Paper Solution Nov 2022

Example - 1:

SQ	SP	AQ	AP	RSP	Substitute
30,000	30	33,000	45.3	45	39

(2,000 × 15)

(i) Traditional/Conventional Approach:

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

= (30,000 × 30) - (33,000 × 45.30)

= 9,00,000 - 14,94,900

= **-5,94,900 (U)**

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

= 33,000 (30 - 45.30)

= **-5,04,900 (U)**

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

= 30 (30,000 - 33,000)

= **-90,000 (U)**

(ii) Opportunity Cost Approach:

(a) Planning Variance:

Original Standard Cost (30,000 × 30)	9,00,000
Less: Revised Standard Cost (30,000 × 45)	13,50,000
	-4,50,000 (U)

→ Unavoidable Planning Variance:

Original Standard Cost (30,000 × 30)	9,00,000
Less: Cost of Alternate Material (30,000 × 39)	11,70,000
	-2,70,000 (U)

→ Possibly Avoidable Planning Variance::

Cost of Alternate Material (30,000 × 39)	11,70,000
Less: Revised Standard Cost (30,000 × 45)	13,50,000
	-1,80,000 (U)

(b) Operating Variance:

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

= (30,000 × 45) - (33,000 × 45.30)

= 13,50,000 - 14,94,900

= **-1,44,900 (U)**

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

= 33,000 (45 - 45.30)

= **-9,900 (U)**

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

= 45 (30,000 - 33,000)

= **-1,35,000 (U)**

Example - 2:

(1) Production Budget:

Particulars	Products		
	A	B	C
Budgeted Sales	18,000	30,000	24,000
Add: Closing Stock	2,000	---	4,000
	20,000	30,000	28,000
Less: Opening Stock	---	10,000	8,000
Production	**20,000**	**20,000**	**20,000**

(2) Budgeted Direct Labour Hours:

Particulars	Budgeted Production (1)	Direct Labour Hours per unit (in minutes) (2)	Direct Labour Hours (3) = (1) × (2) / 60
Operation I			
Product A	20,000	36	12,000
Product B	20,000	84	28,000
Product C	20,000	60	20,000
			60,000
Operation II			
Product A	20,000	--	---
Product B	20,000	24	8,000
Product C	20,000	48	16,000
			24,000
Operation III			
Product A	20,000	18	6,000
Product B	20,000	12	4,000
Product C	20,000	--	---
			10,000

(3) Budget Labour Cost:

Operation	Direct Labour Hours (1)	Rate Per Hour (2)	Direct Labour Cost (3) = (1) × (2)
I	60,000	32	**19,20,000**
II	24,000	40	**9,60,000**
III	10,000	48	**4,80,000**

(4) Net Direct Labour Hours:

Total Labour Hours (13 Weeks × 6 Days × 8 Hours)	624
Less: Lost Hours	124
	500

(5) No. of Workers:

(Direct Labour Hours of Operations / Net Hours)

Operation I	60,000 / 500	**120**
Operation II	24,000 / 500	**48**
Operation III	10,000 / 500	**20**

(6) Man Power Budget:

Particulars	Operation I	Operation II	Operation III	Total
1. Direct Labour Hours	60,000	24,000	10,000	**94,000**
2. Direct Labour Cost	19,20,000	9,60,000	4,80,000	**33,60,000**
3. Number of Workers	120	48	20	**188**

Example - 3:

Working notes:

(1) Budgeted Sales Price:

Sales Price Variance = AQ (BSP - ASP)

20,000 = 36,000 (BSP) - 18,20,000

20,000 + 18,20,000 = 36,000 (BSP)

18,40,000 / 36,000 = BSP

BSP = 50

(2) Budgeted Profit:

Budgeted Selling Price		50
Less: Direct Material	10	
Direct Wages	12	
Variable Overheads	15	
Fixed Overheads	8	45
Budgeted Profit per unit		**5**

Total Budgeted Profit = 40,000 units × ₹ 5 per unit

= ₹ 2,00,000

(3) Actual Profit:

Actual Sales		18,20,000
Less: Direct Material	3,70,000	
Direct Wages	4,36,000	
Variable Overheads	5,42,000	
Fixed Overheads	3,26,000	16,74,000
Budgeted Profit per unit		**1,46,000**

Calculation of Variances:

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

= (36,000 × 10) - 3,70,000

= 3,60,000 - 3,70,000

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

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

Ratio is 2 : 3.

Material Rate Variance = 10,000 × 2/5 = **-4,000 (U)**

Material Usage Variance = 10,000 × 3/5 = **-6,000 (U)**

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

= (36,000 × 12) - 4,36,000

= 4,32,000 - 4,36,000

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

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

Ratio is 1 : 2.

Labour Rate Variance

1 4,000 = **4,000 (F)**

1 (?)

Labour Efficiency Variance

1 4,000 = **-8,000 (U)**

2 (?)

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

= (36,000 × 15) - 5,42,000

= 5,40,000 - 5,42,000

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

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

Ratio is 5 : 6.

Variable O/hs Rate Variance

1 2,000 = **10,000 (F)**

5 (?)

Variable O/hs Efficiency Variance

1 2,000 = **-12,000 (U)**

6 (?)

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

= (36,000 × 8) - 3,26,000

= 2,88,000 - 3,26,000

= **-38,000 (U)**

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

Ratio is 1.5 : 8.

Fixed O/hs Exp. Variance = 38,000 × 1.5/9.5 = **-6,000 (U)**

Fixed O/hs Volume Variance = 38,000 × 8/9.5 = **-32,000 (U)**

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

= 5 × (36,000 - 40,000)

= 5 × - 4,000

= **-20,000 (U)**

Reconciliation Statement of Profit

Particulars		Amount
Budgeted Profit		2,00,000
Sales Price Variance	20,000	
Sales Margin Volume Variance	-20,000	0
Standard Profit		2,00,000
(1) Material Price Variance	-4,000	
Material Usage Variance	-6,000	-10,000
(2) Labour Rate Variance	4,000	
Labour Efficiency Variance	-8,000	-4,000
(3) Variable O/hs Rate Variance	10,000	
Variable O/hs Effi. Variance	-12,000	-2,000
(4) Fixed O/hs Exp. Variance	-6,000	
Fixed O/hs Volume Variance	-32,000	-38,000
Actual Profit		**1,46,000**

Example - 4:

Cost of Investigation = C = ₹ 1,000

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

Benefit = 2 months variance = ₹ 12,000

Cost of Corrective action = ₹ 2,000

So, L = Benefit - Cost of corrective action = ₹ 12,000 - ₹ 2,000 = ₹ 10,000

Expected value of benefit = (1 - p) L

= 0.4 (10,000)

= ₹ 4,000

Yes, The variance must be investigated, because the cost of investigation is ₹ 1,000, while the expected value of benefit is ₹ 4,000.

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

1,000 = (1 - p) 10,000

(1 - p) = 1,000 / 10,000

(1 - p) = 0.10

→ Difficulties in analysis of variances: (Part of answer) (Theory - 4 marks)

(1) Difficulties in measuring results.

(2) The Interdependence between variances.

(3) The type of Efficiency Standard in operation.

(4) Inflation.

(5) The Controllability of Variances.

(6) Determining control limits.

Explain these points in detail.