

Camlin	Page
Date	/ /

Chapter 6 - Standard Costing

* System of Costing

5 Step 1 : Cost Sheet

	<u>1000 - S₁</u>
<u>Direct</u>	
DM	100000
DL	100000
10 D Exp	-
<u>Indirect</u>	-
T. cost	200000
15 Profit	200000
Sales value	400000

20 Dmat :- Prodⁿ Mgr Pur. Mgr T. cost

$$\begin{array}{rcl} 10000 & \times & ₹10/\text{kg} = 100000 \\ (1000 \text{ units} \times 10 \text{ kg/unit}) & & \\ 11000 & \times & 11 = 121000 \end{array}$$

25 Dlab :- Prodⁿ Mgr Rate Mgr T. cost

$$\begin{array}{rcl} 10000 & \times & ₹10 \text{ per hr.} = 100000 \\ (1000 \times 10 \text{ hr.}) & & \\ 11000 & \times & 11 = 121000 \end{array}$$

Camlin	Page
Date / /	

Step II Profit & Loss A/c (always based on Actuals)

To mat.	121000	By Sales	400000
To Lab.	121000		
To Net profit	158000		

Step III :-

Reco. Statement

	₹
Profit as per Cost sheet	200000
Mat.	(21000)
Lab.	(21000)
	<u>158000</u>

Step IV :- Analysis of variances

$$\text{Dm} \quad (100000 - 121000) = 21000 \text{ loss}$$

Prodⁿ Mgr

Pur. mgr.

$$(10000 - 11000) \times 10 = 10000$$

$$(10 - 11) \times 11000 = 11000$$

$$(SQ - AQ) \times SR$$

$$(SR - AR) \times AQ$$

5) Points to remember :-

• At the time of analysis of variance

- 1) Whenever there is a quantity part, multiply by Standard Rate and whenever there is a rate part, multiply by Actual quantity.
- 2) Analysis of material, Labour, Variable OH is always based on Actual production.

3) Budgeted profit = Budgeted S.P - Budgeted cost (E.g. ①)

But, Actual profit = Actual S.P - Budgeted cost

E.g. ①

Profit - Mgr						
	Product	S.P	Cost	Profit	Units	Total profit
Bud	S ₁	100	80	20	1000	20000
Actual	S ₁	100	90	10	1000	10000
		100	80	20	1000	20000

Prodⁿ Mgr

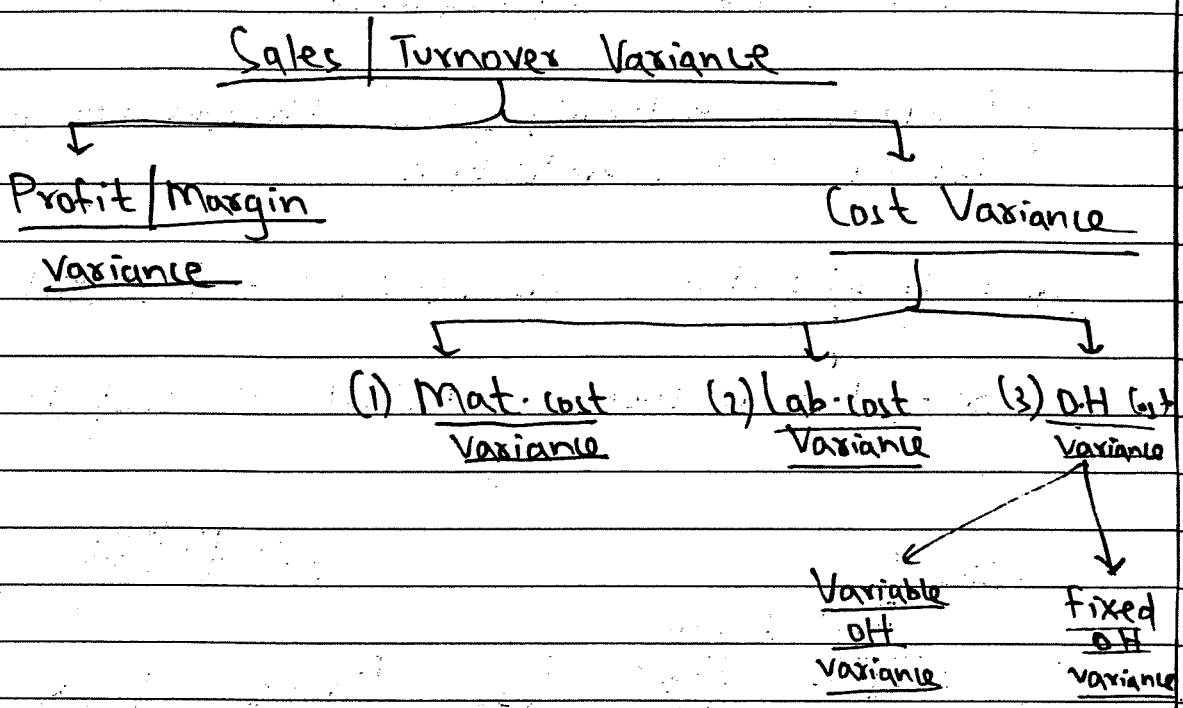
[Because profit Mgr is not responsible for cost fluctuation]

Camlin	Page
Date	/ /

Steps for solving the sum :-

Step no. 1 :- Tabular form

Step no. 2 :- Analysis of variance



Q.47

Step(I) :- Sales Turnover Variance

<u>Standard</u>				<u>Actual</u>			
<u>Product</u>	<u>Qty</u>	<u>Rate</u>	<u>Amt</u>	<u>Qty</u>	<u>Rate</u>	<u>Amt</u>	
X	240	X 50 =	12000	400	X 45 =	18000	
Y	160	X 25 =	4000	200	X 20 =	4000	
	<u>400</u>		<u>16000</u>	<u>600</u>		<u>22000</u>	

Step(II) :- Analysis of variance

Sales Variance = $\frac{\text{Standard Sales} - \text{Actual Sales}}{\text{Standard Sales}} = \frac{16000 - 22000}{16000} = 6000 (F)$

Sales - Volume Variance

Sales - Price Variance

X $(240 - 400) \times 50 = 8000 (F)$

$(50 - 45) \times 400 = 2000 (F)$

Y $(160 - 200) \times 25 = 1000 (F)$

$(25 - 20) \times 200 = 1000 (F)$

9000 (F)

3000 (F)

$\{SQ - AQ\} \times SR$

$\{SR - AR\} \times AQ$

$\{TSQ - AQ\} \times \text{Std. Avg. Rate}$

Sales Sub-volume Variance

Sales Mix Variance

$\{RSQ - AQ\} \times SR$

$(400 - 600) \times \frac{16000}{400} = 8000 (F)$

Camlin	Page
Date	/ /

$$\begin{aligned}
 X &: \left(\frac{600 \times 240}{400} \right) \\
 &= (360 - 400) \times 50 \\
 &= 2000 (F)
 \end{aligned}$$

$$\begin{aligned}
 Y &: \left(\frac{600 \times 160}{400} \right) \\
 &= (240 - 200) \times 25 \\
 &= 1000 (A)
 \end{aligned}$$

1000 (F)

Step I :- Sales - Margin Variance

	<u>Standard</u>	<u>Actual</u>
X	$240 \times \frac{20}{(50-30)} = 4800$	$400 \times \frac{15}{(45-30)} = 6000$
Y	$160 \times \frac{10}{(25-15)} = 1600$	$200 \times \frac{5}{(20-15)} = 1000$

400

6400

600

7000

Step II :- Analysis of Variance

$$(6400 - 7000) = 600(F)$$

← Sales Margin
Volume Var.

→ Sales-Margin price
Var.

$$X (240 - 400) \times 20 = 3200(F)$$

$$(20 - 15) \times 400 = 2000(A)$$

$$Y (160 - 200) \times 10 = 4000(F)$$

$$(10 - 5) \times 200 = 1000(A)$$

$$\underline{3600(F)}$$

$$\underline{3000(A)}$$

← Sales Margin
Sub-Volume Var.

→ Sales Mix Variance

$$(400 - 600) \times \frac{6400}{400}$$

$$X : \left[\left(\frac{600 \times 240}{400} \right) - 400 \right] \times 20$$

$$= 800(F)$$

$$= \underline{\underline{3200(F)}}$$

$$Y : \left[\left(\frac{600 \times 160}{400} \right) - 200 \right] \times 10$$

$$= 400(A)$$

$$\underline{\underline{400(F)}}$$

Note: Sales Price Variance is always equal to Sales Margin price Variance

Camlin	Page
Date	/ /

* Analysis of material variance is always based on actual production.

Q. 47 (A)

Note no. (i) :- Standard input for Actual output

Output
100 units

Standard input
800 kgs

500 units

? 4000 kgs

Step no. (I) :- Tabular form

Material Variance - Actual prodⁿ - 500 units

<u>Standard</u>			<u>Actual</u>		
<u>Qty</u>	<u>X Rate</u>	= <u>Amt</u>	<u>Qty</u>	<u>X Rate</u>	= <u>Amt</u>
4000	X 5	= 20000	4400	X 5.30	= 23320

Step II :- Analysis of variance

SC - AC

Material cost variance = $(20000 - 23320) = 3320 (A)$

$(SQ - AQ) \times SR$

$(SR - AR) \times AQ$

MRV

MRV

(Input) $\Rightarrow (4000 - 4400) \times 5$

$= (5 - 5.30) \times 4400$

$= 2000 (A)$

$= 1320 (A)$

Camlin	Page
Date	/ /

11
Mat-Yield Variance (Output)

(Output) ⇒

Input
4000

Output
500

4400

$$\left(500 \times \frac{4400}{4000} \right)$$

$$= 550$$

$$(550 - 500) \times \frac{20000}{500}$$

$$= \underline{2000(A)}$$

$$MYV = \left\{ \begin{array}{l} \text{Standard output from} \\ \text{Actual mix} \end{array} - \begin{array}{l} \text{Actual output} \\ \text{from Actual mix} \end{array} \right\} \times \text{Std. Avg. rate of output}$$

Camlin	Page
Date	/ /

Q.49Standard input for Actual output

Q.49 Skilled $\left(\frac{180 \times 1600}{100}\right) = 2880 \text{ hrs.}$

Semi-skilled $\left(\frac{120 \times 1600}{100}\right) = 1920 \text{ hrs.}$

Unskilled $\left(\frac{300 \times 1600}{100}\right) = 4800 \text{ hrs.}$

Step I :- Labour Variance - Actual prodⁿ - 1600 units

	Hrs	Std Rate	= Amt	Hrs	Actual Rate	= Amt
Skilled	2880	5	14400	3000	5.20	15600
Semi-skilled	1920	3	5760	2000	2.50	5000
Unskilled	4800	2	9600	5000	1.80	9000
			<u>29760</u>			<u>29600</u>

Step II :- Analysis of variances

$$(29760 - 29600) = 160 (F)$$

{SC - AC}

Lab. - Effici. Var.

Lab. Rate var.

Sk $(2880 - 3000) \times 5 = 600 (A)$ $(5 - 5.2) \times 3000 = 600 (A)$

S-Sk $(1920 - 2000) \times 3 = 240 (A)$ $(3 - 2.5) \times 2000 = 1000 (F)$

Unsk $(4800 - 5000) \times 2 = 400 (A)$ $(2 - 1.8) \times 5000 = 1000 (F)$

1240 (A) 1400 (F)

Camlin	Page
Date	/ /

Labour Sub-Effic.

