RAHUL SHIKHA ACADEMY
RSA
Quest For Excellence

CA INTER

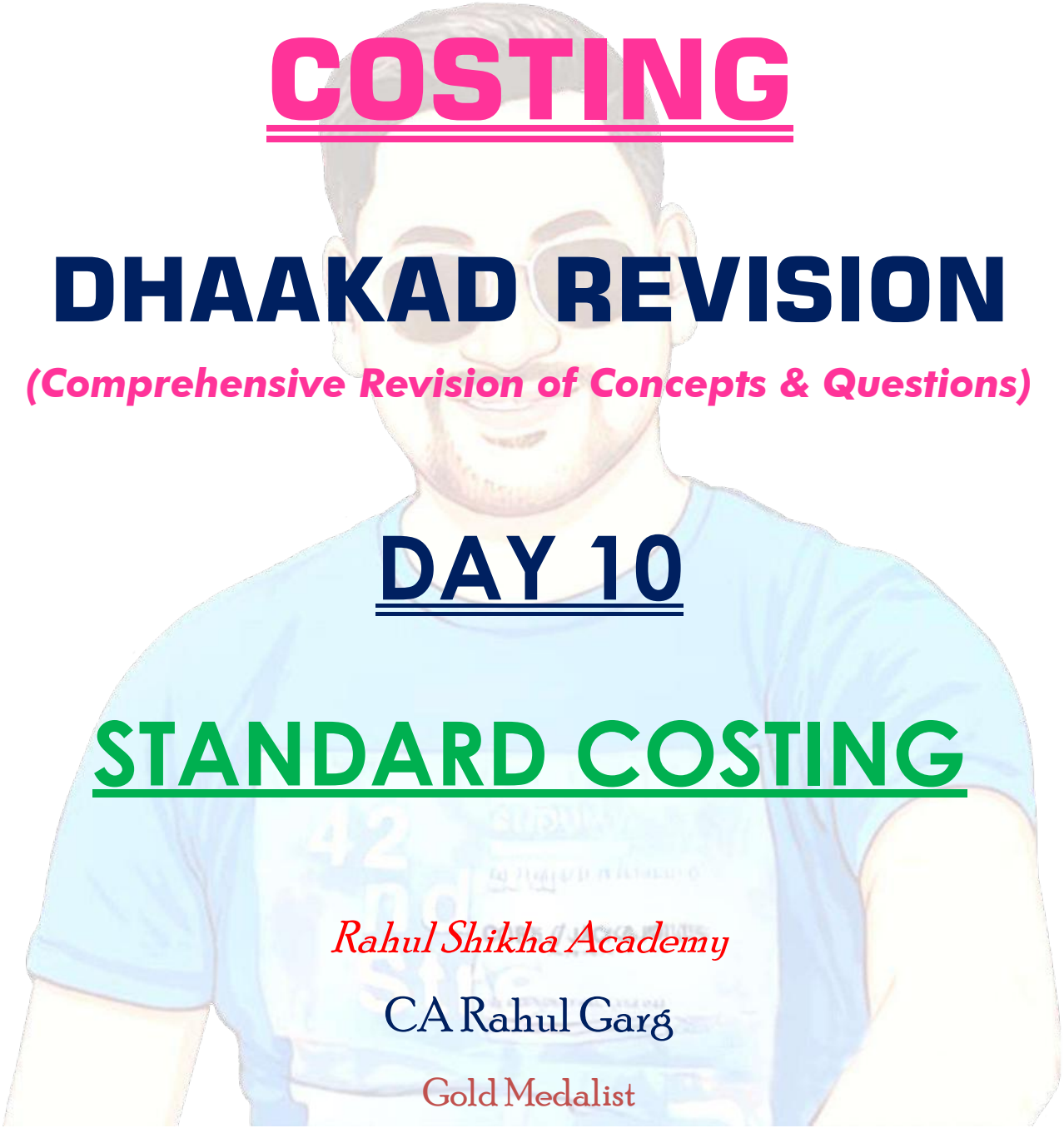
COSTING

DHAAKAD REVISION

(Comprehensive Revision of Concepts & Questions)

