text{ Hrs}$$

Budgeted Hrs are 1200 and Actual Hours 800.

$$\text{Capacity variance will be } (\text{AH} - \text{BH}) \text{ BR} = (800 - 1200) 5 = 2000 \text{ A}$$

$$\text{Volume variance} = \text{Capacity Variance} + \text{Efficiency Variance}$$

$$1000 \text{ A} = 2000 \text{ A} + ?$$

$$\text{Efficiency Variance} = 1000 \text{ F}$$

Standard Hours for actual production can be calculated using this formula

$$(\text{SH} - \text{AHW}) \text{ SR} = (\text{SH} - 800) 5 = 1000$$

$$\text{Standard Hours} = 1000 \text{ Hrs}$$

### Summary

- (a) Overheads Expenditure Variance – Rs.400 A
- (b) Actual overheads incurred – Rs.6400
- (c) Actual hours for Actual production – 800 Hrs
- (d) Overheads Capacity variance – Rs.2000 A
- (e) Overheads Efficiency Variance – Rs.1000 F
- (f) Standard hours for Actual production - 1000 Hrs

### LABOUR:

#### PROBLEM:3.

The following information relates to labour of x Ltd.

Type of Labour	Skilled	Semi Skilled	Unskilled	Total
No. of workers in standard gang	4	3	2	9
Standard rate per hour (Rs)	6	3	1	-
Number of workers in actual gang				
Actual rate per hour (Rs.)	7	2	2	-

In a 40 hours week, the gang produced 270 standard hours.

The actual number of semi-skilled workers is two times the actual number of unskilled workers. The rate variance of semi-skilled workers is Rs.160 (F).

Find the following:

- (i) The number of workers in each category
- (ii) Total gang variance

(iii) Total Sub-efficiency variance

(iv) Total labour rate variance

(v) Total labour cost variance

### COMPREHENSIVE PROBLEM:

#### PROBLEM:4.

Standard cost for a product as under:

Labour = Rs. 18 / hr.	Budgeted time	= 40 hr.
VOH = Rs. 5 / hr.	Standard Output	= 20 Units/hr.
FOH = Rs.25/hr.	Actual hours Paid	= 40
	Idle time	= 4 hrs.

Actual production	= 850 units
Actual Wages	= Rs.740/-
Actual Fixed Overheads	= Rs.1,100
Variable Overheads	= Rs.220/-

#### PROBLEM:5

Standards		Actual	
Material	2.3 kg x 4	Production	20,000 units
Labour	6 hrs. x 3	Material	46800 kg. x 4.20

Fac. OH	6 hrs. x 1.5	Labour	124000 x 3.30
BH	1,00,000	Idle time	2000 hrs.
FOH	Rs.50,000	VOH	Rs.1,22,000
		FOH	Rs. 53,000

**PROBLEM:6. Compute the all variance.**

Your assistant provides the following information about sales and cost for June 2010.

Sales	Budgeted units	Sales Value	Actual Units	Sales Value
Product A	250	Rs. 10,000	280	Rs.10,800
Product B	200	6,000	190	5,500
Product C	150	<u>3,000</u>	180	<u>3,500</u>
		<u>19,000</u> _____		<u>19,800</u>

<b>Product</b>	<b>Standard Selling price per unit</b>	<b>Standard Product Cost per unit</b>
A	Rs.40	Rs.31
B	30	25
C	20	15

<b>Labour:</b>	
Standard Labour cost per hour	Rs. 0.90
Budgeted hours	4,000
Actual clocked hours	4,400
Standard hours produced	4,500
Actual labour cost	4,260
<b>Materials:</b>	
Standard cost of material actually used	5,230
Standard cost of material allowed	5,330
Actual cost of material used	5,430
<b>Overheads:</b>	
Budgeted rates of overhead recovery	
Per labour hour:Fixed	0.50
Variable	<u>1.00</u>
Actual overhead costs:	
Fixed	2,000
Variable	4,300
	6,300



**Required:** Prepare the operating statement for June 2010 in the same form as May 2010.