

9.STANDARD COSTING

ASSIGNMENT SOLUTIONS

PROBLEM NO: 1

Material	Standard (2,10,000 kg)			Actuals (2,10,000 kg)			
	SQ	SP	SQ x SP	AQ	AP	AQ x AP	AQ x SP
	3,00,000 kg [For 70 kg output - 100 kg r/m For 2,10,000 kg output - ?]	1	3,00,000	2,80,000	0.9 $\left(\frac{2,52,000}{2,80,000} \right)$	2,52,000	2,80,000

$$M.U.V = SQ \times SP - AQ \times SP = Rs.3,00,000 - (Rs.2,80,000 \times 1) = Rs.20,000 (F)$$

$$M.P.V = AQ \times SP - AQ \times AP = Rs.2,80,000 - Rs.2,52,000 = Rs.28,000 (F)$$

$$M.C.V = SQ \times SP - AQ \times AP = Rs.3,00,000 - Rs.2,52,000 = Rs.48,000 (F)$$

PROBLEM NO: 2

Particulars	Standards (365 kg)			Actual (365 kg)					
	SQ	SP	SQ x SP	AQ	AP	AQ x AP	AQ x SP	RSQ	RSQ x SP
Mat A (35%)	134	25	3,350	125	27	3,375	3,125	140	3,500
Mat B (65%)	250	36	9,000	275	34	9,350	9,900	260	9,360
Input	384 kg		12,350	400 kg		12,725	13,025	400 kg	12,860
Loss (5%)	19		35						
Out put	365		365						

$$M.C.V = SQ \times SP - AQ \times AP = Rs.12,350 - Rs.12,725 = Rs.375 (A)$$

$$M.P.V = AQ \times SP - AQ \times AP = Rs.13,025 - Rs.12,725 = Rs.300 (F)$$

$$M.M.V = RSQ \times SP - AQ \times SP = Rs.12,860 - Rs.13,025 = Rs.165 (A)$$

$$M.Y.V = SP \times SQ - RSQ \times SP = Rs.12,350 - Rs.12,860 = Rs.510 (A)$$

PROBLEM NO: 3

Material	SQ* x SP	AQ** x SP	AQ** x AP	RSQ*** x SP
Vita-X	Rs. 2,75,000 (2,500 kg. x Rs. 110)	Rs. 3,30,000 (3,000 kg. x Rs.110)	Rs. 3,45,000 (3,000 kg. x Rs. 115)	Rs.2,62,460 (2,386 kg. x Rs. 110)
Proto-D	Rs. 4,80,000 (1,500 kg. x Rs. 320)	Rs. 4,00,000 (1,250 kg. x Rs. 320)	Rs. 4,12,500 (1,250 kg. x Rs. 330)	Rs. 4,58,240 (1,432 kg. x Rs. 320)
Mine-L	Rs. 6,90,000 (1,500 kg. x Rs. 460)	Rs. 4,60,000 (1,000 kg. x Rs. 460)	Rs. 4,05,000 (1,000 kg. x Rs. 405)	Rs. 6,58,720 (1,432 kg. x Rs. 460)
Total	Rs. 14,45,000	Rs. 11,90,000	Rs. 11,62,500	Rs. 13,79,420

* Standard Quantity of materials for actual output:

Vita-X	$= \frac{5 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 2,500 \text{ Kgs.}$
Proto-D	$= \frac{3 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 2,500 \text{ Kgs.}$
Mine-L	$= \frac{3 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 2,500 \text{ Kgs.}$

** Actual Quantity of Material used for actual output:

Vita-X	$= \frac{6 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 3,000 \text{ Kgs.}$
Proto-D	$= \frac{2.5 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 1,250 \text{ Kgs.}$
Mine-L	$= \frac{2 \text{ Kgs.}}{10 \text{ Kgs.}} \times 5,000 \text{ Kgs.} = 1,000 \text{ Kgs.}$