DAY 10

STANDARD COSTING



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STANDARD COSTING

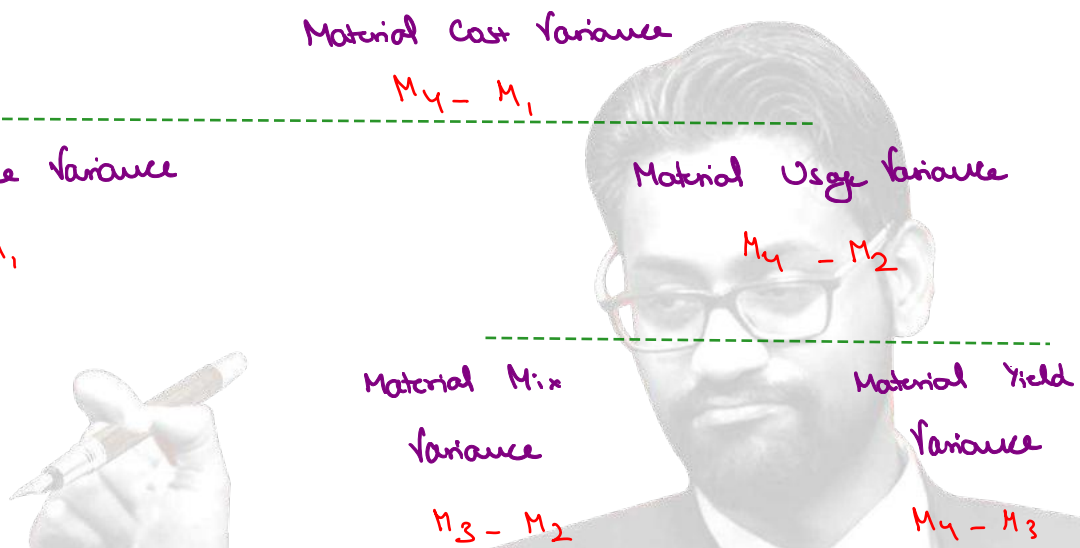
CONCEPT	BASICS

Meaning of Standard	Standard means a criteria or yardstick, against which actual activity can be compared to determine the difference between the two.
Meaning of Standard Cost	Standard Cost is "what should have been" under the given set of operating conditions.
Variance	Variance represents the deviation of actual performance from the standard performance. It can be favourable or unfavourable.

CONCEPT	MATERIAL COST VARIANCES

STEPS	
M_1	Actual Cost of Materials Consumed
	Actual Qty of Input Consumed × Actual Material Cost/ Unit of Input
M_2	Standard Cost of Actual Material Quantity
	Actual Qty of Input Consumed × Standard Material Cost/ Unit of Input
M_3	Standard Cost if Actual Material Quantity is in Standard Ratio
	Actual Qty of Input Consumed (in Standard Ratio) × Standard Material Cost/ Unit of Input
M_4	Standard Material Cost of Actual Production
	Actual Production × Standard Material Cost/ Unit of Output
	Budgeted Cost of Material Consumed
	Budgeted Qty of Input Consumed × Standard Material Cost/ Unit of Input

VARIANCE CHART



CONCEPT MATERIAL COST VARIANCES (PRESENCE OF STOCK)

We will compute 1 additional variance i.e. Material Price Variance (at the time of purchase),

M_2 (Purchase) – M_1 (Purchase)

Where,

M_1 (Purchase) = Actual Qty of Input Purchased × Actual Material Cost/ Unit of Input

M_2 (Purchase) = Actual Qty of Input Purchased × Standard Material Cost/ Unit of Input

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Rest, all the variances shall be computed as per consumption quantity.

M_1 (Consumption) = Value of Opening Stock + Value of Purchases – Value of Closing Stock

- Given or
- at Stdd. Rate

Given

(FIFO is assumed)

i.e value at rate of purchase

M_2 (Consumption) = Actual Qty of Input Consumed × Standard Material Cost/ Unit of Input

