

Standard Costing

Time Allowed : 45 Minutes

TEST – 12 (Solution)

Total: 25 Marks

Answer to Question no.1:

Variable Overheads Variances:-

Output Absorbed VO (VO ₁)	Input Absorbed VO (VO ₂)	Actual VO (VO ₃)
₹ 1,05,600	₹ 97,200	₹ 1,02,000

VO₂ = Actual Hours × Budgeted VO/hr.

$$= 8,100 \text{ hours} \times ₹12/\text{hr.} = ₹97,200$$

$$\text{Budgeted VO/hr.} = \frac{₹1,06,080}{8,840 \text{ hrs.}} = ₹12/\text{hr.}$$

$$\text{VO}_1 = \text{SHAO} \times \text{Budgeted VO/hr.} = 8,800 \times 12 = ₹1,05,600$$

$$\text{VO Expenses Variance} = \text{VO}_2 - \text{VO}_3 = ₹4,800 \text{ (A)}$$

$$\text{VO Efficiency Variance} = \text{VO}_1 - \text{VO}_2 = ₹8,400 \text{ (F)}$$

Fixed Overheads Variances:-

Output Absorbed FO (FO ₁)	Input Absorbed FO (FO ₂)	Budgeted FO (FO ₃)	Actual FO (FO ₄)
₹2,20,000	₹2,02,500	₹2,21,000	₹2,00,000

$$\text{FO}_2 = \text{Actual Hours} \times \text{Budgeted FO/hr.} = 8,100 \times 25 = ₹2,02,500$$

$$\text{Budgeted} \frac{\text{Budgeted FO}}{\text{Budgeted Hrs.}} = \frac{₹2,21,000}{8,840 \text{ hrs.}} = ₹ 25/\text{hr.}$$

$$\text{FO}_1 = \text{SHAO} \times \text{Budgeted FO/hr.} = 8,800 \times 25 = ₹2,20,000$$

$$\text{FO Budgeted Variance} = \text{FO}_3 - \text{FO}_4 = ₹21,000 \text{ (F)}$$

$$\text{FO Capacity Variance} \text{FO}_2 - \text{FO}_3 = ₹18,500 \text{ (A)}$$

$$\text{FO Efficiency Variance} = \text{FO}_1 - \text{FO}_2 = ₹17,500 \text{ (F)}$$

Answer to Question no.2:

Actual Hours Paid (AHP)

$$A = 10 \times 40 = 400 \text{ hours}$$

$$B = 30 \times 40 = 1,200 \text{ hours}$$

$$C = 60 \times 40 = 2,400 \text{ hours.}$$

Actual Hours Worked (AHW)

$$A = 400 \text{ hrs. less } 5\% = 380 \text{ hours.}$$

$$B = 1,200 \text{ hrs. less } 5\% = 1,140 \text{ hours.}$$

$$C = 2,400 \text{ hrs. less } 5\% = 2,280 \text{ hours.}$$

Revised Standard Hours (RSH)

Total of Actual Hours Worked (AHW) = 3,800 hours.

Budgeted Ratio = 10 : 30 : 60 (Assumption)

A = 380 hrs. B = 1,140 hrs. C = 2,280 hours.

We are given that

$$\text{Labour Efficiency Variance} = ₹240 \text{ (F)}$$

$$\text{(SR) (SHAO - AHW)} = 240$$

$$\text{(SR) (3,840 hrs. - 3,800 hrs.)} = 240$$

$$\text{Standard Rate} = ₹6/\text{hour.}$$

$$\text{SHAO} = \text{Actual Output} \times \text{Budgeted input p.u.}$$

$$= 960 \text{ units} \times 4 \text{ hrs. p.u.} = 3,840 \text{ hours.}$$

We are given that 25 units should be produced by 100 workers together in 1 hour. So, 25 units require total working time of 100 hours.

Hence, one unit require standard time of 4 hours.

Computation of Labour Cost Variances:-

Worker	SR×SHAO (L ₁)	SR×RSH (L ₂)	SR×AHW (L ₃)	SR×AHP (L ₄)	AR×AHP (L ₅)
A	₹6 × 384 = ₹2,304	₹6 × 380 = 2,280	₹6 × 380 = 2,280	₹6 × 400 = 2,400	₹6.2 × 400 = 2,480
B	₹6 × 1,152 = ₹6,912	₹6 × 1,140 = 6,840	₹6 × 1,140 = 6,840	₹6 × 1,200 = 7,200	6 × 1,200 = 7,200
C	₹6 × 2,304 = ₹13,824	₹6 × 2,280 = 13,680	₹6 × 2,280 = 13,680	₹6 × 2,400 = 14,400	5.7 × 2,400 = 13,680
	₹23,040	22,800	22,800	24,000	23,360

SHAO = 3,840 hours
 A = 3,840 × 10/100 = 384 hours.
 B = 3,840 × 30/100 = 1,152 hours.
 C = 3,840 × 60/100 = 2,304 hours. } 3,840 hrs.