***Revised Standard Quantity (RSQ):

Vita-X	$= \frac{5 \text{ Kgs.}}{11 \text{ Kgs.}} \times 5,250 \text{ Kgs.} = 2,386 \text{ Kgs.}$
Proto-D	$= \frac{3 \text{ Kgs.}}{11 \text{ Kgs.}} \times 5,250 \text{ Kgs.} = 1,432 \text{ Kgs.}$
Mine-L	$= \frac{3 \text{ Kgs.}}{11 \text{ Kgs.}} \times 5,250 \text{ Kgs.} = 1,432 \text{ Kgs.}$

i) **Material Cost Variance** = (Std. Qty. × Std. Price) - (Actual Qty. × Actual Price) = (SQ × SP) - (AQ × AP)

Vita-X	= Rs. 2,75,000 - Rs. 3,45,000	= Rs. 70,000 (A)
Proto-D	= Rs. 4,80,000 - Rs. 4,12,500	= Rs. 67,500 (F)
Mine-L	= Rs. 6,90,000 - Rs. 4,05,000	= Rs. 2,85,000 (F)
	= Rs. 2,82,500 (F)	

ii) **Material Price Variance** = Actual Quantity (Std. Price - Actual Price) = (AQ × SP) - (AQ × AP)

Vita-X	= Rs. 3,30,000 - Rs. 3,45,000	= Rs. 15,000 (A)
Proto-D	= Rs. 4,00,000 - Rs. 4,12,500	= Rs. 12,500 (A)
Mine-L	= Rs. 4,60,000 - Rs. 4,05,000	= Rs. 55,000 (F)
	= Rs. 27,500 (F)	

iii) **Material Usage Variance** = Std. Price (Std. Qty. - Actual Qty.) = (SQ × SP) - (AQ × SP)

Vita-X	= Rs. 2,75,000 - Rs. 3,30,000	= Rs. 55,000 (A)
Proto-D	= Rs. 4,80,000 - Rs. 4,00,000	= Rs. 80,000 (F)
Mine-L	= Rs. 6,90,000 - Rs. 4,60,000	= Rs. 2,30,000 (F)
	= Rs. 2,55,000 (F)	

iv) **Material Mix Variance** = Std. Price (Revised Std. Qty. - Actual Qty.) = (RSQ × SP) - (AQ × SP)

Vita-X	= Rs. 2,62,460 - Rs. 3,30,000	= Rs. 67,540 (A)
Proto-D	= Rs. 4,58,240 - Rs. 4,00,000	= Rs. 58,240 (F)
Mine-L	= Rs. 6,58,720 - Rs. 4,60,000	= Rs. 1,98,720 (F)
	= Rs. 1,89,420 (F)	

v) **Material Yield Variance** = Std. Price (Std. Qty. - Revised Std. Qty.) = (SQ × SP) - (RSQ × SP)

Vita-X	= Rs. 2,75,000 - Rs. 2,62,460	= Rs. 12,540 (F)
Proto-D	= Rs. 4,80,000 - Rs. 4,58,240	= Rs. 21,760 (F)
Mine-L	= Rs. 6,90,000 - Rs. 6,58,720	= Rs. 31,280 (F)
	= Rs. 65,580 (F)	