Var. (Input/Hrs)

$$(9600 - 10000) \times \frac{29760}{9600}$$

$$= 1240 (A)$$

$$\frac{(RSH - AH) \times SR}{\text{Labour Mix Variance}}$$

Labour Mix Variance

$$Sk: \left[\left(\frac{10000 \times 2880}{9600} \right) - 3000 \right] \times$$

$$= \text{Nil}$$

Labour Yield Variance (Output/units)

$$\text{Semi-Sk:} \left[\left(\frac{10000 \times 1920}{9600} \right) - 2000 \right] \times$$

$$= \text{Nil}$$

Hrs

Output

9600

1600

$$\text{Unk:} \left[\left(\frac{10000 \times 4800}{9600} \right) - 5000 \right] \times$$

10000

? 1666.67

$$= \text{Nil}$$

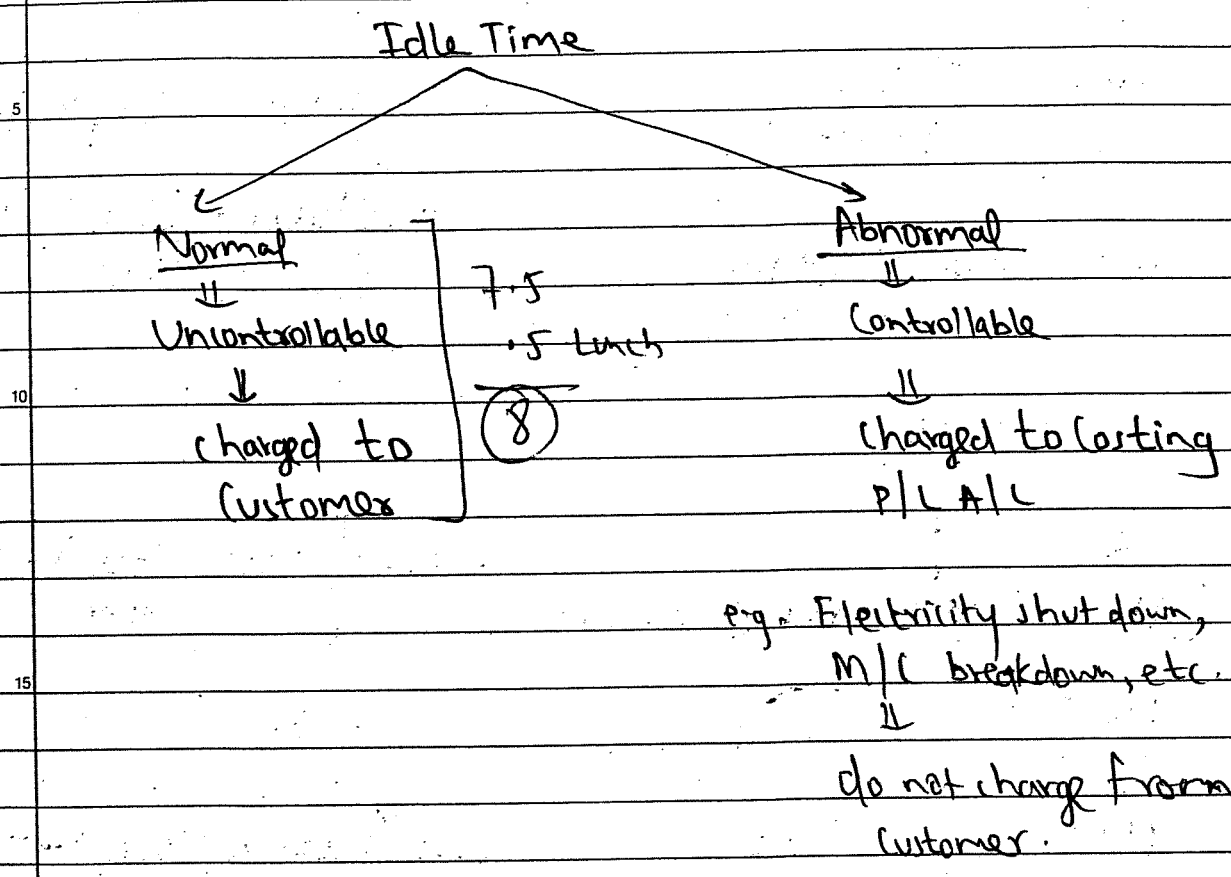
$$(1666.67 - 1600) \times \frac{29760}{1600}$$

$$= 1240 (A)$$

$$\left[\frac{\text{Standard output from Actual hrs} - \text{Actual output from Actual hrs}}{\text{hrs}} \right] \times \text{Std. Rate of output/hr.}$$

Camlin	Page
Date	/ /

* Application of Abnormal Idle time in Labour Variance



Q-48

Step no. I :- Labour Variance

<u>Std.</u>			<u>Actual</u>		
<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>	<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
1000	X 0.5 =	500	1200	X 0.30 =	360

Abnormal idle time

100 hrs

⇓

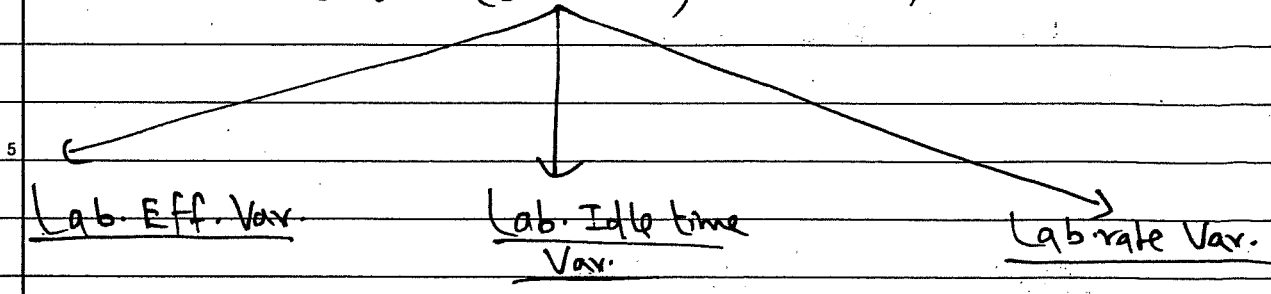
Worker was ready to work but there was no electricity

Actual hrs worked

⇓

1100 hrs.

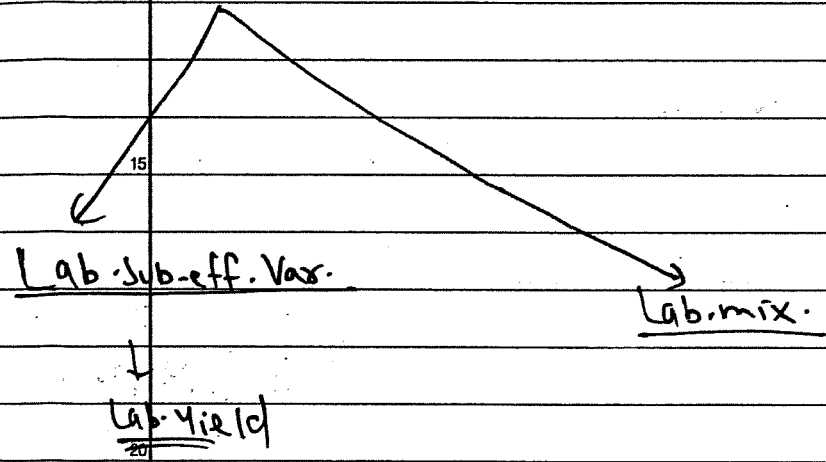
labour cost Var. $(500-360) = 140(F)$



$(1000-1100) \times 0.5$
 $= 50(A)$

100×0.5
 $= 50(A)$

$(0.5-0.3) \times 1200$
 $= 240(F)$



Rate dept is concerned with Hrs paid

Camlin	Page
Date	/ /

* Analysis of Variable OH is always based on Actual production.

Step 1: - V.O. Variance

<u>Std.</u>	<u>Actual</u>
$\text{Hrs} \times \text{Rate} = \text{Amt}$	$\text{Hrs} \times \text{Rate} = \text{Amt}$
$2000 \times 0.5 = 1000$	$1200 \times 0.60 = 720$
(1000x1)	

$$\begin{aligned} \text{V.O. Cost Variance} &= 1000 - 720 \\ &= 280(F) \end{aligned}$$

V.O. Eff. Var.

$$= (2000 - 1200) \times 0.5$$

$$= 400(F)$$

V.O. Expd. / Rate Var.

$$= (0.5 - 0.6) \times 1200$$

$$= 120(A)$$

$$(SH - AH) \times S.R$$

$$(S.R - A.R) \times AH$$

Camlin	Page
Date	/ /

V.OH

8 to 12 → paid (4)

(8:30 to 12) 3.5 hrs

Actual hrs paid = 4

$$\frac{0.4}{3.5}$$
Q.50Material VarianceStep no. 1 :- Tabular form

	<u>Std.</u>		<u>Actual</u>
	$\frac{\text{Mtrs} \times \text{Rate} = \text{Amt}}$		$\frac{\text{Mtrs} \times \text{Rate} = \text{Amt}}$
e	$12000 \times 6 = 72000$		$12670 \times 5.70 = 72219$
	(600002)		

Labour Variance

	$\frac{\text{Hrs} \times \text{Rate} = \text{Amt}}$		$\frac{\text{Hrs} \times \text{Rate} = \text{Amt}}$
	$6000 \times 4.4 = 26400$		$6500 \times 4.3 = 27950$
	(600001)		

If there is no abnormal idle time,
Hrs will be same for both.

V.O. Variance

	$\frac{\text{Hrs} \times \text{Rate} = \text{Amt}}$		$\frac{\text{Hrs} \times \text{Rate} = \text{Amt}}$
	$6000 \times 3 = 18000$		$6500 \times 3.15 = 20475$
	(600001)		

Camlin	Page
Date	/ /

$$MCV = (72000 - 72219)$$

$$= 219(A)$$

MUV

MRV

$$= (12000 - 12670) \times 6$$

$$(6 - 5.7) \times 12670$$

$$= \underline{\underline{4020(A)}}$$

$$= \underline{\underline{3801(F)}}$$

$$LCV = (26400 - 27950)$$

$$= 1550(A)$$

Lab. Eff. Var.

Lab. Rate Var.

$$= (6000 - 6500) \times 4.4$$

$$= (4.4 - 4.3) \times 6500$$

$$= 2200(A)$$

$$= 650(F)$$

$$V.O. \text{ Lost Var.} = (18000 - 20475)$$

$$= 2475(A)$$

V.O. Eff. Var.

V.O. Expt. / Rate

$$= (6000 - 6500) \times 3$$

$$= (3 - 3.15) \times 6500$$

$$= 1500(A)$$

$$= 975(A)$$

Camlin	Page
Date	/ /

* V Imp
Analysis of Fixed OH is always based on Budgeted production

e.g. DKC Classes : 50 students : Rent pay karna padega - 50 ka n F.O.

↓
20 students

Step 1 :- Cost-sheet

Cost-sheet as on this date
(1-1-18) to 31-12-18
1000-500 = 500
ye date ko pura chahiye

D. cost

DM (10 kg x 10)

DL (10 hrs x 10)

D.exp.

= 100

= 100

-

Indirect cost

F.O (Fixed)

10

Partial cost

210

Profit

90

Selling price

300

Camlin	Page
Date	/ /

1-1-18 to 31-12-18

F.O.

$$\text{Units} \times \frac{\text{Budget}}{\text{R.R.}} = \text{Exp.}$$

$$\underline{50000} \times 10 = \underline{500000}$$

$$\text{Units} \quad \text{Actual} \quad \text{Exp.}$$

$$40000 \quad 520000$$

$$\text{R.R.} = \frac{\text{Bud.exp.}}{\text{Bud.units}}$$

$$= \frac{500000}{50000}$$

$$= \underline{10}$$

F.O. A/c

To Bank	520000	By Recovery	400000
		(40000 x 10)	
		By Under recovery	120000
		(Loss)	

$$\text{F.O. Cost Var.} = (400000 - 520000) = 120000(A)$$

(Recoverd OH - Actual OH)

$$\begin{aligned} \text{F.O. Exp. Var.} \\ &= (500000 - 520000) \\ &= 20000(A) \quad (\text{Bud.exp.} - \text{Actual exp.}) \end{aligned}$$

$$\begin{aligned} \text{F.O. Volume Var.} \\ &= (50000 - 40000) \times 10 \\ &= 100000(A) \end{aligned}$$

* 1) Recovery Rate = $\left[\frac{\text{Bud. exp.}}{\text{Bud. Volume}} \right]$ → Exp. Mgr.

2) Est. Rate

3) Charging rate

4) Absorption rate

5) Applicⁿ rate

6) Std. rate

7) Bud. Rate

→ Prodⁿ Mgr.

Traditional

Modern

A.B.C.

Units

Hrs.