Worker	DLCV (L ₁ - L ₅)	DLRV (L ₄ - L ₅)	ITV (L ₃ - L ₄)	DLGV (L ₂ - L ₃)	DLYV (L ₁ - L ₂)
A	176 (A)	80 (A)	120 (A)	NIL	24 (F)
B	288 (A)	NIL	360 (A)	NIL	72 (F)
C	144 (F)	720 (F)	720 (A)	NIL	144 (F)
Total	320 (A)	640 (F)	1,200 (A)	NIL	240 (F)

DLYV (Output Formula)

$$= \left(\frac{\text{Standard Cost p.u.}}{\text{of output}} \right) \left(\frac{\text{Actual Output} - \text{Expected Output}}{\text{Output} - \text{Actual Input}} \right)$$

$$= \left[\frac{\sum (\text{SR} \times \text{SHAO})}{\text{Actual Output}} \right] \left[\text{Actual Output} - \frac{\text{Total Actual Input}}{\text{Budgeted Input p.u.}} \right]$$

$$\left[\frac{₹23,040}{960 \text{ Units}} \right] \left[960 \text{ Units} - \frac{3,800 \text{ hours}}{4 \text{ hrs.p.u.}} \right]$$

= (₹ 24 p.u. (960 Units - 950 Units) = ₹ 240 (F)

Answer to Question no.3:

Material	SP×SQAQ (M ₁)	SP×RSQ (M ₂)	SP×AQ (M ₃)	AP×AQ (M ₄)
A	₹ 5 × 510 kgs. = ₹ 25,500	₹ 50 × 480 kgs. = ₹ 24,000	₹ 50 × 540 kgs. = ₹ 27,000	₹ 60 × 540 kgs. = ₹ 32,400
B	₹ 6 × 340 kgs. = ₹ 20,400	₹ 60 × 320 kgs. = ₹ 19,200	₹ 60 × 260 kgs. = ₹ 15,600	₹ 50 × 260 kgs. ₹ 13,000
	= ₹ 45,900			

Computation of Material Cost Variances:-

Material	DMCV (M ₁ - M ₄)	DMPV (M ₃ - M ₄)	DMUV (M ₁ - M ₃)	DMMV (M ₂ - M ₃)	DMYV (M ₁ - M ₂)
A	₹ 6,900 (A)	₹ 5,400 (A)	₹ 1,500 (A)	₹ 3,000 (A)	₹ 1,500 (F)
B	₹ 7,400 (F)	₹ 2,600 (F)	₹ 4,800 (F)	₹ 3,600 (F)	₹ 1,200 (F)
	₹ 500 (F)	₹ 2,800 (A)	₹ 3,300 (F)	₹ 600 (F)	₹ 2,700 (F)

$$\begin{aligned}
 \text{DMYV} & \left[\frac{\sum (SP \times \text{SQAQO})}{\text{Actual Output}} \right] \left[\text{Actual Output} - \frac{\text{Total Actual Input}}{\text{Budgeted Input p.u.}} \right] \\
 & = \left[\frac{\text{₹}45,900}{980 \text{ kgs.}} \right] \left[680 \text{ kgs.} - \frac{800 \text{ kgs.}}{1.25 \text{ kgs. p.u.}} \right] \\
 & = (\text{₹ } 67.5) (680 \text{ kgs.} - 640 \text{ kgs.}) = \text{₹ } 2,700 \text{ (F)}
 \end{aligned}$$

Revised Standard Quantity (RSQ)

Total of Actual input consumed = 540 + 260 = 800 kgs.

Budgeted Ratio = 3: 2

A = 480 kgs., B = 320 kgs.

SQAQO = Actual output x Budgeted Input p.u. of Output

A = 680 x 0.75 = 510 kgs.

B = 680 x 0.50 = 340 kgs.

Budgeted Input p.u. of Output

Output	Input		Total
	Material A	Material B	
100 kgs.	75 kgs.	50 kgs.	125 kgs.
(Assumption)	(60%)	(40%)	
1 kg. →	0.75 kg.	0.50 kg.	1.25 kgs.