PROBLEM NO: 4**Working Notes:**

- a) Standard input = Actual output / 90% = 2,250 kg / 90% = 2,500 kg.
 Standard input of material- A 2,500 kg. x 40% = 1,000 kg.
 Standard input of material- B 2,500 kg. x 60% = 1,500 kg.
- b) Actual input = (Opening Stock + Purchases - Closing Stock)
 Actual input of material- A (40 kg. + 800 kg. - 20 kg.) = 820 kg.
 Actual input of material- B (50 kg. + 1,800 kg. - 15 kg.) = 1,835 kg.
 Total actual input 2,655 kg.
- c) Standard Cost
 Material- A 1000 kg. @ Rs. 5.00 per kg = Rs. 5,000
 Material- B 1500 kg. @ Rs. 4.00 per kg = Rs. 6,000
 = Rs.11,000
- d) Actual Cost
 Material- A 40 kg. @ Rs. 5.00 per kg = Rs.200
 780 kg. @ Rs. 6.00 per kg = Rs. 4,680 = Rs. 4,880
 Material- B 50 kg. @ Rs. 4.00 per kg = Rs. 200
 1,785 kg. @ Rs. 4.20 per kg = Rs. 7,497 = Rs. 7,697
 = Rs. 12,577
- i) Material Price Variance = Actual Quantity (Std. Rate - Actual Rate)
 Material- A = 40 kg (Rs. 5.00 - Rs. 5.00) = Nil
 780 kg (Rs. 5.00 - Rs. 6.00) = Rs. 780 (A)
 Material- B = 50 kg. (Rs. 4.00 - Rs. 4.00) = Nil
 1785 kg (Rs. 4.00 - Rs. 4.20) = Rs. 357 (A)
 = Rs. 1,137 (A)
- ii) Material Usage Variance = Std. Rate (Standard Quantity - Actual Quantity)
 Material- A = Rs. 5.00 (1,000 kg. - 820 kg) = Rs. 900 (F)
 Material- B = Rs. 4.00 (1,500 kg. - 1835 kg.) = Rs.1,340 (A)
 = Rs. 440 (A)
- iii) Material Yield Variance = Std. Rate (Std. Quantity - Revised Std. Quantity)
 Material- A = Rs. 5.00 (1,000 kg. - 2,655 x 40%)
 = Rs. 5.00 (1,000 kg. - 1,062 kg.) = Rs. 310 (A)
 Material- B = Rs. 4.00 (1,500 kg - 2,655 x 60%)
 = Rs. 4.00 (1,500 kg. - 1,593 kg.) = Rs. 372 (A)
 = Rs. 682 (A)
- iv) Material Mix Variance = Std. Rate (Revised Std. Quantity - Actual Quantity)
 Material- A = Rs. 5.00 (2,655 x 40% - 820 kg.)
 = Rs. 5.00 (1,062 kg. - 820 kg) = Rs. 1,210 (F)

Material- B = Rs. 4.00 (2,655 x 60% - 1,835 kg.)

= Rs. 4.00 (1,593 kg. - 1,835 kg.)

= Rs. 968 (A)

= Rs. 242 (F)

v) Material Cost Variance = Std. Cost - Actual cost

= Rs. 11,000 - Rs. 12,577

= Rs. 1,577 (A)

PROBLEM NO: 5

Material price variance=3-4

51,000

=AQXSP-AQXAP

=AQ(SP-AP)

=AQX5

AQ=51000/5

=10200 U

AQXAP

=5,14,000

10,200XAP

=5,14,000

AP

=50.39

SP

=50.39+5= Rs.55.39

SQ=2000 unitsx3kgs

=6000kg

Material usage variance=1-3

=SQXSP-AQXSP

=SP(SQ-AQ)

=55.39(6000-10200)

=2,32,638 A

Material cost variance=1-4

=SQXSP-AQXAP

=(6000X55.39)-5,14,000

=1,81,660 A

PROBLEM NO: 6

Particulars	1	2	3	4	5
	SHXSR	RSHXSR	AHPXSR	AHPXSR	AHWXAR
SKILLED	900X5	875X5	30X35X5	30X35X5	30X35X6
SEMI SKILLED	360X4	350X4	10X35X4	10X35X4	10X35X7
UN SKILLED	540X3	525X3	10X35X3	10X35X3	10X35X4
	7,560	7,350	7,700	7,700	10,150

VARIANCES:

Labour yield variance	1-2	SHXSR- RSHXSR	7560-7350=210F
Labour mix variance	2-3	RSHXSR- AHPXSR	7350-7700=350A
Labour efficiency variance	1-3	SHXSR- AHPXSR	7560-7700=140A
Labour idle time variance	3-4	AHPXSR- AHPXSR	7700-7700=NIL
Labour rate variance	4-5	AHPXSR- AHWXAR	7700-10150=2450A
Labour cost variance	1-5	SHXSR- AHWXAR	7560-10150=2590A

WORKING NOTE:

Actual workers = 30+10+10=50

Actual hours worked = 50W x35
= 1750h

Standard hours in standard mix = 25:10:15,1800hours

Skilled=900,semi skilled = 360,un skilled=540

Actual hours worked in standard mix:

Revised standard mix

Skilled = 1750x25/50=875hours

Semi skilled = 1750x10/50=350hours

Un skilled = 1750x15/50=525hours

PROBLEM NO: 7

Particulars	1	2	3	4	5
	SHXSR	RSHXSR	AHWXSR	AHPXSR	AHPXAR
SKILLED	5X57.14X24	5X54.88X24	5X54.88X24	5X56X24	5X56X30
SEMI SKILLED	10X57.14X24	10X54.88X24	10X54.88X24	10X56X24	10X56X24
UN SKILLED	20X57.14X24	20X54.88X24	20X54.88X24	20X56X24	20X56X18
	48,000	46,100	46,100	47,040	42,000