Days/weeks/mths/yr

Any Action (%)

$$R.R = \left(\frac{B.exp.}{B.units} \right)$$

$$R.R = \left(\frac{B.exp.}{B.hrs} \right)$$

$$R.R = \frac{B.exp.}{\begin{matrix} \text{Bud. days} \\ \text{weeks} \\ \text{mths} \\ \text{year} \end{matrix}}$$

(Bud. units - Act. units) X RR

1-1-18 to 31-12-18

F.O. (Budget)

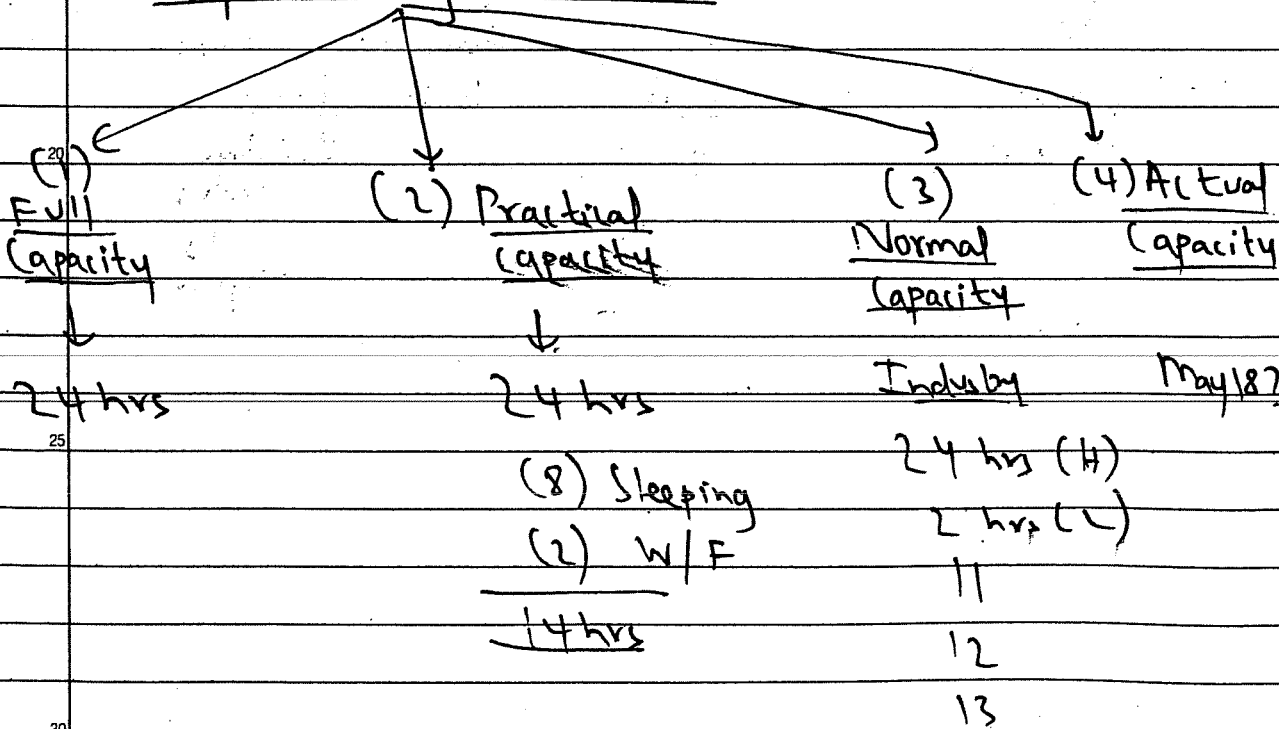
Actual

Units	R.R.	Exp	Units	Exp.
60000 (30000x2)	10	600000	50000	620000

Hrs	R.R.	Exp	Hrs	Exp.
30000 (300x100x10)	20	600000	32000	620000

Days	R.R.	Exp.	Days	Exp.
300	2000	600000	301	620000

As per Costing Std. 2 & 3



Full Cap 365

(52) Sundays

(13) Other holidays

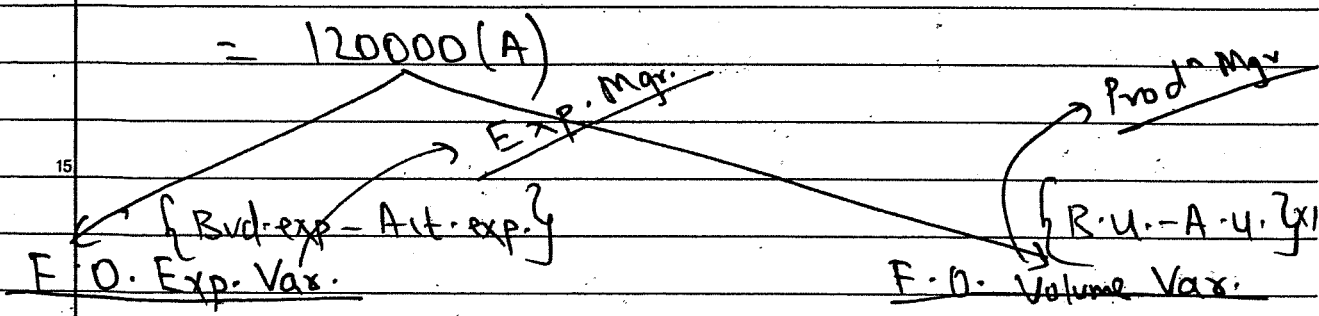
300 days

Camlin	Page
Date	/ /

F.O. A/c			
To Bank	620000	By Recovery (50000 X 10)	500000
		By V/R (loss)	120000

F.O. Cost Variance { R.OH - Actual OH }
= 500000 - 620000

= 120000 (A)



= 600000 - 620000

= (60000 - 50000) 10

= 20000 (A)

= 100000 (A)

F.O. Capacity Var.

F.O. Effici. Var.

= (30000 - 32000) X 20

= 40000 (F)

Units	Hrs
50000	30000
50000	25000

$$\frac{1}{2} (B.H. - A.H.) \times R.R.$$

Camlin	Page
Date	/ /

$$(25000 - 32000) \times 20$$

$$= 140000(A)$$

$$\left[\text{Bud. hrs for Actual prod}^n - \text{Actual hrs for Actual prod}^n \right] \times R.R.$$

F.O. (abundant)
Variable

F.O. Revised
(qp. Var.)

$$= (300 - 301) \times 2000$$

$$= 2000(F)$$

<u>Days</u>	<u>Hrs</u>
300	30000
301	30100

$$(\text{B. days} - \text{Act. days}) \times R.R.$$

$$[30100 - 32000] \times 20$$

$$= 38000(F)$$

$$\left[\text{Bud. hrs for Actual prod}^n - \text{Act. hrs for Act. prod}^n \right] \times R.R.$$

Camlin	Page
Date	/ /

Q.511-8-18 to 31-8-18

F.O. (Budget)			Actual	
Units	X	R.R. = Amt	Units	Exp.
30000	X	1.5 = 45000	32500	50000

Hrs	X	R.R. = Amt	Hrs	Exp.
30000	X	1.5 = 45000	33000	50000

Days	X	R.R. = Amt	Days	Exp.
25	X	1800 = 45000	26	50000

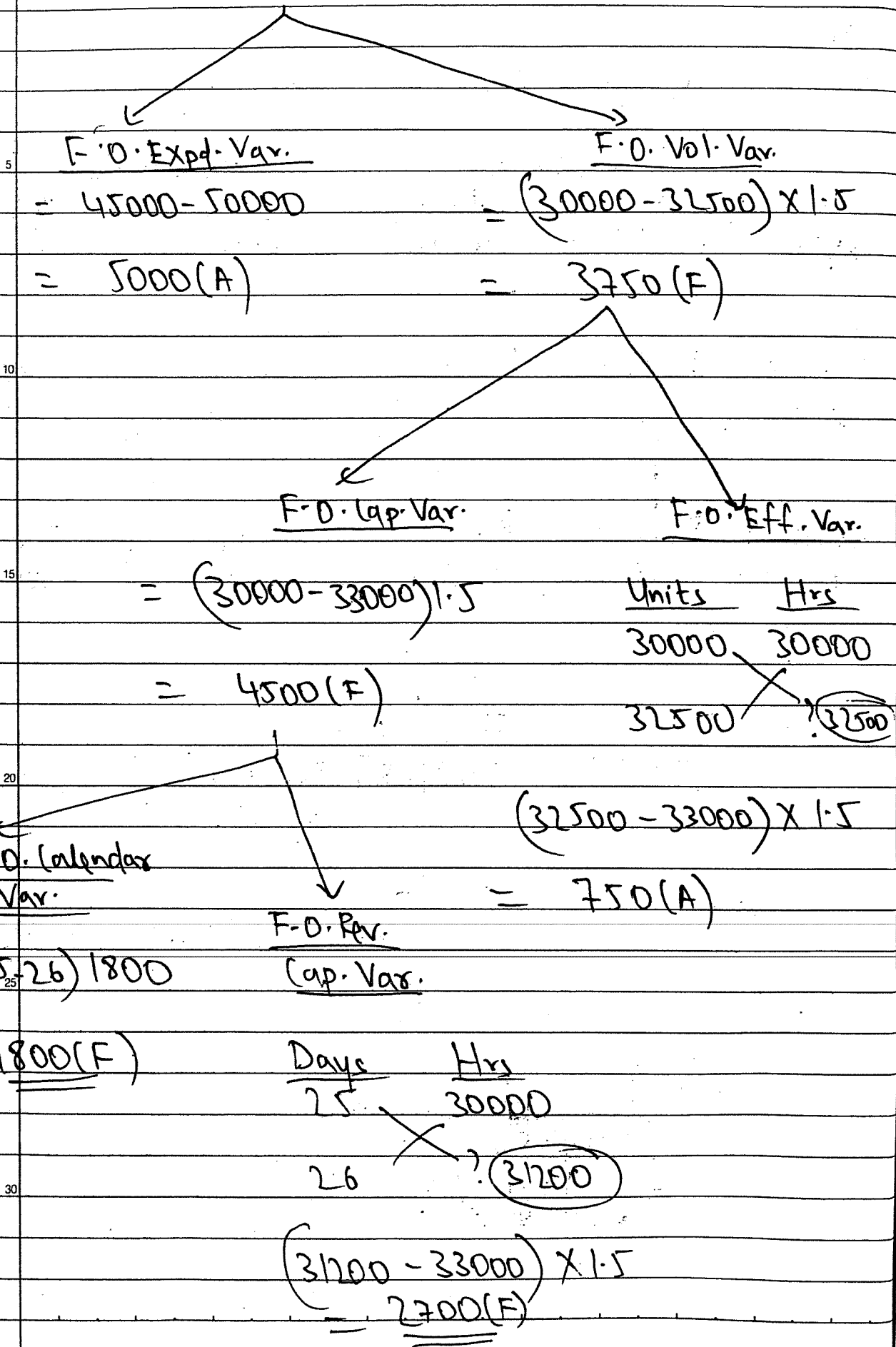
F.O. A/c

To Bank	50000	By Recovery	48750
		(32500 X 1.5)	
		By U/R (loss)	1250

F.O. (out Variance)

$$= 48750 - 50000$$

$$= 1250 (A)$$



Camlin	Page
Date	/ /

* Concept related to Reconciliation

Steps for solving the sum :-

Step I :- Cost sheet (always on the basis of budgeted prodⁿ)

Step II :- Profit & loss A/c (always on the basis of actual prodⁿ)

Step III :- Reco statement

Step IV :- Analysis of variance (Analysis of material, labour variable OH is always based on Actual prodⁿ, but analysis of fixed OH is based on budgeted prodⁿ & sales price variance is always equal to sales margin price variance)

Q.52Ans no. (i)Step I: - Statement showing Cost sheet (2013-14)

	Bud. prod ⁿ - 5000	Ans (ii)
	Total	P. u.
Direct material ($28800/4800 \times 5000$)	30000	6.00
Direct labour ($43200/4800 \times 5000$)	45000	9.00
V. O. ($72000/4800 \times 5000$)	75000	15.00
F. O.	37500	7.50
Bud. cost	187500	37.50
Bud. profit	37500	7.50
Bud. C.P.	225000	45.00

Step II: - P/L A/c - 2013-14 (given)

Actual profit = 36600

Ans (iii) Step III
Stat. showing Reconciliation
Particulars

	₹
Profit as per Cost sheet	37500
Due to MUV	(600)
MRV	(300)
Lab. Eff. Var.	(2250)
Lab. Rate Var.	750
V. O. Eff. Var.	(3750)
V. O. Expd. / Rate Var.	3000
F. O. Eff. Var.	(1500)
F. O. Expd. / Rate Var.	(1500)

Camlin	Page
Date	/ /

Sales Margin Vol. Var.	(1500)
Sales Margin price Var.	6750
<u>Profit as per P/L A/c</u>	<u>36600</u>

Camlin	Page
Date	/ /

Step IV :- Analysis of variance

Material Var. - Actual prodⁿ - 4800 units

	<u>Std.</u>		<u>Actual</u>
Kg x	Rate =	Amt	Kg x Rate = Amt
		<u>18800</u>	<u>29700</u>

Labour Var.

