Concept Note for B.Com. IV Sem.

Standard Costing & Variance Analysis

Q) Meaning and definition of Standard Costing.

⇒ 'Standard Costing' is a technique which uses standards for costs and revenues for the purpose of control through variance analysis.

Q) Objectives of Standard Costing

⇒
- To provide a formed basis for assessing performance & efficiencies.
- To control costs by establishing standards and analysis of variances.
- To assist in setting budgets.
- To enable the principle of 'management by exception' to be practised operational level.
- To motivate staff and management
- To provide a basis for estimating
- To provide guidance on possible ways of improving performance.

Q) Advantages of Standard Costing

⇒
- Budgets are compiled from standard.
- Standard costing highlights areas of strength and weakness.
- Actual costs can be compared with standard costs in order to evaluate performance.
- Standard costs can be used to value stock and provide a basis for setting wage incentive scheme.
- It helps to trace/allocate manufacturing costs to each individual unit produced.
- Control action is immediate, e.g. as soon as material is issued from stores to production it can be compared with the standard material which should have been used for the actual production.
- Transfer prices are based on standard rather than actual costs. If the latter were used inefficiencies in the form of excess costs might be passed on from one division to other division.

Q) Distinguish between Standard Costing & Budgetary Control.

⇒

Standard Costing	Budgetary Control
• Standard may be expressed both quantitative and monetary means.	→ Budgets are mainly expressed in monetary terms.
• It is concerned with ascertainment and Control of costs.	→ It is concerned with the overall profitability and financial position of the concern
• Any variance - adverse or favourable, is investigated	→ It puts emphasis more on excess over the budget.
• It emphasis is on what should be the cost	→ Its emphasis on the level of costs not to be exceeded.
• It is determined for each elements of cost	→ It is determined for a specific period.
• It is related with the Control of Costs and it is more intensive in scope	→ It is concerned with the operation of business as a whole and it is more extensive.
• Standard cost is a projection of Cost accounts.	→ Budget is a projection of financial accounts.

Q) What is Variance?

⇒ 'Variance' is the difference between planned, budgeted or standard cost and actual costs and similarly in respect of revenues.

Q) What do you mean by Variance analysis?

= Variance analysis is the analysis of variances arising in a standard costing system into their constituent parts. It is the analysis and comparison of the factors which have caused the difference between predetermined standards and actual results, with a view to eliminating inefficiencies.

Q) How do you analyse/ classify Variance?

= Variances are classified into the following:

(a) Material Variances (b) Labour Variances (c) Variable Overhead Variances (d) Fixed Overhead Variances (e) Sales Variances

(b) Profit Variances.

Formula for material cost variance:

(1) Material Cost Variance = (Standard Units × Standard Price) − (Actual Units × Actual Price)
= Standard Cost of Material − Actual Cost of Material used.

(2) Material Price Variance.
= Actual Quantity (Standard price per Unit of material − Actual Price per unit of material)

(3) Material Usage Variance
= Standard Price per Unit of material (Standard Quantity − Actual Quantity)

3(a) Material mix Variance
= Standard Price (Revised Standard Quantity − Actual Quantity)

Revised Standard Quantity
= (Total Quantity of Actual mix / Total Quantity of Standard mix) × Standard Quantity.

3(b) Material yield Variance.
= Standard Cost Per Unit (Standard output for actual mix − Actual output)

Labour Variance:

(1) Labour Cost Variance = (Standard labour hours produced × Standard Rate per hour) − (Actual direct labour hours × Actual Rate per hour)

(2) Labour Rate Variance: = Actual time (Standard rate − Actual Rate)

(3) Labour Efficiency Variance: = Standard Rate (Standard time for actual output − Actual time)

(4) Labour mix Variance: = Standard Rate (Revised Standard Time − Actual Time)

Revised Standard Time
= (Total actual time / Total Standard time) × Standard time.

(5) Labour Yield Variance
= Standard Cost Per Unit (Standard output for actual time − Actual output)

(6) Idle Time Variance: Idle hours × Standard Rate.

STANDARD COSTING AND VARIANCE ANALYSIS

Problem No: ① Calculate material Price Variance of Product A & B.