VARIANCES:

Labour yield variance	1-2	SHXSR- RSHXSR	48,000-46,100=1900(F)
Labour mix variance	2-3	RSHXSR- AHPXSR	46,100-46,100=NIL
Labour efficiency variance	1-3	SHXSR- AHPXSR	48,000-46,100=1900(F)
Labour idle time variance	3-4	AHPXSR- AHPXSR	46,100-47,040=940(A)
Labour rate variance	4-5	AHPXSR- AHWXAR	47,040-42,000=5040(F)
Labour cost variance	1-5	SHXSR- AHWXAR	48,000-42,000=6000(F)

WORKING NOTE:

1) Actual hours worked = 56h-56x2% = 54.88h

2)SH = standard hours for actual production
= 400 chairs/7 chairs p.h = 57.14h

3)Total no. of workers = 5+10+20 = 35 workers

PROBLEM NO: 8

Standard time allowed for 2500 units

Particulars	Amt.	Amt.
Skilled	35x25	875
Semi skilled	35x10	350
Un skilled	35x20	700
		1925

Standard time allowed for actual output:

Particulars	Amt.	Amt.
Skilled	$\frac{875}{2500} \times 2000$	700
Semi skilled	$\frac{350}{2500} \times 2000$	280

Un skilled	$\frac{700}{2500} \times 2000$	560

Particulars	1	2	3	4	5
	SHXSR	RSHXSR	AHXAR	AHXSR	APHXSR
SKILLED	700x50	750x50	1050x50	1050x50	900x50
SEMI SKILLED	280x60	300x60	525x60	525x60	450x60
UN SKILLED	560x40	600x40	350x40	350x40	300x40
	78,400	79,500	99,750	98,000	84,000

Idle time:

Skilled $5 \times 30 = 150$

Semi skilled $5 \times 15 = 75$

Un skilled $5 \times 10 = 50$

Actual production hours

Skilled $1050 - 150 = 900$

Semi skilled $525 - 75 = 450$

Un skilled $350 - 50 = 300$

Revised standard hours: $1050 + 525 + 350$

Skilled:

$$\frac{700}{1540} \times 1650 = 750$$

Semi-skilled:

$$\frac{280}{1540} \times 1650 = 300$$

Un skilled:

$$\frac{560}{1540} \times 1650 = 600$$

Labour cost variance	1-5	SHXSR- AHXAR	$74200 - 84000 = 9,800$ A
Labour rate variance	4-5	AHWXSR- AHXAR	$84000 - 99750 = 15,750$ A
Labour efficiency variance	1-3	SHXSR- AHPXSR	$74200 - 98000 = 23,800$ A
Labour mix variance	2-3	RSHXSR- AHPXSR	$79500 - 98000 = 18,500$ A
Labour idle time variance	3-4	AHPXSR- AHXSR	$98000 - 84000 = 14,000$ F

PROBLEM NO: 9

SR - Standard labour Rate per Hour

AR - Actual labour rate per hour

SH - Standard Hours

AH - Actual hours

i) Actual labour rate per hour:

$$\text{Labour rate Variance} = \text{AH} (\text{SR} - \text{AR})$$

$$= 17,094 (\text{Rs. } 8 - \text{AR}) = 68,376 (\text{A}) = - 68,376$$

$$= \text{Rs. } 8 - \text{AR} = - 4 \text{ Or, AR} = \text{Rs. } 12$$

ii) Standard hour required for 6,000 units:

$$\text{Labour Efficiency} = \frac{\text{SH}}{\text{AH}} \times 100 = 105.3$$

$$= \text{SH} = \frac{\text{AH} \times 105.3}{100} = \frac{17,094 \text{ hours} \times 105.3}{100} = 17,999.982 \text{ or, SH} = 18,000 \text{ hours}$$

iii) Labour Efficiency Variance = SR (SH - AH) = Rs. 8 (18,000 - 17,094) = 8 × 906 = Rs. 7,248 (F)

iv) Standard Labour Cost per Unit = $\frac{18,000 \text{ hours} \times \text{Rs.} 8}{6,000 \text{ units}} = \text{Rs.} 24$

v) Actual Labour Cost per Unit = $\frac{17,094 \text{ hours} \times \text{Rs.} 12}{6,000 \text{ units}} = \text{Rs.} 34.19$