(Op. Sk. + Pur – Cl. Sk) × SR

AQ

Normal

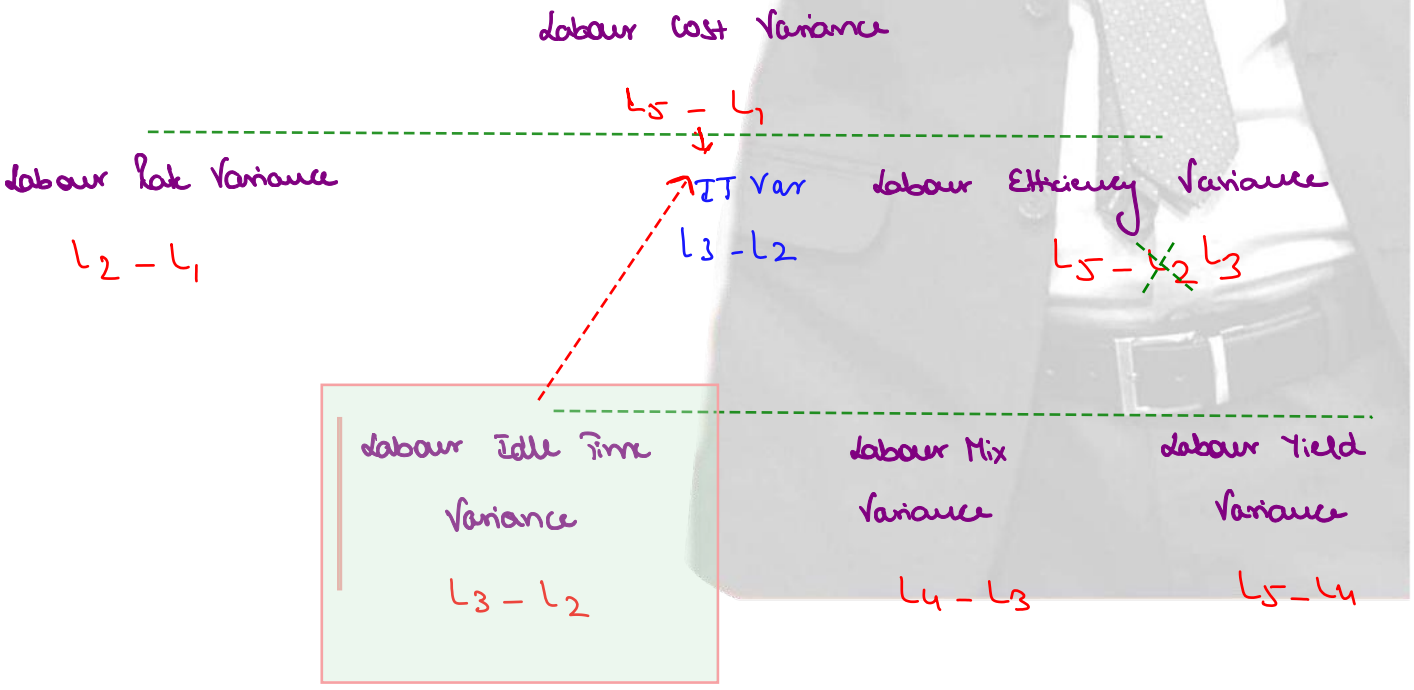
in SR

M_3 & M_4:

CONCEPT	LABOUR COST VARIANCES

STEPS	
L_1	Actual Labour Cost incurred for Actual Time Paid for
	Actual time paid for × Actual Rate
L_2	Labour Cost incurred for Actual Time Paid for but at standard rate
	Actual time paid for × Standard Rate
L_3	Standard Labour Cost for Actual Time worked
	Actual time worked × Standard Rate
	AH Paid - Idle Time
L_4	Standard Labour Cost if Actual Time worked is in Standard Ratio
	Actual time worked (in Standard Ratio) × Standard Rate
L_5	Standard Labour Cost of Actual Production
	Actual Production × Standard Labour Cost/ Unit of Output, or Standard Hours Produced × Standard Rate/ Hour
	Budgeted Cost of Labour
	Budgeted Hours × Standard Rate/ Hour

VARIANCE CHART



CONCEPT	VARIABLE OVERHEAD VARIANCES

STEPS	
VO_1	Actual Variable Overheads Incurred A Hrs. × AR A o/p × Act Rate o/p
VO_2	Standard Variable Overheads for Actual Hours Worked
	Actual Hours Worked × Standard Variable Overhead Rate per Hour Budg Var Ohs / Budg. Hrs
VO_3	Standard Variable Overheads for Actual Output
	Actual Output × Standard Variable Overhead Rate per Unit of Output

Budg. Var Ohs / Budg. o/p

VARIANCE CHART

Variable On Cost Variance

$V_{O3} - V_{O1}$

Variable On Expenditure Variance

$V_{O2} - V_{O1}$

Variable On Efficiency Variance

$V_{O3} - V_{O2}$

CONCEPT	FIXED OVERHEAD VARIANCES

STEPS	
FO_1	Actual Fixed Overheads Incurred
FO_2	Budgeted Fixed Overheads
FO_3	Standard Fixed Overheads for Actual Days Worked
	Actual Days Worked × Standard Fixed Overhead per Day Budg. fix. OHs / Budg. Days
FO_4 (VO2)	Standard Fixed Overheads for Actual Hours Worked
	Actual Hours Worked × Standard Fixed Overhead per Hour Budg. fix. OH / Budg. Hrs
FO_5 (VO3)	Standard Fixed Overheads for Actual Output
	Actual Output × Standard Fixed Overhead per Unit of Output Budg. fix. OH / Budg. o/p

VARIANCE CHART

Fixed OH Cost Variance
$FO_5 - FO_1$

Fixed OH Expenditure Variance
$FO_2 - FO_1$

Fixed OH Volume Variance
$FO_5 - FO_2$

Fixed OH Calendar Variance
$FO_3 - FO_2$

Fixed OH Capacity Variance
$FO_4 - FO_3$

Fixed OH Efficiency Variance
$FO_5 - FO_4$

CQ 1

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:

1. Material Cost Variance
2. Material Price Variance
3. Material Usage Variance
4. Material Mix Variance
5. Material Yield Variance

CQ 2

One kg. of product K requires 2 chemicals A and B. Following were the details of product K for the month of June 2023.

a) Standard mix Chemical A 50% and Chemical B 50%

b) Standard price per kg. of Chemical A ₹ 12 and Chemical B ₹ 15

c) Actual input of Chemical B 70 kgs.

d) Actual price per kg. of Chemical A ₹ 15

e) Standard normal loss 10% of total input

f) Actual output is 90 kg.

g) Total Materials cost variance is ₹ 650 adverse

h) Total Materials yield variance is ₹ 135 adverse

You are required to calculate:

1. Total Material mix variance
2. Total Material usage variance
3. Total Material price variance
4. Actual loss of actual input

5. Actual input of chemical A

6. Actual price per kg. of chemical B

CQ 3

NPX Ltd. uses standard costing system for manufacturing of its product X. Following is the budget data given in relation to labour hours for manufacture of 1 unit of Product X :

Labour	Hours	Rate (₹)
Skilled	2	6
Semi-Skilled	3	4
Un-Skilled	5	3
Total	10	

In the month of January, total 10,000 units were produced following are the details:

Labour	Hours	Rate (₹)	Amount (₹)
Skilled	18,000	7	1,26,000
Semi-Skilled	33,000	3.5	1,15,500
Un-Skilled	58,000	4	2,32,000
Total	1,09,000		4,73,500

Actual Idle hours (abnormal) during the month:

Skilled : 500

Semi- Skilled : 700

Unskilled : 800

Total : 2,000

Calculate Labour Variances.

