

Standard Costing

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Date

Standard Costing

Material

Labour

Variable

Fixed

cost

cost

Overhead
(Voh)

Overhead
(Foh)

Std cost - Act cost

SC - AC

Cost

Std cost - Act cost

Price usage Rate Idle Efficiency

$(SP - AP) \times AP$ $(SQ - AQ) \times SP$ $(SR - AR) \times AR$ $(SH - AH) \times SR$

$\times AH$
paid
ie Gross

worked
ie net Exp

$(SR - AR) \times AH$ $(ST - AT) \times SR$

mix

yield

mix/gang

yield/sub efficiency

$(RSG - AG) \times SP$

$(RSH - AH) \times SR$

or $(SG - RSG) \times SP$

$(SH - RSH) \times SR$

Composition

or

var $(TSG - TAG) \times ISC$

TSG

Cost

Std Fixed OH - Act Foh

Sub-usage
var

Act production
 $(X) \text{ Std Foh}$
RR pu

Volume

Expenditure

$(\text{Bud Prod} - \text{Act Prod}) \text{ Bud Foh} (-)$
 $(X) \text{ Std Foh Rate Pu}$ Act Foh

Calendar

Capacity

Efficiency

$(\text{Bud Day} - \text{Act Day})$
 (X)

$(\text{Revised Bud hrs for Act days} - \text{Actual days})$
 (X)

$(\text{Std hrs for Act prod} - \text{Act net hrs taken})$
 (X)

Std Foh RR Per day

RR per hr

RR per hr

Beta Ltd. is manufacturing Product N. This is manufactured by mixing two materials namely Material P and Material Q. The Standard Cost of Mixture is as under:

Material P 150 ltrs. @ ₹ 40 per ltr.

Material Q 100 ltrs. @ ₹ 60 per ltr.

Standard loss @ 20 of total input is expected during production.

The cost records for the period exhibit following consumption:

Material P 140 ltrs. @ ₹ 42 per ltr,

Material Q 110 ltrs. @ ₹ 56 per ltr,

Quantity produced was 195 ltrs.

Calculate:

- (i) Material Cost Variance
- (ii) Material Usage Variance.
- (iii) Material Price Variance

ANSWER :

Date: / /

$\frac{195}{200} \times 150$

1) Pyq may 18
→ (Budget)

Type	Qty	pc	cost	Qty	pc	cost
P	150	146.25	40	140	42	
Q	100	97.5	60	110	56	
		243.75				
			11700	250		12040

Input = 250
→ loss (20%) (50)
Output = 200 (CFG)

Material variance

1) Cost

Standard cost - Actual cost

11700 - 12040

= ₹340A

Analysis of cost var

1) Price

(Standard price - Act price) × Aq

P → (40 - 42) × 140 = 280A

Q → (60 - 56) × 110 = 440F

160F

2) Usage var

(Sq - Aq) × Sp

P → (146.25 - 140) × 40 = 250F

Q → (97.5 - 110) × 60 = 750A

500A

		1,760	65	1,14,400	1,980		1,38,960	1,980	
Total									

Q. 5B

PYQ NOV 19 (10 MARKS)

The standard cost of a chemical mixture is as follows: 60% of Material A @ ₹ 50 per kg
40% Material B @ ₹ 60 per kg

A standard loss of 25% on output is expected in production. The cost records for a period has shown the following usage.

540 kg of Material A @ ₹ 60 per kg 260 kg of Material B @ ₹ 50 per kg

The quantity processed was 680 kilograms of good product. From the above given information Calculate:

- Material Cost Variance
- Material Price Variance
- Material Usage Variance
- Material Mix Variance
- Material Yield Variance.