PROBLEM NO: 10

Actual production = 25,000 Units

Standard hours for actual production = 5000H $\left[\begin{array}{cc} 12\text{U} & 25\text{hours} \\ 2400\text{U} & 5000 \end{array} \right]$

Particulars	SHXSR (10:5:10)	RSHXSR (10:5:10)	AHWXSR	AHPXSR	AHPXAR
Skilled	2000x50	1800x50	4.625x180x50	4.625x200x50	4.625x200x70
Semi skilled	1000x60	900x60	9.25x180x60	9.25x200x60	9.25x200x90
Un skilled	2000x70	1800x70	11.125x180x70	11.125x200x70	11.125x200x50
	3,00,000	2,70,000	2,81,700	3,13,000	6,55,500

Let x be the no. of semi skilled workers

Skilled workers = 2x X 200 = 400x

Semi skilled = 1x X 200 = 200x

Un skilled = (25-3x)x200 = 5000-600x

Actual hours worked = (200-20)x25 = 4500

Labour mix variance = RSHXSR-AHWXSR

$$-21,600 = 27,000 - \left[\begin{array}{l} 2x \times 180 \times 70 + \\ x \times 180 \times 90 + \\ (25 - 3x) \times 180 \times 50 \end{array} \right]$$

$$-21,600 = 27000 - (25200x + 16200x + 225000 - 27000x)$$

$$-21,600 = 270000 - (14400x + 225000)$$

$$X = 4.625$$

No. of workers:

Semi skilled = 4.625

Skilled = 4.625x2 = 9.25

Un skilled = 11.125(25-4.625-9.25)

i) Actual no of workers:

skilled = 9.25

semi skilled = 4.625

un skilled = 11.125

ii) labour rate variance=AHPXSR-AHWXAR

$$=2,81,700-6,55,500$$

$$=3,73,800A$$

III) Labour yield variance=SHXSR-RSHXSR

$$=3,00,000-2,70,000$$

$$=30000F$$

IV) labour efficiency variance= SHXSR-AHPXSR

$$=3,00,000-3,13,000$$

$$=13,000A$$

PROBLEM NO:11

Material price variance = 3-4

$$= AQXSP-AQXAP$$

$$= AQ(SP-AP)$$

A	20,000(5-4)	20,000F
B	18,000(7-3)	72,000F
C	50,000(2-3)	50,000F
		1,42,000 F

Material usage variance = 1-3

$$= SQXSP-AQXSP$$

$$= SP(SQ-AQ)$$

A	5(5,000X4-20,000)	NIL
B	7(5,000X3-30,000)	1,05,000A
C	2(5,000X5-50,000)	50,000A
		1,55,000 A

Labour rate variances = 4-5

$$= AHPXSR-AHPXAR$$

$$= AHP(SR-AR)$$

$$= 20,000(8-8)$$

$$= NIL$$

Labour efficiency variance = 1-3

$$= SHXSR- AHPXSR$$

$$= (5000X3X8)-(20,000X8)$$

$$= 120000-160000$$

$$=40000A$$

PROBLEM NO:12

VOH Variances: (Hours Basis)

1	2	3
SH x SR	AHW x SR	AHW x AR
1,66,320 x 2.5 = 4,15,800	1,84,800 x 2.5 = 4,62,000	1,84,800 x 4.33 = 8,00,000

$$\text{Standard Rate} = \frac{\text{Budgeted OverHeads}}{\text{Budgeted Hours}} = \frac{4,00,000}{1,60,000} = \text{Rs. 2.5/hr.}$$

$$\text{Budgeted Hours} = 20 \times 8,000 = 1,60,000 \text{ Hours}$$

$$\text{Actual Hours worked} = 22 \times 8,400 = 1,84,800 \text{ Hours}$$

$$\text{Actual Rate} = \frac{\text{Actual OverHeads}}{\text{Actual Hours worked}} = \frac{8,00,000}{1,84,800} = \text{Rs. 4.33/hr.}$$

$$\text{Actual Output} = 1,84,800 \times 1.80 = 3,32,640 \text{ units}$$

$$\text{Standard Hours} = 1,66,320 \text{ hours} \left[\begin{array}{cc} 1 \text{ hour} & 2 \text{ units} \\ ? & 3,32,640 \text{ units} \end{array} \right]$$

$$1 - 2 = \text{VOH Efficiency Variance} = 46,200 \text{ (A)}$$

$$2 - 3 = \text{VOH Expenses Variance} = 3,38,000 \text{ (A)}$$

$$1 - 3 = \text{VOH Cost Variance} = 3,84,200 \text{ (A)}$$

FOH variance (Hours Basis):