CQ 4

Following data is obtained from the books of manufacturing company regarding variable overheads:

Budgeted production for January	300 units
Budgeted variable overhead	₹ 7,800
Standard time for one unit	20 hours
Actual production for January	250 units
Actual hours worked	4,500 hours
Actual variable overhead	₹ 7,000

Compute the overheads variances.

CQ 5

The cost detail of J & G Ltd. for the month of September is as follows :

	Budgeted	Actual
Fixed overhead	₹ 15,00,000	₹ 15,60,000
Units of Production	7,500	7,800
Standard time for one unit	2 hours	-
Actual hours worked	-	16,000 hours

Calculate (i) Fixed Overhead Cost Variance (ii) Fixed Overhead Expenditure Variance (iii) Fixed Overhead Volume Variance (iv) Fixed Overhead Efficiency Variance and (v) Fixed Overhead Capacity Variance.

CQ 6

In a manufacturing company the standard units of production for the year were fixed at 1,20,000 units and overhead expenditures were estimated to be as follows:

Particulars	Amount (₹)
Fixed	12,00,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	1,80,000
Variable	6,00,000

Actual production during the month of April, 2021 was 8,000 units. Each month has 20 working days. During the month there was one public holiday. The actual overheads were as follows:

Particulars	Amount (₹)
Fixed	1,10,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	19,200
Variable	48,000

You are required to calculate the following variances for the month of April 2021:

1. Overhead Cost variance
2. Fixed Overhead Cost variance
3. Variable Overhead Cost variance
4. Fixed Overhead Volume variance
5. Fixed Overhead Expenditure Variance

6. Calendar Variance

HQ 7

Raw material 'A' and 'B' having standard cost of ₹ 20/kg and ₹ 30/kg are mixed in the standard ratio of 60% and 40% to manufacture 'Z'.

During a particular week 1,200 kg of 'A' costing ₹ 25,000 and 1,000 kg of 'B' costing ₹ 28,000 were mixed to produce 2,200 kgs of Z.

Calculate all material cost variances.

HQ 8

Chingu Ltd. has established the following standard mix for producing 9 tonnes of product Z.

	₹
5 tonnes of material A at ₹ 7 per tone	35
3 tonnes of material B at ₹ 5 per tone	15
2tonnes of material C at ₹ 2 per tone	4
	54

A standard loss of 10% of input is expected to occur. Actual input was as under :

53,000 tonnes of material A at ₹ 7 per tonne.

28,000 tonnes of material B at ₹ 5.30 per tonne.

19,000 tonnes of material C at ₹ 2.20 per tonne.

Actual output for a period was 92,700 tonnes of product Z.

Compute material variances.

HQ 9

A building can be constructed by engaging a gang of workers as per details given below, for 100 working days of eight hours each.

	Skilled	Semi-skilled	Unskilled
No. of workers in the gang	6	8	6
Standard rate of wages/hr.	₹ 25	₹ 20	₹ 16

Actual completion of the work however took 104-days of eight hours each. This includes 16 hours of stoppages due to heavy rains. The actual number of workers engaged and the actual rates paid are given below :

	Skilled	Semi-skilled	Unskilled
No. of workers engaged	8	6	6
Actual rate of wages/hr.	₹ 30	₹ 24	₹ 16

Calculate the following variances :

a. Labour cost variances

b. Labour rate variance

c. Labour efficiency variance

d. Labour mix variance

e. Idle time variance

HQ 10

Following information was obtained from records of a manufacturing unit :

	Standard	Actual
Production	4,000 units	3,800 units
Working days	20	21
Fixed Overhead	₹ 40,000	₹ 39,000
Variable Overhead	12,000	12,000

You are required to calculate the following overhead variance:

a. Variable overhead variance

b. Fixed overhead variances

HQ 11

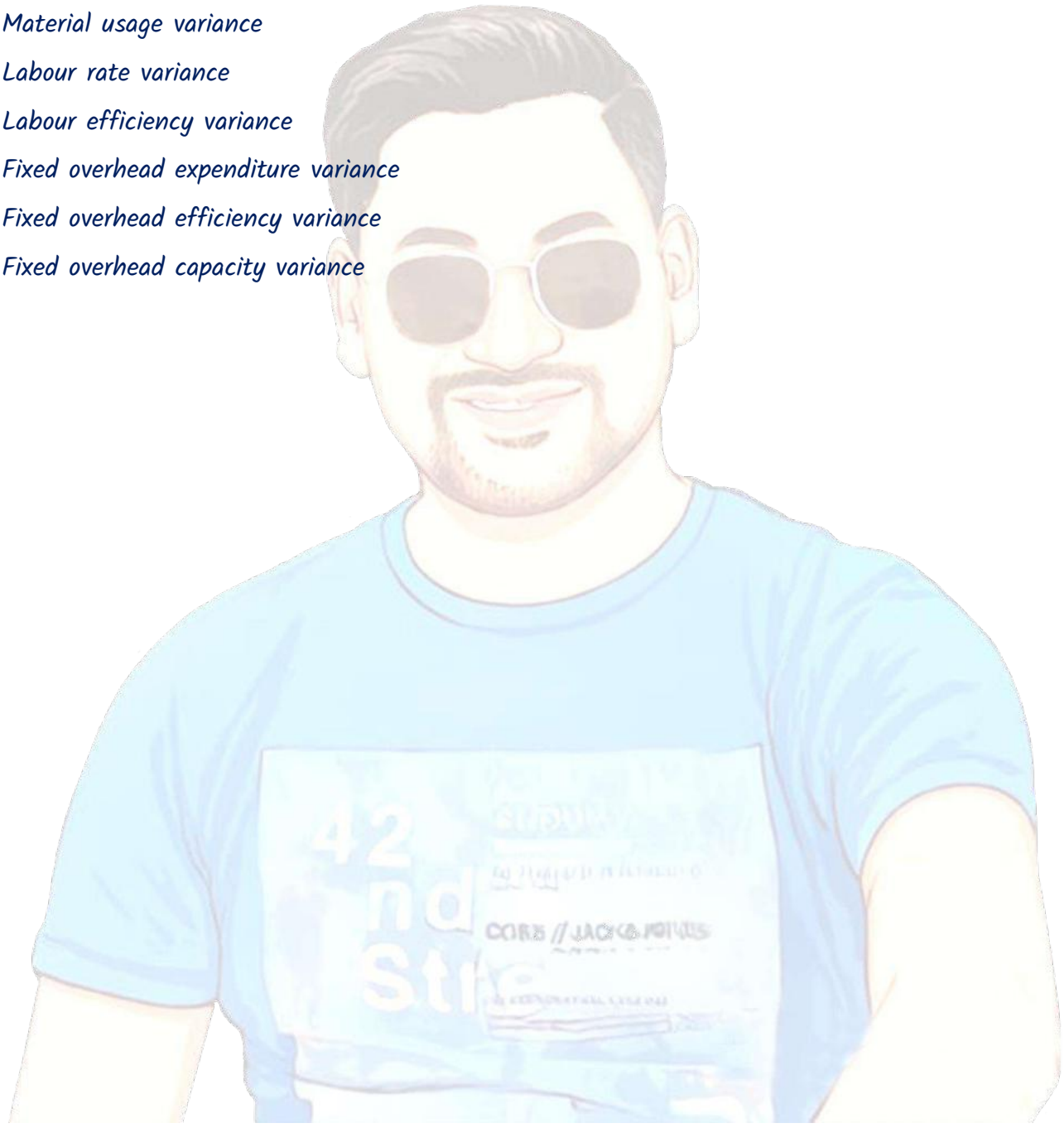
The following information is available from the cost records of a Company for July, 2016:

1.	Material purchased	22,000 pieces	₹ 90,000
2.	Material consumed	21,000 pieces	
3.	Actual wages paid for	5,150 hours	₹ 25,750
4.	Fixed Factory overhead incurred		₹ 46,000
5.	Fixed Factory overhead budgeted		₹ 42,000
6.	Units produced	1,900	
7.	Standard rates and prices are :		
	Direct material	₹ 4.50 per piece	
	Standard input	10 pieces per unit	

	Direct labour rate	₹ 6 per hour
	Standard requirement	2.5 hours per unit
	Overheads	₹ 8 per labour hour

You are required to calculate the following variances :

a. Material price variance
b. Material usage variance
c. Labour rate variance
d. Labour efficiency variance
e. Fixed overhead expenditure variance
f. Fixed overhead efficiency variance
g. Fixed overhead capacity variance



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CQ - 1

M_1: Actual Qty × Actual Rate

A	540	× 60	=	32400
B	260	× 50	=	13000
				45400

M_2: Actual Qty. × Stdd. Rate

A	540	× 50	=	27000
B	260	× 60	=	15600
				42600

M_3: Actual Qty (Stdd. Ratio) × Stdd Rate

Total 800 kg (540 + 260) in stdd ratio 60% & 40%

A	460	× 50	=	24000
B	320	× 60	=	19200
				43200

M_4: Actual Output × Stdd. Rate/unit of o/p

$$680 \times 67.50 = 45900$$

	SQ	SR		
A	60	50	=	3000
B	40	60	=	2400
	100			5400
−20% loss	(20)			−
	80			5400

$$1 \text{ o/p} = \frac{5400}{80} = 67.50$$

Act o/p = 100

loss = 25

Input = 125 (o/p + loss)

Loss as % of I/p

$$= \frac{25}{125} \times 100 = 20\%$$

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MCV

$M_4 - M_1$

45900 − 45400 = 500 (F)

MPV

$M_2 - M_1$

42600 − 45400 = 2800 (A)

MUV

$M_4 - M_2$

45900 − 42600 = 3300 (F)

MMV

$M_3 - M_2$

43200 − 42600

= 600 (F)

MYV

$M_4 - M_3$

45900 − 43200

= 2700 (F)

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CQ - 2

Standard	Q	R
A	50%	12
B	50%	15

Stdd loss 10%.

Actual	Q	R
A	x	15
B	70	y
- Loss	10	
Act. O/P	90	

Actual loss of Actual I/P

Let actual qty of chemical A be x kg.

and actual price of chemical B be y ₹/kg.