Hrs x	Rate =	Amt	Hrs x	Rate =	Amt
<u>9600</u>	4.5 (given)	<u>43200</u>	10100	4.427	44700

V.O.

Hrs x	Rate =	Amt	Hrs x	Rate =	Amt
<u>9600</u>	7.5 (given)	<u>72000</u>	10100	7.202	72750

F.O.

	<u>Budget</u>		<u>Actual</u>	
Units x	R.R =	Exp.	Units	Exp.
5000	7.5	37500	4800	39000

Sales Margin Var.

Units x	Rate =	Amt	Units x	Rate =	Amt
5000 x 7.5	=	37500	4800 x 8.90625	=	42750

Actual profit p.u. = Actual S.P (p.u.) 46.40625
 (-) Bud. cost (p.u.) (37.50)
8.90625

Camlin	Page
Date	/ /

$$MCV = (\overset{28800}{\cancel{30600}} - 29700)$$

$$= 900(A)$$

$$= \frac{MUU}{600(A)}$$

$$= \frac{MRV}{300(A)}$$

$$LCV = (\overset{43200}{\cancel{44700}} - 44700)$$

$$= 1500(A)$$

Lab. Eff.
Var.

$$= (9600 - 10100) \times 7.5$$

$$= 2250(A)$$

Lab. Rate Var.

$$= (4.5 - 4.257...) \times 101$$

$$= 750(F)$$

$$V.O. \text{ Cost Var.} = (\overset{72000}{\cancel{72750}} - 72750)$$

$$= 750(A)$$

V.O. Eff. Var.

$$= (9600 - 10100) \times 7.5$$

$$= 3750(A)$$

V.O. Expt. Rate Var

$$= (7.5 - 7.203...) \times 101$$

$$= 3000(F)$$

Camlin	Page
Date	/ /

$$\text{Sales Margin Var.} = (37500 - 42750)$$

$$= 5250(F)$$

Sales Margin Vol. Var.

$$= (5000 - 4800) \times 7.5$$

$$= 1500(A)$$

Sales Margin

Price Var.

$$= (7.5 - 8.90625) \times 4800$$

$$= 6750(F)$$

$$\text{F.O. Cost Var.} = (36000 - 39000)$$

$$= 3000(A)$$

F.O. Expd. Var.

$$= (37500 - 39000)$$

$$= 1500(A)$$

F.O. Vol. Var.

$$= (5000 - 4800) \times 7.5$$

$$= 1500(A)$$

F.O. A/c

To Bank

39000

By Retainery

36000

(4800 × 7.5)

By V/R (loss)

3000

Camlin	Page
Date	/ /

Verification

$$* \text{ Sales price Var.} = (45 - 46.40625) \times 4800$$

$$= 6750 (F)$$

$$* \text{ Actual S.P (p.u.)} \quad 46.40625$$

$$\text{Price Var.}$$

$$(6750 \div 4800)$$

$$\frac{(1.40625)}{45.00}$$

Actual Sales : 222750

$$\frac{\text{Price Var.}}{6750}$$

$$216000 \div 4800$$

$$= 45.00$$

Camlin	Page
Date / /	

* If Budgeted & Actual prodⁿ is not given

Q.54

Step I :- Statement showing Cost sheet - April 2013

	Bud. units = $\left(\frac{100000}{10}\right) = 10000$ units	
	Total	P.u.
D. mat.	200000	20.00 (5kg x 4)
D. lab.	60000	6.00 (2hr x 3)
F.O.	40000	4.00 ($\frac{40000}{10000}$)
Bud. cost	300000	30.00
Bud. pft.	100000	10.00 (30 x $\frac{25}{15}$)
Bud. sales	400000	40.00

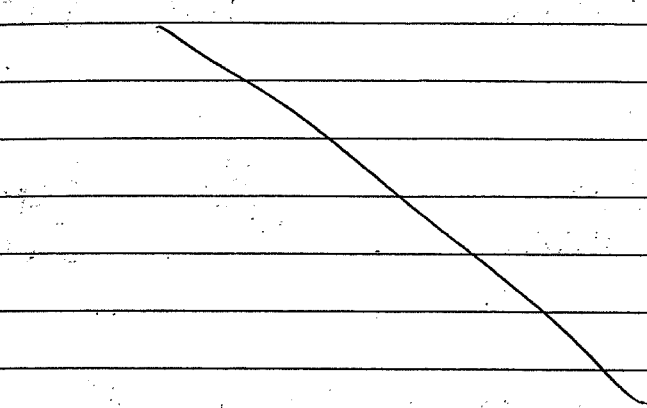
Step II :- Stat. showing pft / (loss)

A/c	Qty/Hrs	Rate/price (₹)	Actual value
Sales	9600	(41.00)	393600
DM			203360
DL			57600
F.O.			28600
Total costs			299560
Profit			94040

Camlin	Page
Date	/ /

Step 3 :- Stat. Showing Rep

Given



Step 4 :- Analysis of Variance

Material Var. - Actual prodⁿ = 9600 units

<u>Kgs</u> X <u>Rate</u> = <u>Amt</u>	<u>Kgs</u> X <u>Rate</u> = <u>Amt</u>
48000 X 4 = 192000 (9600 X 5)	49600 X 4.1 = 203360

Labour Var. - Actual prodⁿ = 9600 units

<u>Hrs</u> X <u>Rate</u> = <u>Amt</u>	<u>Hrs</u> X <u>Rate</u> = <u>Amt</u>
19200 X 3 = 57600 (9600 X 2)	18000 X 3.2 = 57600

Camlin	Page
Date	/ /

F.O.

Budget

<u>Units</u>	<u>R.R.</u>	<u>Exp.</u>
10000	4	40000

Actual

<u>Units</u>	<u>Exp.</u>
9600	38600

<u>Hrs</u>	<u>R.R.</u>	<u>Exp.</u>
20000 X 2 (10000x2)	2	40000

<u>Hrs</u>	<u>Exp.</u>
18000	38600

<u>Units</u>	<u>Rate</u>	<u>Sales Margin</u>
10000	10	$\frac{\text{Amt}}{100000}$

<u>Units</u>	<u>Rate</u>	<u>Amt</u>
9600	11	105600

$$MCV (192000 - 203360) = 11360(A)$$

$$= \frac{MCV}{4} = \frac{(48000 - 49600)}{4} = 6400(A)$$

$$= \frac{MRV}{4} = \frac{(4 - 4.1) 49600}{4} = 4960(A)$$

$$LCV (57600 - 57600) = 0$$

$$= \frac{LEV}{3} = \frac{(19200 - 18000) \times 3}{3} = 3600(A)$$

$$= \frac{LRV}{3} = \frac{(3 - 3.2) 18000}{3} = 3600(A)$$

Camlin	Page
Date	/ /

F.O. A/C			
To Bank	38600	By Recovery	38400
		(9600 X 4)	
		By U/R (loss)	200

F.O. Cost Var. = - 200(A)

F.O. Expd. Var.
= (40000 - 38600)
= 1400(F)

F.O. Vol. Var.
= (10000 - 9600) 4
= 1600(A)
= 6400(A)

F.O. qp. Var.
= (20000 - 18000) 2
= 4000(A)

F.O. Eff. Var.

Units	Var.
10000	20000
9600	19200

= 2400(F)

(19200 - 18000) 2

Sales Margin Var. = 100000 - 105600
= 5600(F)

Sales Margin Vol. Var.
= (10000 - 9600) 10
= 4000(A)

Sales Margin price Var.
= (10 - 11) 9600
= 9600(F)

Camlin	Page
Date	/ /

Q.53

Step I :- Statement showing Cost sheet

Bud. prod ⁿ = 24000 units		
	Total	p.u.
Mat.	960	0.04
Lab.	1440	0.06
V.O.	2400	0.10
Bud. cost	4800	0.20
Bud. pft	1200	0.05
Bud. sales	6000	0.25

Step II :- P/L A/c

To Mat.	1080	By Sales	6784
To Lab.	1664		
To V.O.	2592		
To Net Pft.	1448		
	6784		6784

Camlin	Page
Date	/ /

Step III
Ans. no. (a) Statement showing Reconc.

Particulars	₹
Profit as per cost sheet	1200
(+/-) Due to MUV	(128)
MPV	72
L. Eff. Var.	(24)
L. Expd. Var.	(104)
V.O. Eff. Var.	(40)
V.O. Rate Var.	88
Sales M. Vol. Var.	80
Sales M. Price Var.	384
Profit as per P/L A/c	1448

Step I

Camlin	Page
Date	/ /

Step 4:- Analysis of Variance

Mat. - Actual prodⁿ = 25600 units

<u>Std.</u>			<u>Actual</u>		
Kgs	X	Rate = Amt	Kgs	X	Rate = Amt
1024	X	8.00 =	144	X	7.50 = 1080
$(\frac{960}{24000} \times 25600)$					

Labor Var.

Hrs	X	Rate = Amt	Hrs	X	Rate = Amt
1536	X	6.00 =	260	X	6.40 = 1664
$(\frac{1440}{24000} \times 25600)$					

V.O.

Hrs	X	Rate = Amt	Hrs	X	Rate = Amt
256	X	(10) =	260	X	9.97 = 2592
$(\frac{2400}{24000} \times 25600)$					

Sales margin. Var.

Units	X	Rate = Amt	Units	X	Rate = Amt
24000	X	0.05 = 1200	25600	X	0.065 = 1664
			$(0.065 - 0.05)$ (Act. - Bud. Sales - Cost p.u. p.u.)		

$$V.O. \text{ Cost Var.} = (2560 - 2592) = 32(A)$$

V.O. Eff. Var.

V.O. Expd. Var.

$$= (256 - 260) \times 10$$

$$= 40(A)$$

$$= (10 - 9.97) \times 260$$

$$= 7.8(F)$$

Camlin	Page
Date	/ /

$$MCV = \left(\frac{1024}{8192} - 1080 \right)$$

$$= 5.6(A)$$

$$\begin{aligned} & \xrightarrow{\text{MUV}} \\ & = \frac{(128-144)8}{128(A)} \end{aligned}$$

$$\begin{aligned} & \xrightarrow{\text{MRV}} \\ & = \frac{(8-7.5)144}{72(F)} \end{aligned}$$

$$LCV = (1536 - 1664)$$

$$= 128(A)$$

$$\begin{aligned} & \xrightarrow{\text{LEV}} \\ & = \frac{(256-260)6}{24(A)} \end{aligned}$$

$$\begin{aligned} & \xrightarrow{\text{LRV}} \\ & = \frac{(6-6.4)260}{104(A)} \end{aligned}$$

$$\text{Sales Margin Variance} = (1200 - 1664)$$

$$= 464(F)$$

$$\xrightarrow{\text{Sales Margin Vol.}}$$

$$\begin{aligned} & = \frac{(24000 - 25600) \times 0.05}{80(F)} \\ & = 80(F) \end{aligned}$$

$$\xrightarrow{\text{Sales Margin Price}}$$

$$\begin{aligned} & = \frac{(0.05 - 0.06) \times 25600}{384(F)} \\ & = 384(F) \end{aligned}$$

Camlin	Page
Date	/ /

(b) Mkt size Variance

$$(\text{Bud. Mkt size} - \text{Act. Mkt size}) \times \% \times \text{Cont. p.u.}$$

$$= (200000 - 240000) \times 12\% \times 0.05$$

$$= \underline{\underline{240(F)}}$$

10 Mkt share Var.

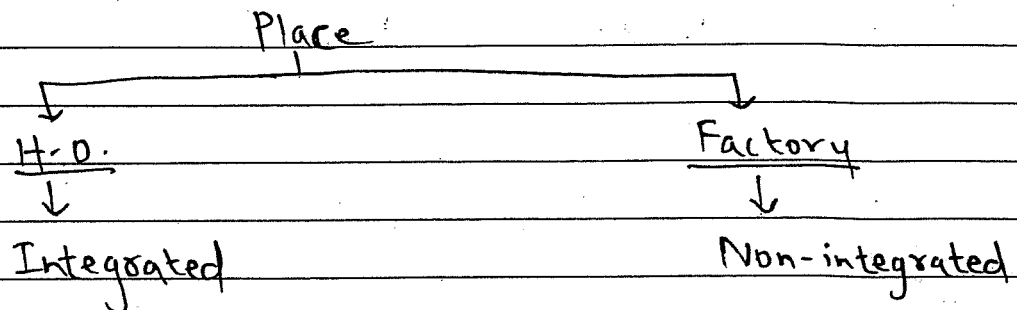
$$\left(\frac{\text{Bud. share in Actual}}{\text{Size}} - \text{Actual share in Actual size} \right) \times \text{Cont. p.u.}$$

$$= (28800 - 25600) \times 0.05$$

$$(240000 \times 12\%) = 160(A)$$

$$\underline{\underline{\text{Total} = 80(F)}}$$

* Concept of Partial & Single plan



Bud units - 1100 - S1

	<u>p.u.</u>
DM (10kg X 10)	100
DL (10hrs X 10)	100
Prime cost	200
<u>Ind. cost</u>	
F.O. (11000 ÷ 1100)	10
	210
Profit	90
S.P.	300

Actual prodⁿ :- 1000 - S1

Materials - 1000 units

<u>Std.</u>			<u>Actual</u>		
Kg	Rate	Amt	Kg	Rate	Amt
10000x	10	100000	11000	11	121000

Camlin	Page
Date	/ /

Labour Var.