1	2	3	4	5
SH x BR	AHW x BR	RBH x BR	BH x BR	AHW x AR
1,66,320 x 5	1,84,800 x 5	1,76,000 x 5	1,60,000 x 5	1,84,800 x 4.54
8,31,600	9,24,000	8,80,000	8,00,000	8,40,000

$$\text{Budgeted Rate} = \frac{\text{Budgeted OverHeads}}{\text{Budgeted Hours}} = \frac{8,00,000}{1,60,000} = \text{Rs. 5.00/hr.}$$

$$\text{Actual Rate} = \frac{\text{Actual Overheads}}{\text{Actual Hours worked}} = \frac{8,40,000}{1,84,800} = \text{Rs. 4.54}$$

$$\text{Revised Budgeted Hours} = \frac{\text{Actual days}}{\text{Budgeted days}} \times \text{Budgeted Hours} = \frac{22}{20} \times 1,60,000 = 1,76,000 \text{ Hours}$$

$$1 - 2 = \text{FOH Efficiency Variance} = 92,400 \text{ (A)}$$

$$2 - 3 = \text{FOH Capacity Variance} = 44,000 \text{ (F)}$$

$$3 - 4 = \text{FOH Calendar Variance} = 80,000 \text{ (F)}$$

$$1 - 4 = \text{FOH Volume Variance} = 31,600 \text{ (F)}$$

$$4 - 5 = \text{FOH Expenditure Variance} = 40,000 \text{ (A)}$$

$$1 - 5 = \text{FOH Cost Variance} = 8,400 \text{ (A)}$$

PROBLEM NO: 13

Workings:

$$1. \text{ Budgeted Hours} = \frac{\text{Rs.30,000}}{\text{Rs.1per hour}} = 30,000 \text{ hours}$$

2. Standard Fixed Overhead rate per hour (Standard Rate):

$$\frac{\text{Budgeted fixed overheads}}{\text{Budgeted Hours}} = \frac{\text{Rs.30,000}}{30,000 \text{ hours}} = \text{Rs.1.00}$$

$$3. \text{ Standard Hour per unit of output} = \frac{30,000 \text{ hours}}{20,000 \text{ hours}} = 1.5 \text{ hours}$$

$$4. \text{ Standard hours for Actual Output} = 22,000 \text{ units} \times 1.5 \text{ hours} = 33,000 \text{ Hours}$$

5. Budgeted Overhead per day for budgeted days = $\frac{\text{Rs. } 30,000}{25 \text{ days}} = \text{Rs. } 1,200$
6. Budgeted Overhead for actual days worked = $1,200 \times 27 \text{ days} = \text{Rs. } 32,400$
7. Budgeted Hours for Actual days worked = $\frac{30,000 \text{ hours}}{25 \text{ days}} \times 27 \text{ days} = 32,400 \text{ hours}$

Computation of Variances in relation to Fixed Overheads:

i) Efficiency Variance

$$= \text{Standard Rate} \times (\text{Standard hours for actual output} - \text{Actual hours worked})$$

$$= \text{Rs. } 1.00 (33,000 \text{ hours} - 31,500 \text{ hours}) = \text{Rs. } 1,500 \text{ (Favourable)}$$

ii) Capacity Variance:

$$= \text{Standard Rate} \times (\text{Actual Hours} - \text{Budgeted Hours for actual days worked})$$

$$= \text{Rs. } 1.00 (31,500 \text{ hours} - 32,400 \text{ hours}) = \text{Rs. } 900 \text{ (Adverse)}$$

iii) Calendar Variance

$$= \text{Standard Fixed Overhead Rate per day} \times (\text{Actual Working days} - \text{Budgeted working days})$$