M_1 : AQ x AR

A $x \times 15 = 15x$

B $70 \times y = 70y$

$15x + 70y$

M_2 : AQ x SR

A $x \times 12 = 12x$

B $70 \times 15 = 1050$

$12x + 1050$

M_3 : RSQ x SR

Total Actual qty $(x + 70)$ in standard ratio 50 : 50

A $(.5x + 35) \times 12 = 6x + 420$

B $(.5x + 35) \times 15 = 7.5x + 525$

$13.5x + 945$

M_4 : Act. O/P x Stdd Mat cost/ Unit of O/P

$90 \times \frac{1350}{90}$

$= 1350$

	Q	R	Amt.
A	50	12	600
B	50	15	750
	100		1350
- NL	10		-
	90		1350

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(a) Material Yield Variance = 135 (A)

$M_4 - M_3 = 135$ (A)

$1350 - (13.5x + 945) = -135$

$1350 - 13.5x - 945 = -135$

$-13.5x = -540$

$x = 40$

(b) Material Cost Variance = 650 (A)

$M_4 - M_1 = 650$ (A)

$1350 - [15(40) + 70y] = -650$

$1350 - 600 - 70y = -650$

$-70y = 1400$

$y = 20$

(c) $M_1 = 15x + 70y$

$= 15(40) + 70(20)$

$= 2000$

(d) $M_2 = 12x + 1050$

$= 12(40) + 1050$

$= 1530$

(e) $M_3 = 13.5x + 945$

$= 13.5(40) + 945$

$= 1485$

(i.) Total Material Mix Variance

$= M_3 - M_2$

$= 1485 - 1530$

$= 45$ (A)

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(2.) Total Material Usage Variance

$= M_4 - M_2$

$= 1350 - 1530$

$= 180\ (A)$

(3) Total Material Price Variance

$= M_2 - M_1$

$= 1530 - 2000$

$= 470\ (A)$

(4.) Actual loss of Actual I/P

= Actual Total I/P − Actual O/P

$= (40 + 70) - 90$

$= 110 - 90$

$= 20$ kg.

(5.) Actual Input of chemical A

$= 40$ kg.

(6.) Actual Price per kg of chemical B

$= 20$ ₹

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CQ - 3

(a) L_1 : Actual labour cost incurred

J	126000
SS	115500
US	232000
	473500

L_2 : Actual Hours paid x Standard Rate

J	18000	x	6	=	108000
SS	33000	x	4	=	132000
US	58000	x	3	=	174000
					414000

L_3 : Actual Hours worked x Standard Rate

J	18000 − 500	i.e	17500	x 6	=	105000
SS	33000 − 700	i.e	32300	x 4	=	129200
US	58000 − 800	i.e	57200	x 3	=	171600
						405800

Act. Time Paid − Idle Time = Act. Hrs. worked 107000

L_4 : Revised standard Hours x Standard Rate

Total 107000 hours in standard ratio 2 : 3 : 5

J	21400	x	6	=	128400
SS	32100	x	4	=	128400
US	53500	x	3	=	160500
					417300

L_5 : Actual O/P x Stdd. labour cost/ Unit of output

10000 x 39 = 390000

	H	R	Amt.
J	2	6	12
SS	3	4	12
US	5	3	15
			39

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Lab. Cost Var.

$L_5 - L_1$

$390000 - 473500 = 83500\ (A)$

Lab. Rate Var.

$L_2 - L_1$

$414000 - 473500$

$= 59500\ (A)$

Lab Idle Time Var

$L_3 - L_2$

$405800 - 414000$

$= 8200\ (A)$

Lab. Efficiency var.

$L_5 - L_3$

$390000 - 405800$

$= 15800\ (A)$

Lab Mix Var.

$L_4 - L_3$

$417300 - 405800$

$= 11500\ (F)$

Lab. Yield Var.

$L_5 - L_4$

$390000 - 417300$

$= 27300\ (A)$

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CQ - 4

VO_1 : Actual Variable Overheads

: 7000

VO_2 : Actual Hours x Standard Variable OH/ Hour

$$4500 \times \frac{1.30}{\frac{7800}{300 \times 20}} = 5850$$

VO_3 : Actual Output x Standard Variable OH/ Output

$$250 \times \frac{26}{\frac{7800}{300}} = 6500$$

Var OH Cost Variance

$VO_3 - VO_1$

$6500 - 7000 = 500\ (A)$

Var OH Expenditure Variance

$VO_2 - VO_1$

$5850 - 7000 = 1150\ (A)$

Var OH Efficiency Variance

$VO_3 - VO_2$

$6500 - 5850 = 650\ (F)$

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CQ – 5

FO_1 : Actual fixed Overheads

: 1560000

FO_2 : Budgeted fixed Overheads

: 1500000

FO_3 : Actual Days × Stdd fixed OH/ Day

N.A , so 15,00,000

FO_4 : Actual Hours × Stdd. fixed OH/ Hour

$$16000 \times \frac{100}{\frac{15,00,000}{7500 \times 2}} = 16,00,000$$

FO_5 : Actual Output × Stdd. fixed OH/ Unit of Output

$$7800 \times \frac{200}{\frac{15,00,000}{7500}} = 1560000$$

F. OH Cost Var.

$FO_5 - FO_1$

1560000 – 1560000 = NIL

F.OH Expenditure Var

$FO_2 - FO_1$

1500000 – 1560000 = 60000 (A)

F.OH Volume Var

$FO_5 - FO_2$

1560000 – 1500000 = 60000 (F)