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10000	10	100000

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
11000	11	121000

E.O.
Budget

<u>Units</u>	<u>R.R.</u>	<u>Exp.</u>
1100	10	11000

Actual

<u>Units</u>	<u>Exp.</u>
1000	12000

H.O. →

Partial plan

Single plan

H.O.

Factory

H.O.

Factory

Partial Plan

As per this plan, we will debit the WIP A/c on the basis of Actual & credit the same on the basis of Standard, & Analysis of Variance takes place at the end of the period.

Camlin	Page
Date	/ /

H.O. → Partial

Mat. (trl A/c) Dr 121000
lab. (trl A/c) Dr 121000
O.H (trl A/c) Dr 12000
To Cash/Bank A/c 254000

WIP (trl A/c) Dr 254000
To Mat. (trl A/c) 121000
To lab. (trl A/c) 121000
To OH (trl A/c) 12000

FG (trl A/c) Dr 210000
To WIP (trl A/c) 210000
(10000 × 210)

End of period - Analysis of variance

$$M(V) (100000 - 121000) = 21000(A)$$

MUV

MRV

$$(10000 - 11000) \times 10 \\ = 10000(A)$$

$$(10 - 11) \times 1100 = 11000(A)$$

$$L(V) = (100000 - 121000) = 21000$$

LEV

LRV

$$= (10000 - 11000) \times 10 \\ = 10000(A)$$

$$= (10 - 11) \times 1100 \\ = 11000(A)$$

Camlin	Page
Date	/ /

F.O. A/c			
To Bank	12000	By Recovery	10000
		(10000x10)	
		By v/R (loss)	2000

$$F.O. \text{ lost Var.} = 10000 - 12000$$

$$= 2000(A)$$

F.O. Expd. Var.

$$= 11000 - 12000$$

$$= 1000(A)$$

F.O. Eff. Var.

$$= (1100 - 1000) 10$$

$$= 1000(A)$$

Entries

20	MUV	Dr	10000
	MRV	Dr	11000
	Lab. Eff. Var.	Dr	10000
	Lab. Rate Var.	Dr	11000
	F.O. Expd.	Dr	1000
25	F.O. Volume	Dr	1000

To WIP (trd A/c) 44000

* Single Plan

30 As per this plan, we will debit the material, labour, Variable OH, fixed OH, WIP, FG, on the basis of std & credit the same on the basis of std.

Analysis of variance takes place & when the

Camlin	Page
Date	/ /

transaction takes place.

H.O. Single Plan

5
Mat. (trl A/c (11000x10) Dr 110000
Mat. Rate Var. Dr 11000
(10-11) x 11000
To Cash/Bank 121000

10
WIP (trl A/c Dr 100000
(1000 x 10kg x 10)
MOV Dr 10000
(10000-11000) x 10
15 To Mat (trl A/c 110000

20
Lab. (trl A/c (11000x10) Dr 110000
Lab. Rate Var. (10-11) x 11000 Dr 11000
To Cash/Bank 121000

25
WIP (trl A/c Dr 100000
(1000 x 10hr x 10)
Lab. Eff. Var. Dr 10000
(10000-11000) x 10
30 To Lab. (trl A/c 110000

Camlin	Page
Date	/ /

F.O. (trl A/c) Dr 11000
 F.O. Expt. Var. Dr 1000
 To Gsch/Bank 12000

WIP (trl A/c) Dr 10000
 (1000X10)

F.O. Volume Var. Dr 1000
 (1100-1000)X10

To ~~trl~~ F.O. (trl A/c) 11000

F.G. (trl A/c) Dr 210000
 To WIP (trl A/c) 210000
 (1000X210)

Q.15

Step I :- Statement showing cost sheet ->

		Bud. units = $\frac{25200}{12} = 2100$	
		Total	P.u.
DM	A	105000	50.00
DM	B	63000	30.00
DL		52500	25.00
V.O.		126000	60.00
F.O.		52500	25.00
Bud. cost		399000	190.00
Bud. pft		(73500)	35.00
		472500	225.00

Step II :- P/L A/c (given)

= 67500 { As per
conver
964 }

Step III :- Reconciliation statement

Ans (ii)

Statement showing Reconciliation

Profit as per Cost Sheet		73500
Due to Mat. Rate Var.	A	(5000)
	B	3450
Due to MUV	A	5500
	B	(4500)
LRV		(8775) ²¹⁰⁰
LEV		(1500)
Lab. Idle time Var.		(000)
V.O. Expd. / Rate Var.		8600
V.O. Eff. Var.		(3600)
F.O. Expd. Var.		(4100)
F.O. Vol. Var.		(2500)
Sales Margin vol. Var.		(3500)
		<u>67450</u>

Camlin	Page
Date / /	

Ans (iii) Stat. showing Reco

Profit as per Reco. 67450

Due to Mat. Rate - A

0.25 (20000 - 18900) 275

Due to Mat. Rate - B

0.30 (11500 - 10750) (225)

Profit as per P/L A/c 67500

Ans (i) Analysis of Variance

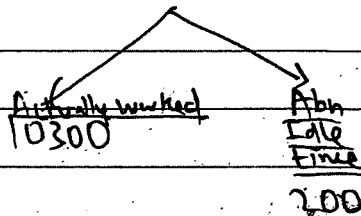
Mat. Variance - Actual prodⁿ $\Rightarrow$ 2000 units

Input	Std.			Actual		
	Pty	Rate	Amt	Pty	Rate	Amt
A	20000 (2000x10)	5	= 100000	18900	5.27	99225
B	10000 (2000x5)	6	= 60000	10750	5.70	61275
			160000	29650		160500

lab. Var.

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10000	x 5	= 50000
(2000x5hr)		

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10500	x 5.83 ^{4.80}	= 61275
		50400



V.O. Var.

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10000	x 12	= 120000
(2000x5)		

<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10300	11.6	= 115000

F.O. Var.

<u>Budget</u>		
<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10000	x 12	= 120000
(2000x5)		

<u>Actual</u>		
<u>Hrs</u>	<u>Rate</u>	<u>Amt</u>
10300	11.6	= 115000

<u>Budget</u>		
<u>Units</u>	<u>R.R.</u>	<u>Exp</u>
2100	25	= 52500

<u>Units</u>	<u>Exp.</u>
2000	= 50000

<u>Sales-Margin</u>		
<u>Units</u>	<u>Rate</u>	<u>Amt</u>
2100	35	= 73500

<u>Units</u>	<u>Rate</u>	<u>Amt</u>
2000	35	= 70000

Actual S.P (p.u.)	225
Bud. Cost p.u.	(190)
	<u>35</u>

Camlin	Page
Date	/ /

Mat. Rate Var.

$$A \quad (5 - 5.25) \times 20000 = 5000 (A)$$

$$B \quad (6 - 5.70) \times 11500 = 3450 (F)$$

Mat. Usage Var.

$$A \quad (20000 - 18900) \times 5 = 5500 (F)$$

$$B \quad (10000 - 10750) \times 6 = 4500 (A)$$

Lab. Rate Var.

$$(5 - 5.25) \times 10500 = 2100 (F)$$

Lab. Eff. Var.

$$(10000 - 10300) \times 5 = 1500 (A)$$

Lab. Idle time Var.

$$200 \times 5 = 1000 (A)$$

V.O. Exp. / Rate Var.

$$(12 - 11.16) \times 10300 = 8600 (F)$$

V.O. Eff. Var.

$$(10000 - 10300) \times 12 = 3600 (A)$$

$$F.O. \text{ Expd. Var. } (52500 - 56600) = 4100 (A)$$

$$F.O. \text{ Volume Var. } (2100 - 2000) \times 25 = 2500 (A)$$

Sales Margin Var.

$$(35 - 35) \times 2000 = 0$$

Camlin	Page
Date	/ /

Sales Margin Vol - Var
 $(2100 - 2000) \times 35 = 3500(A)$

5

10

15

20

25

30

Ch.3 CVP Analysis

Meaning of Marginal cost (Variable cost)

Any expense which increases/decreases according to volume / prodⁿ is known as variable cost / marginal cost.

Meaning of Fixed cost

Any expense which is constant upto 100% capacity is known as fixed cost.

Meaning of semi-variable cost

It is a total of variable + fixed cost.

(Chart 1) (A)

$$S.P = 25000$$

V.P

5000

Contⁿ

20000

F.C

200000

{Rent}

Profit

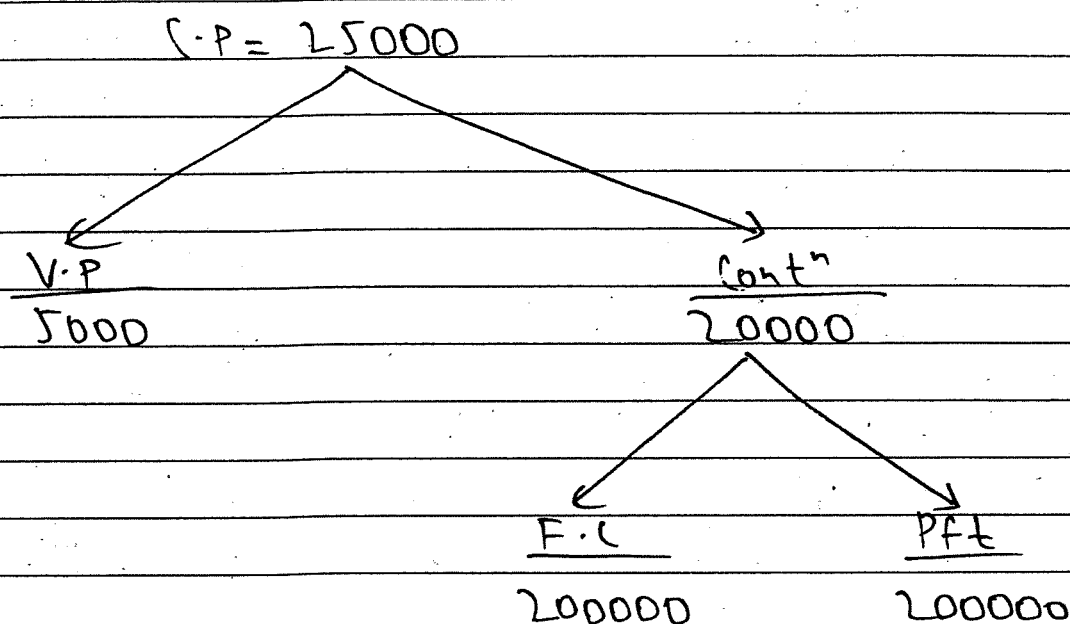
0

$$B.E.P. \text{ (in units)} = \left(\frac{200000}{20000} \right) = 10$$

Camlin	Page
Date	/ /

$$B.E.P. = \frac{F.C.}{C.P.U.}$$

Chart - (1) (B)