$$= \text{Rs. } 1,200 (27 \text{ days} - 25 \text{ days}) = \text{Rs. } 2,400 \text{ (Favourable)}$$

iv) Volume Variance

$$= \text{Standard Rate} \times (\text{Standard hours} - \text{Budgeted hours})$$

$$= \text{Rs. } 1.00 (33,000 \text{ hours} - 30,000 \text{ hours}) = \text{Rs. } 3,000 \text{ (Favourable)}$$

v) Expenditure Variance

$$= \text{Budgeted Overheads} - \text{Actual Overheads}$$

$$= \text{Rs. } 30,000 - \text{Rs. } 31,000 = \text{Rs. } 1,000 \text{ (Adverse)}$$

Note: Overhead Variances may also be calculated based on output.

PROBLEM NO: 14

a) Material price variance:

$$= (\text{Standard price} - \text{Actual Price}) \times \text{Actual quantity}$$

$$= (\text{Rs. } 4 - \text{Rs. } 4.10) \times 5,000 = \text{Rs. } 500 \text{ A.}$$

b) Material usage variance:

$$= (\text{Std. quantity for actual output} - \text{Actual qty.}) \times \text{Std. price}$$

$$= (600 \times 5 - 3,500) \times 4 = \text{Rs. } 2,000 \text{ A.}$$

c) Labour Rate Variance:

$$= (\text{Standard rate} - \text{Actual rate}) \times \text{Actual hours}$$

$$= (\text{Rs. } 10 - \text{Rs. } 9) \times 1,700 = \text{Rs. } 1,700 \text{ F.}$$

d) Labour Efficiency Variance:

$$= (\text{Standard hours for actual output} - \text{Actual hours}) \times \text{Standard rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs. } 10 = \text{Rs. } 1,000 \text{ F.}$$

e) Variable Overhead Expenditure Variance:

$$= (\text{Actual Hours} \times \text{Standard Rate}) - \text{Actual Overhead}$$

$$= (1,700 \times \text{Rs. } 1) - \text{Rs. } 1,900 = \text{Rs. } 200 \text{ Adv.}$$

f) Variable Overhead Efficiency Variance:

$$= \text{Std. hours for actual output} - \text{Actual hours} \times \text{Std. rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs.1} = \text{Rs.100 F.}$$
g) Fixed Overhead Expenditure Variance:

$$= (\text{Budgeted overhead} - \text{Actual overhead})$$

$$= (1,800 \times 0.50 - 900) = \text{Nil}$$
h) Fixed Overhead Volume Variance:

$$= (\text{Std. hours for actual output} - \text{Budgeted hours}) \times \text{Std. rate}$$

$$= (600 \times 3 - 1,800) \times \text{Rs. 0.50} = \text{Nil}$$
i) Fixed Overhead Capacity Variance:

$$= (\text{Budgeted hours} - \text{Actual Hours}) \times \text{Standard rate}$$

$$= (1,800 - 1,700) \times \text{Rs.0.50} = \text{Rs.50 Adv.}$$
j) Fixed Overhead Efficiency Variance:

$$= (\text{Std. hours for actual output} - \text{Actual hours}) \times \text{Standard rate}$$

$$= (600 \times 3 - 1,700) \times \text{Rs.0.50} = \text{Rs.50 F.}$$

Verification:	Amount (in Rs.)	Amount (in Rs.)
Overhead recovered: 600 units @ Rs.4.50		2,700
Actual Overhead:		
Variable	1,900	
Fixed	900	2,800
		100 A.
Variable expenditure variance		200 A
Variable Efficiency variance		100 F.
Fixed expenditure variance		Nil
Fixed overhead volume variance		Nil
		100 Adv.

Reconciliation Statement:

Standard Cost: 600 units @ R.54.50		32,700	
Actual Cost:	38,600		
Less: Material Stock at standard cost: (1,500 × Rs.4)	6,000	(32,600)	100 F.
Variances:	Adverse. (Rs.)	Favorable. (Rs.)	
Material price	500		
Material usage	2,000		
Labour rate		1,700	
Labour efficiency		1,000	
Variable expenditure	200		
Variable efficiency		100	
Total	2,700	2,800	100 F.

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To **MASTER MINDS**, Guntur

THE END