ANSWER :

Basic Calculation

2) pyq nov 19

	Budget (75)	Standard (680)	Actual (680)
Type	qty	qty	pu price
A	60	510	50 25500
B	40	340	60 20400
Input	100	850	45900
loss (25%)	(20)	(170)	(120)
output	75	680	45900
	80		680 45400

Revised std qty (RSP)
 Std rate ratio of Actual usage
 i.e. 800 in 60:40
 A 480
 B 320

1) Mat cost var

1) Cost var

Std cost - Act cost

45900 - 45400

= 500 F

Analysis

1) Price var

$(SP - AP) \times AQ$

A $(50 - 60) \times 540 = 5400 A$

B $(60 - 50) \times 260 = 2600 F$

2800 A

2) Usage var

$(Std qty - Act qty) \times SP$

A $(510 - 540) \times 50 = 1500 A$

B $(340 - 260) \times 60 = 4800 F$

3300 F

Analysis of usage var

1) Mix. var

$$(Rsq - Aq) \times SP$$

$$A (480 - 540) \times 50 = 3000 A$$

$$B (320 - 260) \times 60 = 3600 F$$

$$\underline{6000 F}$$

2) Yield var

$$(Sq - Rsq) \times SP$$

$$A (550 - 480) \times 50 = 1500 F$$

$$B (340 - 320) \times 60 = 1200 F$$

$$\underline{2700 F}$$

PYQ MAY 19 (10 MARKS)



Q. 3A

A gang of workers normally consists of 30 skilled workers, 15 semi-skilled workers and 10 unskilled workers. They are paid at standard rate per hour as under:

Skilled	₹ 70
Semi-skilled	₹ 65
Unskilled	₹ 50

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output. During the week ended 31st March, 2019, the gang consisted of 40 skilled, 10 semi-skilled and 5 unskilled workers. The actual wages paid were at the rate of ₹ 75, ₹ 60 and ₹ 52 per hour respectively. Four hours were lost due to machine breakdown and 1,600 units were produced.

Calculate the following variances showing clearly adverse (A) or favourable (F)

- | | |
|----------------------------------|---------------------------|
| (i) Labour Cost Variance | (ii) Labour Rate Variance |
| (iii) Labour Efficiency Variance | (iv) Labour Mix Variance |
| (v) Labour Idle Time Variance | |

ANSWER :

$$\text{Labour Cost Variance} = \text{Standard Cost} - \text{Actual Cost}$$

3) Pyg may 19

→ Budget (2000)

Standard (1600) Actual (1600)

Type	hrs	Hrs	Rate	cost	hrs	rate	cost
S	1200 (30x40)	960	70	1200	1600	75	(40x40)
SS	600 (15x40)	480	65	600	400	60	(10x40)
OS	400 (10x40)	320	50	400	200	52	(5x40)
Total	2200	1760		11400	2200		15440

40x Actual
↑ hrs

4 hrs x Actual
↑ hrs

Hours paid

Idle hours

=

Hours worked

1600	-	160	=	1440
400	-	140	=	360
200	-	20	=	180
				<u>1980</u>

Revised std hrs
(12:6:4)

S 1080

SS 540

US 360

1980

1) Cost

SC-AC

114400 - 154400

= 40000 A

1) Rate var

(SR-AR) x AH paid

S (70-75) x 1600 = 8000 A

SS (65-60) x 400 = 2000 F

US (50-52) x 200 = 400 A

6400 A

2) Idle

Idle hrs x SR

160 x 70 = 11200 A

40 x 65 = 2600 A

20 x 50 = 1000 A

14800 A

(Always adverse)

3) SH-3) Efficiency

SH-AH (worked) x SR

S (960-1440) x 70 = 33600 A

SS (480-360) x 65 = 7800 F

US (320-180) x 50 = 7000 F

18800 A

1) Mix
(RSH - AH asked) XSR

$$S (1080 - 1440) \times 70 = 25200A$$

$$SS (540 - 360) \times 65 = 11700F$$

$$US (360 - 180) \times 50 = 9000F$$

$$4500A$$

Extra:-

2) yield

(SH - RSH) XSR

$$S (960 - 1080) \times 70 = 8400A$$

$$SS (480 - 540) \times 65 = 3900A$$

$$US (320 - 360) \times 50 = 2000A$$

$$14300A$$

Q13. The following information was obtained from the records of a manufacturing unit using standard costing system.