Exp. sales for reqd. profit

$$= \left(\frac{F.C + Pft}{C.P.U.} \right)$$

$$= \left(\frac{200000 + 200000}{20000} \right)$$

$$= 20$$

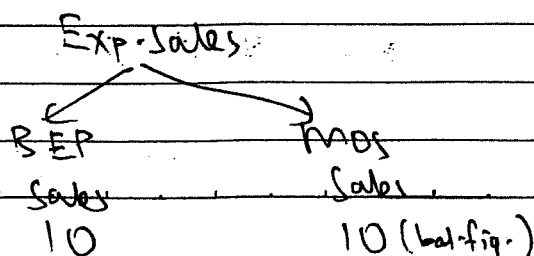
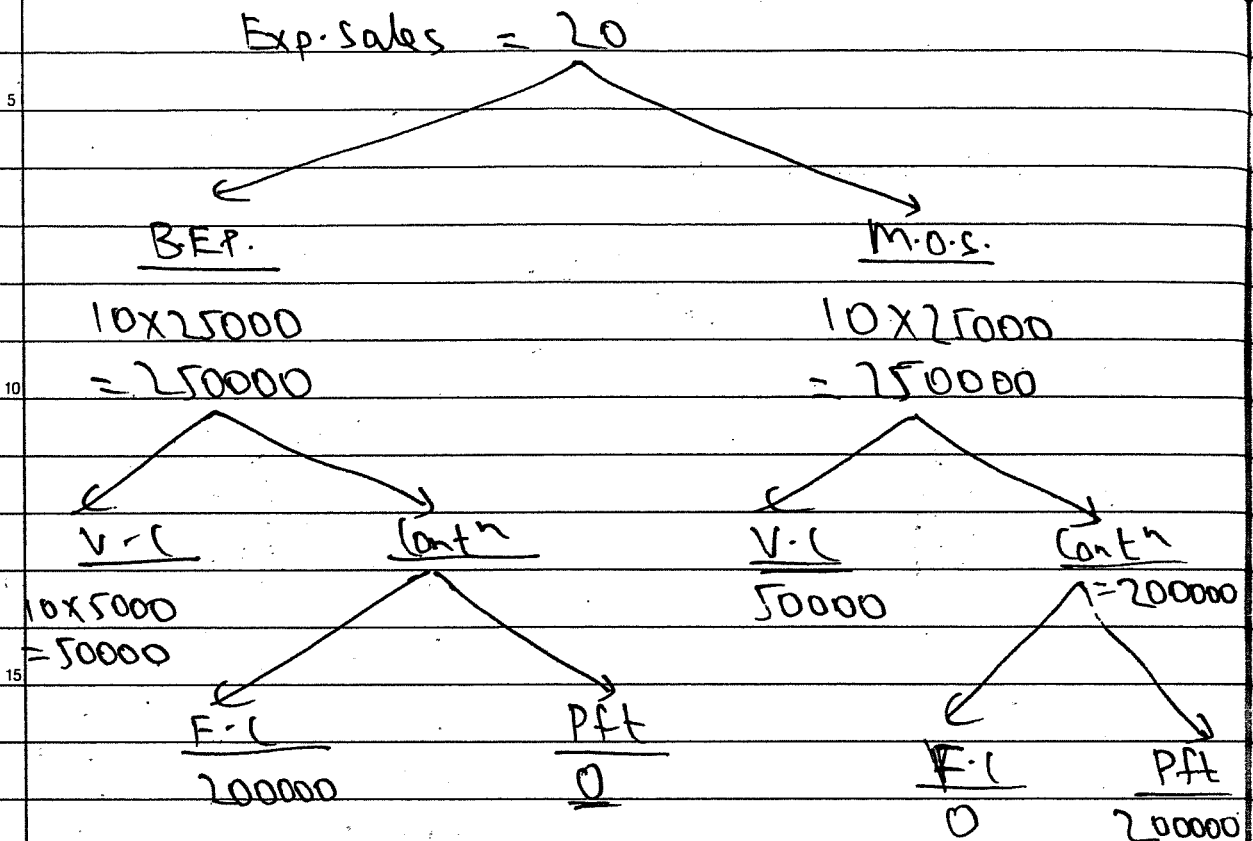
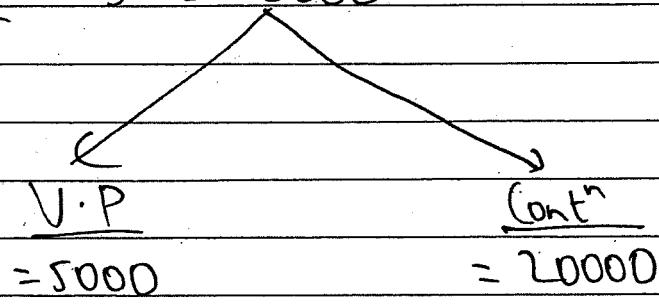


Chart-(2)* Application of P-V Ratio in Marginal CostingMeaning of P-V Ratio

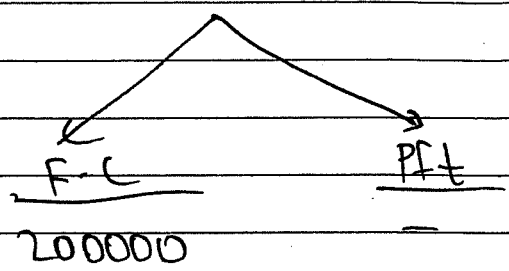
It is a relationship between Contribution to Sales.

$$P-V \text{ Ratio} = \left(\frac{\text{Contribution}}{\text{Sales}} \times 100 \right)$$

Exp. no. (3) S.P = 25000

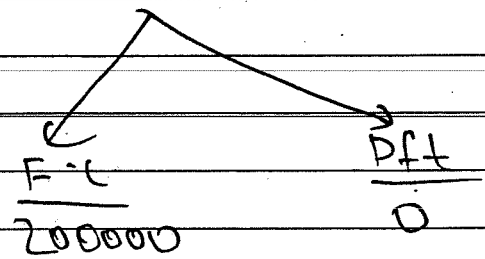
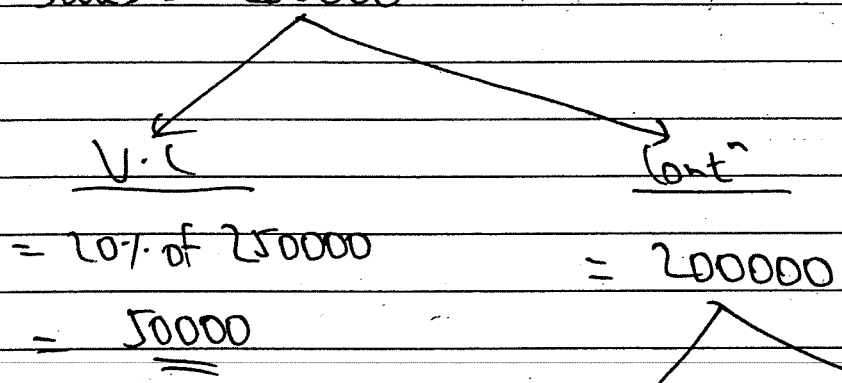


$P.V.R = \frac{20000}{25000} \times 100 = 80\%$



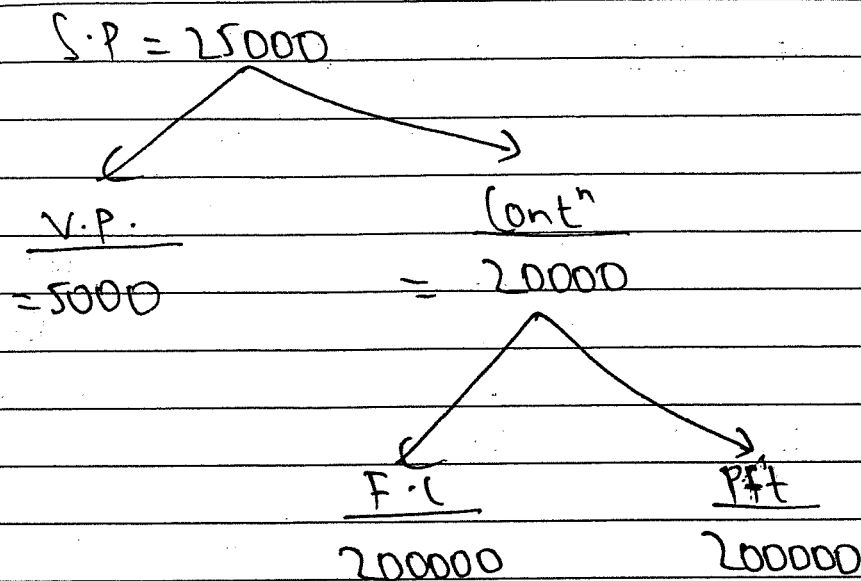
$B.E.P. = \frac{200000}{80\%} = 250000$

Sales = 250000



Exp. no. (4)

Camlin	Page
Date	/ /

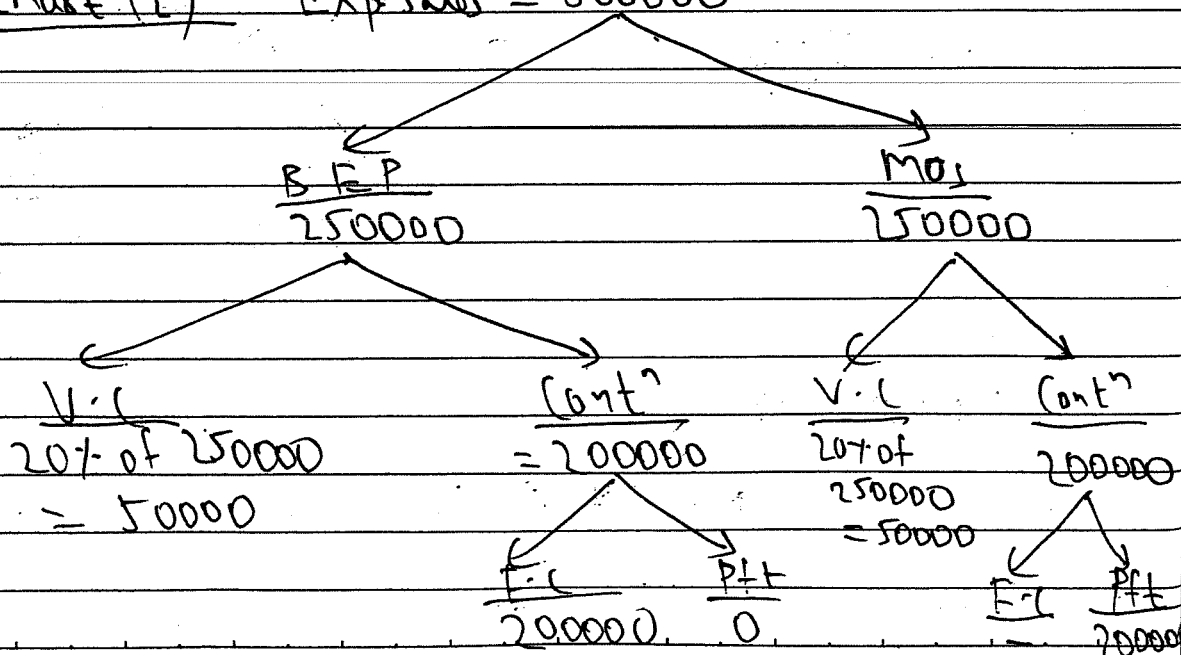


Exp. sales for reqd. profit

$$= \left(\frac{F.C + Pft}{P.V. Ratio} \right) \times 100$$

$$= \underline{\underline{500000}}$$

(Chart 2) Exp sales = 500000



$$P.V.R. = \left(\frac{\text{Change in pft}}{\text{Change in Sales}} \times 100 \right)$$

Sub. to verify

Period	I	II
Sales	500000	1000000
V.C	(250000)	(500000)
Cont ⁿ	250000	500000
F.C.	(100000)	(100000)
Pt/(loss)	150000	400000
P.V.R.	$\frac{250000 \times 100}{500000}$	$\frac{500000 \times 100}{1000000}$
	= 50%	= 50%

