504 - Management A/c - Paper Solution November 2023

Example - 1:

SQ	SP	AQ	AP	RSP	Substitute
175,000 (5,000 × 35)	70	176,750	105.7	105	91

(i) Traditional/Conventional Approach:

(a) Material Cost Variance = (SQ × SP) - (AQ × AP)

= (175,000 × 70) - (176,750 × 105.70)

= 1,22,50,000 - 1,86,82,475

= **-6,432,475 (U)**

(b) Material Price Variance = AQ (SP - AP)

= 176,750 (70 - 105.70)

= **-6,309,975 (U)**

(c) Material Usage Variance = SP (SQ - AQ)

= 70 (175,000 - 176,750)

= **-122,500 (U)**

(ii) Opportunity Cost Approach:

(a) Planning Variance:

Original Standard Cost (175,000 × 70)	12,250,000
Less: Revised Standard Cost (175,000 × 105)	18,375,000
	-6,125,000 (U)

→ Unavoidable Planning Variance:

Original Standard Cost (175,000 × 70)	12,250,000
Less: Cost of Alternate Material (175,000 × 91)	15,925,000
	-3,675,000 (U)

→ Possibly Avoidable Planning Variance::

Cost of Alternate Material (175,000 × 91)	15,925,000
Less: Revised Standard Cost (175,000 × 105)	18,375,000
	-2,450,000 (U)

(b) Operating Variance:

(1) Material Cost Variance = (RSQ × RSP) - (AQ × AP)

= (175,000 × 105) - (176,750 × 105.70)

= 1,83,75,000 - 1,86,82,475

= **-307,475 (U)**

(2) Material Price Variance = AQ (RSP - AP)

= 176,750 (105 - 105.70)

= **-123,725 (U)**

(3) Material Usage Variance = RSP (RSQ - AQ)

= 105 (175,000 - 176,750)

= **-183,750 (U)**

Example - 2:

(1) Production Budget for Quarter One:

Particulars	Months			W.N.
	January	February	March	April
Budgeted Sales	10,000	12,000	14,000	15,000
Add: Closing Stock	2,400	2,800	3,000	3,000
	12,400	14,800	17,000	18,000
Less: Opening Stock	2,700	2,400	2,800	3,000
Production	**9,700**	**12,400**	**14,200**	**15,000**

(2) Raw Material Consumption Quantity Budget for Quarter One:

Particulars	Months			Total
	January	February	March	
	(9,700 Units)	(12,400 Units)	(14,200 Units)	
Material X (4 Kgs.)	38,800	49,600	56,800	**145,200**
Material Y (6 Kgs.)	58,200	74,400	85,200	**217,800**
Material Consumption	**97,000**	**124,000**	**142,000**	

W.N.: **April (15,000 Units)**

Material X	60,000
Material Y	90,000
Total	**150,000**

(3) Raw Material Purchase Budget for Quarter One:

For Material X:

Particulars	Months			April
	January	February	March	
Material Consumption	38,800	49,600	56,800	60,000
Add: Closing Stock	24,800	28,400	30,000	
	63,600	78,000	86,800	
Less: Opening Stock	19,000	24,800	28,400	
Material Quantity	**44,600**	**53,200**	**58,400**	
× Cost per kg.	10	10	10	
Material Cost	**446,000**	**532,000**	**584,000**	

For Material Y:

Particulars	Months			April
	January	February	March	
Material Consumption	58,200	74,400	85,200	90,000
Add: Closing Stock	37,200	42,600	45,000	
	95,400	117,000	130,200	
Less: Opening Stock	29,000	37,200	42,600	
Material Quantity	**66,400**	**79,800**	**87,600**	
× Cost per kg.	15	15	15	
Material Cost	**996,000**	**1,197,000**	**1,314,000**	

Example - 3:

Working notes:

(1) Budgeted Sales Price:

Sales Price Variance = AQ (ASP - BSP)

10,000 = 9,10,000 - 9,000 (BSP)

10,000 - 9,10,000 = - 9,000 (BSP)

9,00,000 / 9,000 = BSP

BSP = 100

(2) Budgeted Profit:

Budgeted Selling Price		100
Less: Direct Material	20	
Direct Wages	24	
Variable Overheads	30	
Fixed Overheads	16	90
Budgeted Profit per unit		**10**