	Standard	Actual
Production	4,000 units	3,800 units
Working days	20	21
Machine hours	8,000 hours	7,800 hours
Fixed Overhead	₹ 4,00,000	₹ 3,90,000
Variable Overhead	₹1,20,000	₹1,20,000

You are required to CALCULATE the following overhead variance:

- (a) Variable overhead variances
- (b) Fixed overhead variances

Q14. A company has a normal capacity of 120 machines, working 8 hours per day for 25

13)
→ 1) Voh

can:- 1 Table

Budget			Standard			Actual		
output:- 4000			3800			3800		
Hr rate cost			hr rate cost			hr rate cost		
8000	15	120000	7600	15	114000	7800	15.3846	120000

$$\begin{aligned} &1) \text{ Voh Exp var} \\ &(\text{Std rate} - \text{Act rate}) \times \text{Act hrs} \\ &(15 - 15.3846) \times 7800 \\ &= 3000 \text{ A (approximately)} \end{aligned}$$

$$\begin{aligned} &2) \text{ Voh cost var} \\ &\text{Std cost} - \text{Act cost} \\ &114000 - 120000 \\ &= 6000 \text{ A} \end{aligned}$$

$$\begin{aligned} &3) \text{ Voh Eff var} \\ &(\text{ST} - \text{AT}) \times \text{STR} \\ &(7600 - 7800) \times 15 \\ &= 3000 \text{ A} \end{aligned}$$

2) Folt

un: 2 Table

Particulars	Budget	Actual	Recovery Rate (RR)
Over heads	4,00,000	390,000	1 unit = 100
Output	4000	3800	1 day = 20,000
Days	20	21	1 hour = 50
Hours	8000	7800	
<u>Idle hours</u>	-	-	
Hours worked	8000	7800	
output	4000	3800	1 unit = 100

↳ khudse assume nhi karna unless specified in question

1) Folt cost var

$$\begin{aligned} \text{Std fixed OH} &= \text{Actual prodn} \times \text{Std RR pu} \\ &= 3800 \times 100 \\ &= 380000 \\ \therefore \text{Folt cost var} &= \text{Std fixed OH} - \text{Act Folt} \\ &= 380000 - 390000 \\ &= 10,000 A \end{aligned}$$

2) Folt Exp var

$$\begin{aligned} \text{Budgeted Folt} - \text{Actual Folt} \\ 4,00,000 - 390,000 \\ = 10,000 F \end{aligned}$$

$$\begin{aligned}
 & 3) \text{ Foh vol var} \\
 & (\text{Bud Prod'n} - \text{Act prod'n}) \times \text{RR pu} \\
 & = (4000 - 3800) \times 100 \\
 & = 20000 \text{ A}
 \end{aligned}$$

$$\begin{aligned}
 & 4) \text{ Calendar var} \\
 & (\text{Bud Days} - \text{Act Days}) \times \text{RR per day} \\
 & (20 - 21) \times 20000 \\
 & = 20,000 \text{ F}
 \end{aligned}$$

$$\begin{aligned}
 & 5) \text{ Capacity var} \\
 & (\text{Revised Bud hrs for Act days} - \text{Act hrs}) \times \text{RR per hr}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Revised Bud hrs for Act day} \\
 & \frac{8000 \times 21}{20} = 8400
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{Capacity var} & = \\
 & (8400 - 7800) \times 50 \\
 & = 30000 \text{ A}
 \end{aligned}$$

$$\begin{aligned}
 & 6) \text{ Efficiency var} \\
 & (\text{Std hrs for Act net Prod'n} - \text{Act net hrs}) \times \text{RR per hr}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Std hr for Act prod'n} \\
 & = \frac{8800 \times 8000}{4000}
 \end{aligned}$$

$$= 17600$$

∴ Efficiency var

$$= (76000 - 78000) \times 5\%$$
$$= 10000 \text{ A}$$