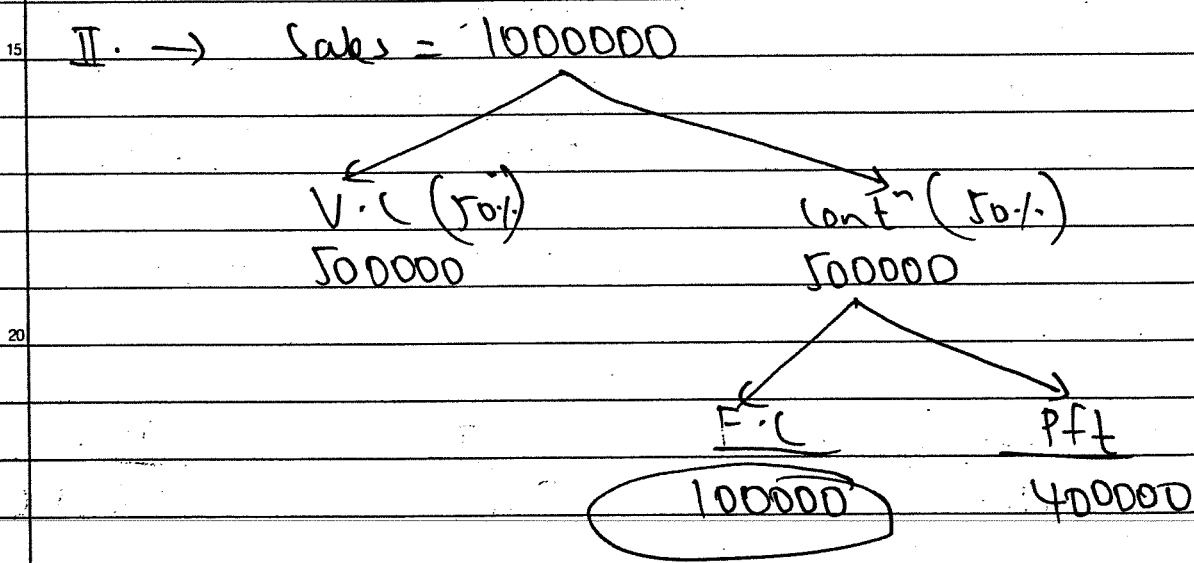
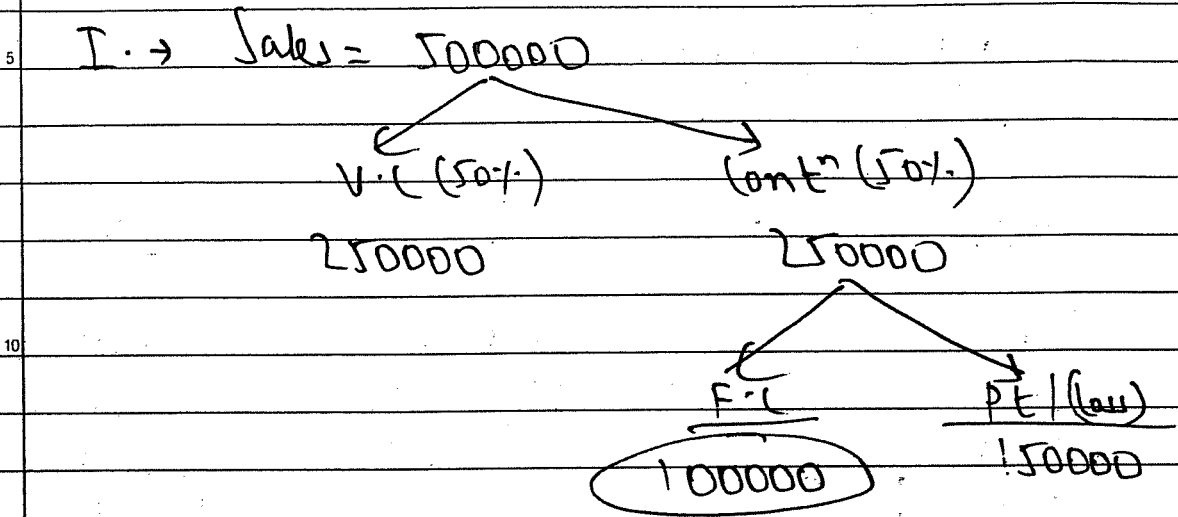
* Period	I	II
Sales	500000	1000000

Pt/(loss)	150000	400000
-----------	--------	--------

$$P.V.R. = \frac{\Delta \text{Profit}}{\Delta \text{Sales}} \times 100 = \frac{250000}{500000} \times 100 = 50\%$$

Camlin	Page
Date	/ /

Sub. to verification
↓



Camlin	Page
Date	/ /

Q.24

$$(i) \text{ P.V. Ratio} = \frac{\Delta \text{Profit}}{\Delta \text{Sales}} \times 100 = \frac{754}{3770} \times 100 = 20\%$$

VerificⁿFirst period

Sales = 14433

V-C (80%)

11546.40

Contⁿ (20%)

2886.60

F.C

2501.60

Pt / (Cont)

385

Second period

Sales = 18203

V-C (80%)

14562.40

Contⁿ (20%)

3640.60

F.C

2501.60

Pt / (Cont)

1139

Camlin	Page
Date	/ /

(ii)

Sales = 12000

$V.C (80\%)$
9600

$Cont^n (20\%)$
2400

F. Cost
2501.60

Pf L / (Loss)
-101.6

(iii)

Sales = 22508

$V.C (80\%)$
18006.40

$Cont^n (20\%)$
4501.60

F.C
2501.60

Profit
2000

(iv)

Sales reqd. to breakeven

B.E.P. Sales = 12508

$V.C (80\%)$
10006.40

$Cont^n (20\%)$
2501.60

F.C
2501.60

Pf L
0

Camlin	Page
Date	/ /

* Concept of Combined, Common, Overall basis B.E.P.

This concept is only applicable if fixed cost is 1 & products are more than 1.

Q.29

Ans)

Sales

$$\begin{aligned}
 A &:- 60000 \times 33.33\% = 20000 \\
 B &:- 60000 \times 41.67\% = 25000 \\
 C &:- 60000 \times 16.33\% = 10000 \\
 D &:- 60000 \times 8.33\% = 5000
 \end{aligned}$$

60000

V.C

Combined Contⁿ

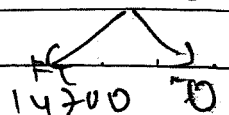
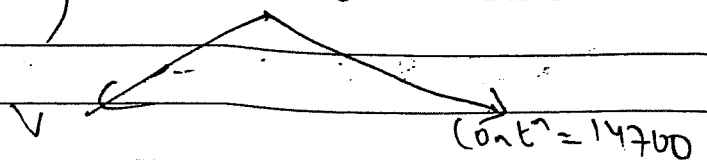
$$\begin{aligned}
 A & 20000 \times 60\% = 12000 \\
 B & 25000 \times 68\% = 17000 \\
 C & 10000 \times 80\% = 8000 \\
 D & 5000 \times 40\% = 2000 \\
 & \underline{39000}
 \end{aligned}$$

= 21000

Profit
000

$$\text{Combined P.V.R.} = \frac{21000}{60000} \times 100 = 35\%$$

$$\text{B.E.P.} = \left(\frac{14700}{35} \times 100 \right) = 42000$$



Camlin	Page
Date	/ /

(b) Sales

$$A = 60000 \times 25\% = 15000$$

$$B = 60000 \times 40\% = 24000$$

$$C = 60000 \times 30\% = 18000$$

$$D = 60000 \times 5\% = 3000$$

60000

V.C

Contribution

$$A = 15000 \times 60\% = 9000$$

$$= 19080$$

$$B = 24000 \times 68\% = 16320$$

$$C = 18000 \times 80\% = 14400$$

$$D = 3000 \times 40\% = 1200$$

40920

$$P.V.R. = \frac{19080}{60000} \times 100 = \underline{\underline{31.8\%}}$$

$$BEP = \frac{14700}{31.8\%} = \underline{\underline{46226.42}}$$

i.e. 46227

Camlin	Page
Date	/ /

Q.23Sales

BP = 20000

WP = 25000

SP = 10000

NB = 5000

60000

↓
V.C↓
Combined Contⁿ

BP = 20000 × 60% = 12000

= 21000

WP = 25000 × 68% = 17000

SP = 10000 × 80% = 8000

NB = 5000 × 40% = 2000

39000

$$P.V.R = \frac{21000}{60000} \times 100 = 35\%$$

$$B.E.P. Sales = \frac{14700}{35\%} = \underline{\underline{42000}}$$

Camlin	Page
Date	/ /

* BEP as per Required Ratio

(A)	<u>Avg. Cont. p.u.</u>	<u>P</u>	<u>Q</u>
	S.P	1800	2160
	V.P	(900)	(1800)
	Cont ⁿ	900	360
X	Reqd. Ratio	X 2	X 3
	Total Cont ⁿ	1800	1080

$$\text{Avg. Cont}^n (\text{p.u.}) = \frac{1800 + 1080}{2 + 3} = \underline{576}$$

$$\text{BEP} = \frac{88000}{576} = 152.77 \text{ units}$$

(B)	<u>P</u>	<u>Q</u>
S.P	1800	2160
(F) V.P	(900)	(1800)
Cont ⁿ	900	360
X	X 1	X 2
	1800	1080
	720	720

$$\text{Avg. C.P.U} = \frac{900 + 720}{1 + 2} = 540$$

$$\text{BEP} = \frac{88000}{540} = \underline{162.96}$$

Camlin	Page
Date	/ /

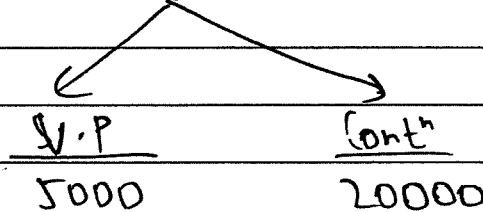
* Concept of shutdown point

(501) It is a point where Mgmt can take the decision whether to continue the operⁿ or shutdown.

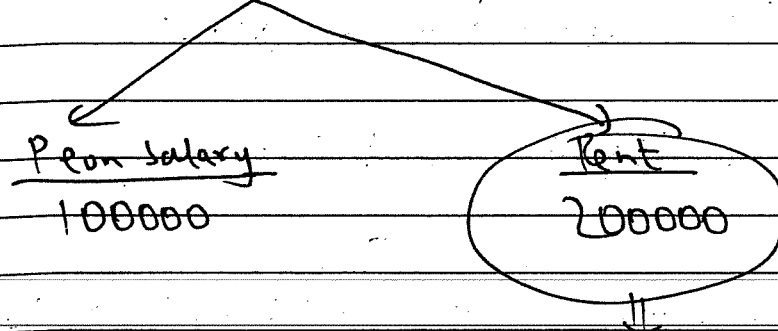
$$\text{Shutdown point} = \frac{\text{Total F.C.} - \text{Shutdown cost}}{\text{C.P.U.} / \text{P.V. Ratio}}$$

P.g.

$$S.P = 25000$$



$$F.C = 300000 \text{ (p.a.)}$$



$$\text{Shutdown pt} = \frac{300000 - 200000}{20000}$$

$$= \underline{\underline{15}}$$

Camlin	Page
Date	/ /

Verifⁿ
Contⁿ

5	4	6
100000	80000	120000
(5 × 20000)	(4 × 20000)	(6 × 20000)

F.C

(300000)	(300000)	(300000)
----------	----------	----------

Pt / loss

(200000)	(220000)	(180000)
----------	----------	----------

Shut down
pt

lose

Continue

Q.16
P.M

Given :- 200000 has (p.a.)

$$F.C \text{ (p.a.)} = (200000 \times 4) = 800000 \text{ (if continue)}$$

$$Q \text{ trly} = \frac{800000}{4} = 200000$$

$$\text{Shutdown cost} = (74000 + 14000) = 88000$$

$$S.P = 21.00$$

$$\text{Exp. sales} = 10000 \text{ (next qtr)}$$

V.P

(contⁿ p.u.)
= 8

$$DM = 7.8$$

$$DL = 2.1$$

$$V.O. = 2.5$$

$$S.O. = \frac{0.6}{12}$$

Camlin	Page
Date	/ /

Statement showing Analysis of proposal

Option (I) : If continue operation

Cont ⁿ	80000
F.C	(200000)
PT / (loss)	(120000)

<u>If shut down</u>	
PT / (loss)	(88000)

Decision :- Shutdown

$$\text{a(ii) Shutdown pt} = \frac{200000 - 88000}{8} = \underline{14000 \text{ units}}$$

Q.17

$$S.P = 8.00$$

$$\text{Sales} = 95000 \text{ Units (80\% capacity)}$$

$$\frac{V.C}{6} \quad \frac{\text{Cont}^n}{2}$$

$$\text{Full Capacity} = 118750 \text{ Units} \\ (95000 \div 80\%)$$

$$\text{Total F.C} = 350000$$

$$\text{Shutdown units} = 130000 + 15000 = (145000)$$

Camlin	Page
Date	/ /

Stat. showing Analysis of proposal

Option I :- Continue oper^{ns}

$$\begin{array}{rcl}
 \text{Contⁿ } (8 \times 95000) & & 190000 \\
 \text{F.C} & & (350000) \\
 \text{Loss} & & \underline{(160000)}
 \end{array}$$

Option II :- Shut down

$$\begin{array}{rcl}
 \text{Loss} & & (145000)
 \end{array}$$

Decision :- Shut down

$$\begin{aligned}
 \text{Shut down pt} &= \frac{\text{T.F.C} - \text{S.D. costs}}{\text{C.P.U.}} = \frac{350000 - 145000}{2} \\
 &= \underline{102500 \text{ units}}
 \end{aligned}$$

$$\text{\% capacity} = \frac{102500}{118750} \times 100 = \underline{86.31\%}$$

Camlin	Page
Date	/ /

* Concept of limiting factor in Marginal costing

Steps for solving the sum

Step 1 - Statement showing contribution p.u. p.h. & Rank for product

Step 2 - Statement showing Production plan for Max. profit.