	A	B
Standard Price (Per Unit)	Rs 20	Rs 32
Actual Price (Per Unit)	Rs 24	Rs 30
Unit Produced	30 Units	250 Units

Solution ⇒ Material Price Variance
= Actual Quantity × (Standard Price − Actual Price)

A = 300 × (20−24) = 300 × −4 = Rs 1200 (A)

B = 250 × (32−30) = 250 × 2 = Rs 500 (F)

Problem No: ② From the following data Compute
(i) Material Cost Variance (ii) Material Price Variance

	Standard	Actual
Cost Per Unit (Rs)	5	6
Quantity (Units)	30	45

Solution ⇒ (i) Material Cost Variance
= (Standard Quantity × Standard rate) − (Actual Quantity × Actual
= (50 × 5) − (45 × 6) = 250 − 270 = Rs. 20 (A)

(ii) Material Price Variance
= Actual Quantity × (Standard Price − Actual Price)
= 45 (5−6) = Rs. 45 (A).

Problem No: 3

Calculate Material Price Variances of Product A and B.

Particulars	Products A	Products B
Standard Price (Per Unit)	Rs 10	Rs 16
Actual Price (Per Unit)	Rs 12	Rs 15
Unit Produced	600 Units	500 Units

Solution ⇒ Material Price Variance:
= Actual Quantity × (Standard Price − Actual Price)

A = 600 × (10−12) = 600 × −2 = Rs 1200 (A)

B = 500 × (16−15) = 500 × 1 = Rs 500 (F).

Solution of Problem No:- 5 ⟶ (a) - Material Cost Variance :

= Std. material Cost − Actual material Cost

= (Std. Qty × Std. Price) − (Actual Qty × Actual Price)

- Material A = (80×8) − (90×7.50)

= 640 − 675 = Rs 35(A).

- Material B = (70×3) − (80×4) = 210 − 320 = 110(A) } = Rs 145(F

(b) - Material Price Variance :

= Actual Qty (Std. Price − Actual Price)

- Material A = 90(8.00 − 7.50) = Rs 45(F)

- Material B = 80(3.00 − 4.00) = Rs 80(A) − Rs 35(A)

(c) - Material Usage Variance :

= Std. Price (Std. Qty − Actual Qty)

- Material A = 8(80 − 90) = Rs 80(A)

- Material B = 3(70 − 80) = Rs 30(A) = Rs 110(A)

(d) - Material Mix Variance :

$\frac{\text{Total weight of actual mix}}{\text{Total weight of standard mix}}$ × Std. Cost of Std. mix − Std. Cost of actual mix

$\left(\frac{170}{150} \times 80 \times 8 + 70 \times 3\right) - (90 \times 8 + 80 \times 3)$

= 963.3 − 960 = Rs 3.30(F

Verification :

= Material Price Variance + Material Usage Variance = Material Cost Variance

= Rs 35(A) + Rs 110(A) = Rs 145(A)

Answer by: PROF. P. K. BASU

Problem No: (4) From the following particulars Compute (a) Material Cost Variance (b) Material Price Variance (c) Material Usage Variance.

Quantity of material purchased 3000 Units
Value of Material purchased Rs 3000
Standard Quantity of materials required per tonne of output - 30 Units.
Standard rate of material - Rs 2.50 per unit
Opening stock of materials NIL
Closing stock of materials 500 Units
Output during the Period 80 tonnes.

Solution ⇒ Material Consumed = 3000 - 500 = 2500 Units
Actual rate of material = Rs 3000/3000 = Rs 3 Per Unit.
Standard Quantity for actual output = 30 x 80 = 2400 Units.

(a) Material Cost Variance = Standard Cost — Actual Cost
= (Standard Price x Standard Quantity) - (Actual Price x Actual Quantity)
= (Rs 2.50 x 2400) - (Rs 3 x 2500)
= 6000 - 7500 = Rs 1500 (A)

(b) Material Price Variance = Actual Quantity (Standard Price - Actual Price)
= 2500 x (Rs 2.50 - Rs 3) = 2500 x Rs .50 = Rs 1250 (

(c) Material Usage Variance = Standard Price x (Standard Quality - Actual Quantity)
= Rs 250 x (2400 - 2500) = Rs 2.50 x -100 = Rs 250

Verification:
Material Price Variance + Material Usage Variance = Material Cost Variance.
- Rs 1,250 (A) + Rs 250 (A) = Rs 1500 (A).

Problem No: 5 From the following data Calculate (a) Material Cost Variance (b) Material Price Variance (c) Material Usage Variance (d) Material Mix Variance.

Material	Standard		Actual	
	Qty (Units)	Price Per Unit	Qty Units.	Price Per Unit
A	80	8.00	90	7.50
B	70	3.00	80	4.00
	150		170	