Total Budgeted Profit = 10,000 units × ₹ 10 per unit

= ₹ 1,00,000

(3) Actual Profit:

Actual Sales		910,000
Less: Direct Material	185,000	
Direct Wages	218,000	
Variable Overheads	271,000	
Fixed Overheads	163,000	837,000
Total Actual Profit		**73,000**

Calculation of Variances:

(1) Material Cost Variance = (SQ × SP) - (AQ × AP)

= (9,000 × 20) - 1,85,000

= 1,80,000 - 1,85,000

= **-5,000 (U)**

Here, Material Rate Variance and Material Usage Variances are unfavourable.

Ratio is 2 : 3.

Material Rate Variance = 5,000 × 2/5 = **-2,000 (U)**

Material Usage Variance = 5,000 × 3/5 = **-3,000 (U)**

(2) Labour Cost Variance = (AQ × SR) - (AH × AR)

= (9,000 × 24) - 2,18,000

= 2,16,000 - 2,18,000

= **-2,000 (U)**

Here, Labour rate variance is favourable but efficiency variance is unfavourable.

Ratio is 1 : 2.

Labour Rate Variance

1 2,000 = **2,000 (F)**

1 (?)

Labour Efficiency Variance

1 2,000 = **-4,000 (U)**

2 (?)

(3) Variable O/hs Cost Variance = (AQ × SR) - Actual V. O/hs

= (9,000 × 30) - 2,71,000

= 2,70,000 - 2,71,000

= **-1,000 (U)**

Here, Variable O/hs rate variance is favourable but efficiency variance is unfavourable.

Ratio is 5 : 6.

Variable O/hs Rate Variance

1 1,000 = **5,000 (F)**

5 (?)

Variable O/hs Efficiency Variance

1 1,000 = **-6,000 (U)**

6 (?)

(4) Fixed O/hs Cost Variance = (AQ × SR) - Actual Fixed O/hs

= (9,000 × 16) - 1,63,000

= 1,44,000 - 1,63,000

= **-19,000 (U)**

Here, Fixed O/hs Exp. Variance and Volume Variances are unfavourable.

Ratio is 1.5 : 8.

Fixed O/hs Exp. Variance = 19,000 × 1.5/9.5 = **-3,000 (U)**

Fixed O/hs Volume Variance = 19,000 × 8/9.5 = **-16,000 (U)**

(5) Sales Margin Volume Variance = Std. Profit × (AQ - BQ)

= 10 × (9,000 - 10,000)

= 10 × - 1,000

= **-10,000 (U)**

Reconciliation Statement of Profit

Particulars		Amount
Budgeted Profit		100,000
Sales Price Variance	10,000	
Sales Margin Volume Variance	-10,000	0
Standard Profit		100,000
(1) Material Price Variance	-2,000	
Material Usage Variance	-3,000	-5,000
(2) Labour Rate Variance	2,000	
Labour Efficiency Variance	-4,000	-2,000
(3) Variable O/hs Rate Variance	5,000	
Variable O/hs Effi. Variance	-6,000	-1,000
(4) Fixed O/hs Exp. Variance	-3,000	
Fixed O/hs Volume Variance	-16,000	-19,000
Actual Profit		**73,000**

Example - 4:

Cost of Investigation = C = ₹ 4,000

Probability for finding cause = (1 - p) = 0.4

Benefit = 1 month variance = ₹ 24,000

Cost of Corrective action = ₹ 8,000

So, L = Benefit - Cost of corrective action = ₹ 24,000 - ₹ 8,000 = ₹ 16,000

Expected value of benefit = (1 - p) L

= 0.4 (16,000)

= ₹ 6,400

Yes, The variance must be investigated, because the cost of investigation is ₹ 4,000,

while the expected value of benefit is ₹ 6,400.

Thus, the inequality of C < (1 - p) L is satisfied.

→ Here, the probability of finding a corrective cause has been asked, that is, the probability of variance being controllable, so we have to find out the value of (1 - p).

→ To find out the Minimum probability (1 - p), we make use of the formula

C = (1 - p) L

4,000 = (1 - p) 16,000

(1 - p) = 4,000 / 16,000

(1 - p) = 0.25