F.OH Calendar Var

$FO_3 - FO_2$

1500000 – 1500000

= NIL

F.OH Capacity Var

$FO_4 - FO_3$

1600000 – 1500000

= 100000 (F)

F.OH Efficiency Var

$FO_5 - FO_4$

1560000 – 1600000

= 40000 (A)

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CQ – 6

(A) The given budgeted data is for the full year, whereas question is asking variances for a month, so we shall convert this data into monthly basis

Particulars	Value (P.a.)	Value (P.M.)
Production	120000	10000
Fixed ons	1200000	100000
Semi - Var. ons	180000	15000
Variable ons	600000	50000

(B) Analysis of Budgeted ons

1	2	3
Fixed ons	Semi - Var ons	Variable ons
100000	15000	50000
	60% Fixed → 9000	40% Variable → 6000
	109000	56000

(C) Analysis of Actual ons

1	2	3
Fixed ons	Semi - Var ons	Variable ons
110000	19200	46000
	60% Fixed → 11520	40% Variable → 7680
	121520	53680

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(D) Variable OH Variances steps

VO_1 : Actual Variable OHs

: 55680

VO_3 : Actual O/P x Stdd. Var OH /unit of O/P

$$8000 \times \frac{5.60}{\frac{56000}{10000}} = 44800$$

(E) Fixed OH Variances steps

FO_1 : Actual Fixed OHs

: 121520

FO_2 : Budgeted Fixed OHs

: 109000

FO_3 : Actual Days x Stdd fixed OH/ Day

$$19 \times \frac{5450}{\frac{109000}{20}} = 103550$$

FO_4 : Actual Hours x Stdd. Fixed OH/ Hour

N.A., so 103550

FO_5 : Actual output x Stdd. Fixed OH/ Unit of O/P

$$8000 \times \frac{10.90}{\frac{109000}{10000}} = 87200$$

(I) Overhead cost variance

$FO_5 + VO_3 - FO_1 - VO_1$

$87200 + 44800 - 121520 - 55680$

45200 (A)

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(2.) Fixed overhead cost variance

$FO_5 - FO_1$

87200 − 121520

34320 (A)

(3.) Variable overhead cost variance

$VO_3 - VO_1$

44800 − 55680

10880 (A)

(4.) Fixed overhead volume variance

$FO_5 - FO_2$

87200 − 109000

21800 (A)

(5.) Fixed overhead Expenditure Variance

$FO_2 - FO_1$

109000 − 121520

12520 (A)

(6.) Calendar variance

$FO_3 - FO_2$

103550 − 109000

5450 (A)

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MCQ - 7

M_1 : Actual Qty. x Actual Rate

A	25000
B	28000
	53000

M_2 : Actual Qty. x Standard Rate

A	1200	x	20	=	24000
B	1000	x	30	=	30000
					54000

M_3 : Actual Qty (in standard ratio) x Standard Rate

Total 2200 kg. (1200 + 1000) in 60% & 40%.

A	1320	x	20	=	26400
B	880	x	30	=	26400
					52800

M_4 : Actual Output x Standard cost / unit of Output

2200 x 24 = 52800

SQ SR

A	60	x	20	=	1200	Imp
B	40	x	30	=	1200	
	100 O/P			⟶	2400	

1 O/P → 2400/100 = 24 ₹

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Material Cost Variance

$M_4 - M_1$

₹2800 − ₹3000 = 200 (A)

Material Price Variance

$M_2 - M_1$

₹4000 − ₹3000 = 1000 (F)

Material Usage Variance

$M_4 - M_2$

₹2800 − ₹4000 = 1200 (A)

Material Mix Variance

$M_3 - M_2$

₹2800 − ₹4000 = 1200 (A)

Material Yield Variance

$M_4 - M_3$

₹2800 − ₹2800 = NIL

HQ - 8

M_1 =	A	53,000	x 7	= 3,71,000	
	B	28,000	x 5.3	= 1,48,400	
	C	19,000	x 2.2	= 41,800	5,61,200
M_2 =	A	53,000	x 7	= 3,71,000	
	B	28,000	x 5	= 1,40,000	
	C	19,000	x 2	= 38,000	5,49,000

M_3 = Actual Qty. 1,00,000 tonne in Standard ratio 5:3:2

A	50,000	x 7	= 3,50,000	
B	30,000	x 5	= 1,50,000	
C	20,000	x 2	= 40,000	5,40,000

M_4 = 92,700 x 54 / 9 = 5,56,200

(after standard normal loss of 10%)

Material Cost Variance

$M_4 - M_1$

5,56,200 - 5,61,200 = 5,000 (A)

Material Price Variance	Material Usage Variance
$M_2 - M_1$	$M_4 - M_2$
5,49,000 - 5,61,200 = 12,200 (A)	5,56,200 - 5,49,000 = 7,200 (F)

Material Mix Variance	Material Yield Variance
$M_3 - M_2$	$M_4 - M_3$
5,40,000 - 5,49,000 = 9,000 (A)	5,56,200 - 5,40,000 = 16,200 (F)

HQ - 9

L_1 = Actual Time Paid for × Actual Rate

S	(104 × 8 × 8)	× 30	=	199680
SS	(104 × 8 × 6)	× 24	=	119808
US	(104 × 8 × 6)	× 16	=	79872
		Rate/ Hour		399360

Days × Hrs/ Day × No. of Workers = Per Worker

L_2 = Actual Time Paid for × Stdd. Rate

S	(104 × 8 × 8)	× 25	=	166400
SS	(104 × 8 × 6)	× 20	=	99840
US	(104 × 8 × 6)	× 16	=	79872
				346112

L_3 = Actual Time Worked × Stdd. Rate

Actual Time Paid for = 104 Days

− Idle Time (16 hrs / 8 hrs per Day) = (2) Days

102 Days

S	(102 × 8 × 8)	× 25	=	163200
SS	(102 × 8 × 6)	× 20	=	97920
US	(102 × 8 × 6)	× 16	=	78336
	16320 hrs.			339456

L_4 = Actual Time Worked × Stdd Rate

(in stdd. Ratio)

Total 16320 hours in stdd. Ratio 6 : 8 : 6

J	4896	× 25	=	122400
SS	6528	× 20	=	130560
VJ	4896	× 16	=	78336
				331296

L_5 = Budgeted Time × Stdd. Rate

J	(100 × 8 × 6)	× 25	=	120000
SS	(100 × 8 × 8)	× 20	=	128000
VJ	(100 × 8 × 6)	× 16	=	76800
				324800

Labour Cost Variance

$L_5 - L_1$

324800 - 399360 = 74560 (A)

Labour Idle Time Variance

$L_3 - L_2$

339456 - 346112

= 6656 (A)

Labour Rate Variance

$L_2 - L_1$

346112 - 399360 = 53248 (A)

Labour Efficiency Variance

$L_5 - L_3$

324800 - 339456 = 14656 (A)

Labour Mix Variance

$L_4 - L_3$

331296 - 339456

= 8160 (A)

Labour Yield Variance

$L_5 - L_4$

324800 - 331296

= 6496 (A)

HQ - 10

Variable OHs

VO_1 = 12,000

VO_2 = N.A. = 12,000

VO_3 = 3,800 x 3 = 11,400

↓

(12,000/4,000)

Variable OH Cost Variance

$VO_3 - VO_1$

11,400 - 12,000 = 600 (A)

↓

Variable OH Expenditure Variance	Variable OH Efficiency Variance
$VO_2 - VO_1$	$VO_3 - VO_2$
12,000 - 12,000 = NIL	11,400 - 12,000 = 600 (A)

Fixed OHs

FO_1		=	39,000
FO_2		=	40,000
FO_3 =	21 x (40,000/20)	=	42,000
FO_4 =	N.A.	=	42,000
FO_5 =	3800 x (40,000 / 4,000)	=	38,000

Fixed OH Cost Variance

$FO_5 - FO_1$

38,000 - 39,000 = 1,000 (A)

Fixed OH Expenditure Variance	Fixed OH Volume Variance
$FO_2 - FO_1$	$FO_5 - FO_2$
40,000 - 39,000 = 1,000 (F)	38,000 - 40,000 = 2,000 (A)

Fixed OH Calendar Variance	Fixed OH Capacity Variance	Fixed OH Efficiency Variance
$FO_3 - FO_2$	$FO_4 - FO_3$	$FO_5 - FO_4$
42,000 - 40,000	42,000 - 42,000	38,000 - 42,000
= 2,000 (F)	= NIL	= 4,000 (A)

MQ - 11

M_1 = Actual Qty. consumed × Actual Rate

= 21000 × (90000/22000) = ₹85909

M_2 = Actual Qty. Consumed × Stdd. Rate

= 21000 × 4.50 = 94500

M_4 = Actual O/P × Stdd. Material cost/ Unit of O/P

= 1900 × (10 × 4.50) = ₹85500

(a) Material Price Variance = $M_2 - M_1$

(based on consumption) = 94500 − 85909

= ₹591 (F)

(b) Material Usage Variance = $M_4 - M_2$

= ₹5500 − 94500

= 9000 (A)

d_1 = Actual Time × Actual Rate

= 25750

d_2 = Actual Time × Stdd. Rate

= 5150 × 6

= 30900

L_3 = Actual O/P × Stdd. labour Cost/Unit of O/P

= 1900 × (2.50 × 6) ⇒ 28500

(c) labour Rate Variance = $L_2 - L_1$

= 30900 − 25750

= 5150 (F)

(d) labour Efficiency Variance = $L_3 - L_2$

= 28500 − 30900

= 2400 (A)

FO_1 = Actual fixed OHs

= 46000

FO_2 = Budgeted fixed OHs

= 42000

FO_3 = Actual Days × Stdd. fixed OH/day

= N.A. = 42000

FO_4 = Actual Hours × Stdd. fixed OH/hour

= 5150 × 8 = 41200

FO_5 = Actual output × Stdd. fixed OH/Unit of O/P

= 1900 × (2.50 × 8) = 38000

(e) Fixed on Expenditure Variance = $FO_2 - FO_1$

= 42000 − 46000

= 4000 (A)

(f) Fixed on Efficiency Variance = $FO_5 - FO_4$

= 38000 − 41200

= 3200 (A)

(g) Fixed on Capacity Variance = $FO_4 - FO_3$

= 41200 − 42000

= 800 (A)