Step 3 - Statement showing max. pft / (loss).

Product	S.P	V.P.	Cont ⁿ
A	100	40	60 ÷ 4 hrs

B	100	60	40 ÷ 2 hrs
---	-----	----	------------

Max. hrs. = 20000 - Limiting factor / key-factor
contⁿ

Max. demand = B = 5000 units

A = 10000 units

Step 1 - Stat. showing contⁿ p.u. / p.h. / RFP

	A	B
S.P (p.u.)	100	100
(-) V.P (p.u.)	(40)	(60)
Cont ⁿ (p.u.)	60	40
L ₃₀ Hrs (p.u.)	÷ 4	÷ 2
Cont ⁿ p.h.	15	20
	II	I

Camlin	Page
Date	/ /

Step no. (2) Stat. showing prod. plan. for Max. pft

Hrs Available	Product	Units x Hrs = Total p.u.	Bal.
20000 hrs.	'B'	5000 x 2 = 10000	10000
	'A'	1000 ⁽²⁵⁰⁰⁾ x 4 = 10000	-

Step no. (3) Stat. showing Max. pft / (loss)

Products	Units x Cont. p.u. =	Total Cont.
A	2500 x 60 =	150000
B	5000 x 40 =	200000
		<u>350000</u>
	F. cost	-
	<u>Pft</u>	<u>350000</u>

Camlin	Page
Date	/ /

Q.27 Step no. I :- Stat. showing Contⁿ p.u. / p.h. / RFP

	<u>A</u>	<u>B</u>	<u>C</u>
S-P (p.u.)	860	1040	930
(-) V-P (p.u.)			
DM	260	300	250
DL	130	270	260
V-D.	110	230	180
Cont ⁿ p.u.	360	240	240
10 $\frac{1}{2}$ Hrs p.u.	12	6	3
Cont ⁿ p.h.	30	40	80
RFP	III	II	I

15 Step II :- Stat. showing PP for MP

	Hrs available	Products	Units x Hrs p.u. = Total	Bal. hrs.
(1)	3600	C	1200 X 3 = 3600	0
(2)	6000	C	1800 X 3 = 5400	600
		B	(100) X 6 = 600	-
(3)	8400	C	1800 X 3 = 5400	3000
		B	300 X 6 = 1800 3000	1200
		A	100 X 12 = 1200	-
(4)	10800	C	1800 X 3 = 5400	5400
		B	300 X 6 = 1800	3600
		A	300 X 12 = 3600	-

<u>Hrs available</u>	<u>Products</u>	<u>Units X</u>	<u>Contⁿ</u> <u>P.U.</u>	= <u>Total</u> <u>Contⁿ</u>	<u>F.C.</u>	<u>Pt / (aw)</u>
i) 3600	C	1200 X 240 =		288000	(100000)	188000
ii) 6000	C	1800 X 240 =		432000		
	B	100 X 240 =		24000		
				456000	(150000)	306000
iii) 8400	C	1800 X 240 =		432000		
	B	300 X 240 =		72000		
	A	100 X 360 =		36000		
				540000	(220000)	320000
iv) 10800	C	1800 X 240 =		432000		
	B	300 X 240 =		72000		
	A	300 X 360 =		108000		
				612000	(300000)	312000

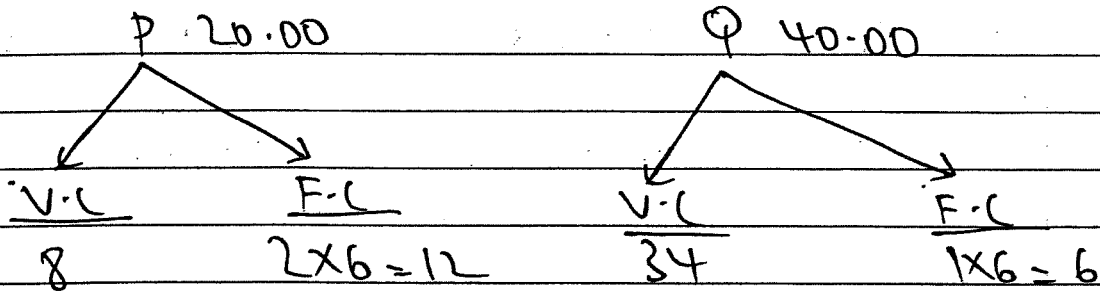
Q.31

Note no. (i) : Hrs available

Products	Units	Hrs p.u.	Total
P	40000 x	2	= 80000
Q	80000 x	1	= 80000
			<u>160000</u>

Per. Rate = $\frac{960000}{160000} = 6.00$

Break up of Cost



Max. P 60000
 Q 10000

Camlin	Page
Date	/ /

Step I:- Stat. showing Contⁿ p.u. / p.h. / RFP

	<u>P</u>	<u>Q</u>
S.P (p.u.)	25	50
V.P (p.u.)	(8)	(34)
Cont ⁿ (p.u.)	17	16
∴ Hrs p.u.	2	1
Cont ⁿ (p.h.)	8.5	16
RFP	II	I

Step II:- Stat. showing Prodⁿ plan for Max. pft

Hrs Available	Products	Units X Hrs p.u.	= Total	Bal. hrs.
160000	Q	100000 x 1 =	100000	60000
	P	30000 x 2 =	60000	-

Step III:- Stat. showing Analysis of Pt / (loss)

	<u>Ans (i)</u>	<u>Ans (ii)</u>
	<u>Bud. pt / (loss)</u>	<u>Max. pft / (loss)</u>
P	680000 (40000 x 17)	510000 (30000 x 17)
Q	1280000 (80000 x 16)	1600000 (100000 x 16)
Total Cont ⁿ	1960000	2110000
F. cost	(960000)	(960000)
Pt	1000000	1150000

Camlin	Page
Date	/ /

Ans. (iii)

Stat. showing S.P p.u. of CCut down 'P' & save the hrs.
(min. contⁿ p.h.)& save the hrs $(30000 \times 2) = 60000$ Possible prodⁿ of 'C' = $60000 \div 1.5 = 40000$
units of C

'Q'	100000×34	=	3400000
-----	--------------------	---	---------

'C'	40000×21	=	840000
-----	-------------------	---	--------

Present Fixed cost	960000
--------------------	--------

Add ⁿ fixed cost	60000
-----------------------------	-------

Present profit (i)	1150000
--------------------	---------

Add ⁿ profit $(200000 \times 15\% \times \frac{1}{2})$	2500
---	------

Sales - P & C 6412500

Sales 'P'	
100000×50	
= 5000000	

Sales 'C'	
= 1412500	
$\div 40000$	
= <u>35.3125</u>	

Camlin	Page
Date	/ /

* If limiting factor is not given

Q.25

Note no. 1 (contⁿ p.4)

	<u>P</u>	<u>Q</u>
S.P (p.u.)	215	320

	<u>(22)</u>	<u>(28)</u>
V.P. (p.u.)		
Mat 'X'		
Mat. 'Y'	<u>(8)</u>	<u>(32)</u>

	<u>(36)</u>	<u>(54)</u>
Direct wages (p.u.)		
Dept 'A'		
B	<u>(18)</u>	<u>(36)</u>
C	<u>(54)</u>	-
D	-	<u>(72)</u>

	<u>(23)</u>	<u>(14.3)</u>
V.D.		
Cont ⁿ p.u.	<u>54</u>	<u>83.7</u>

Fixed cost = $12000 \times 12 = \underline{\underline{144000}}$

Hrs Available

<u>Dept</u>	
A (30 X 300 X 8 hrs)	= 72000
B (16 X 300 X 8 hrs)	= 38400
C (18 X 300 X 8 hrs)	= 43200
D (24 X 300 X 8 hrs)	= 57600

Hrs p.u.

	<u>P</u>	<u>Q</u>
A	$36 \div 6 = 6$	$54 \div 6 = 9$

$$B \quad 18 \div 6 = 3$$

$$36 \div 6 = 6$$

$$C \quad 54 \div 6 = 9$$

D

-

$$72 \div 6 = 12$$

Step no. (1) Start showing prodⁿ plan for Max. pf^t

Option (r)	Dept	Hrs available $\div$ Hrs p.u. =	Possible units	Bal. hrs
P & Q	A	$72000 \div 6 =$	12000	
	B	$38400 \div 3 =$	12800	
	C	$43200 \div 9 =$	4800	
	D		(P) itna kar sakte hain	

Bal. hrs

$$(72000 - (4800 \times 6)) - 43200 \div 9 = 4800$$

$$(38400 - (4800 \times 3)) - 24000 \div 6 = 4000$$

$$(43200 - (4800 \times 9)) = 0$$

$$(57600 - 0) - 57600 \div 12 = 4800$$

Option I	Dept	Hrs available $\div$ Hrs p.u. =	Possible prod ⁿ
P & Q	A	$72000 \div 9 = 8000$ units	$[72000 - (4800 \times 9)] = 28800 \div 12 = 2400$
	B	$38400 \div 6 = 6400$ units	$38400 - 4800 \times 6 = 9600 \div 3 = 3200$
	C	$43200 \div$	$(43200 - 0) = 43200 \div 9 = 4800$
	D	$57600 \div 12 =$	$57600 - (4800 \times 12) = 0$

Camlin	Page
Date	/ /

~~Part (1)~~
Ans. no. (a) Stat. showing Analysis of max. pft / (loss)

Option	P & Q	Q & P
P	259200 (4800 × 54)	172800 (3200 × 54)
Q	334800 (4000 × 83.7)	401760 (4800 × 83.7)
Total cont ⁿ	594000	574560
(-) Fixed cost	(144000)	(144000)
	450000	430560

Part (a)
Ans. no. (b)

Stat. showing Analysis of pft & loss

Products	Units × Cont ⁿ p.u. = Total Cont ⁿ	F.C. Pt (loss)
P	4800 × 54 = 259200	259200 - 144000 = 115200
Q	4800 × 83.70 = 401760	401760 - 144000 = 257760

Part (2)

Stat. showing prodⁿ plan for if material = 180000

$$P = \left(\frac{180000}{22+8} \right) = 6000 \text{ units}$$

sub. to 4800 units

$$Q = \left(\frac{180000}{28+32-60} \right) = 3000 \text{ units (material)}$$

Q.26

Note no. 1 :- Contⁿ p.u.

	A	B
Target price (p.u.)	145	115
V.P (p.u.) Mat.	20 (1.60 X 12.5)	20 (1.60 X 12.5)
Machine A	48 (0.6 X 80)	20 (0.25 X 80)
Machine B	50 (0.5 X 100)	55 (0.55 X 100)
Cont ⁿ	27.00	20.00

Note no. 2

Stat. showing limiting factor

	A	B
Material	13000 kgs 1.6	13000 kgs 1.6
	= 8125 units	= 8125 units

M/C A

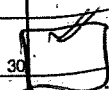
$$\frac{4000}{0.6} = 6666.67$$

$$\frac{4000}{0.25} = 16000$$

M/C B

$$\frac{4500}{0.5} = 9000$$

$$\frac{4500}{0.55} = 8181.8$$



the no. of units & resources ke limiting factor ko satisfy karte hain.

Camlin	Page
Date	/ /

Statement showing Analysis of Pt (hrs)

Products	Units	X	Cont ⁿ p.u.	=	Total Cont ⁿ
A	6666	X	27	=	180000
B	8125	X	20	=	162500
					<u>342482</u>

Ans no. (ii)

Revised Contⁿ p.u.

	Part A	Part B
Cont ⁿ p.u.	27.00	20.00
(-) Reduction in S.P	(14.50)	(11.50)
Cont ⁿ (p.u.)	<u>12.50</u>	<u>8.50</u>

Statement showing Unused M/C Hrs.

	M/C	Hrs	
A	A	$[(4000 - (6666 \times 0.60))]$	Unused hrs = 0.40 hrs
	B	$[(4500 - (6666 \times 0.50))]$	1167 hrs
			<u>1167.40</u>

The total hrs left

B	A	$\{4000 - (8125 \times 0.25)\}$	= 1968.75
	B	$\{4500 - (8125 \times 0.55)\}$	= 31.25
			<u>2000</u>

Camlin	Page
Date	/ /

Statement showing Revised Contⁿ

Part A

Part B

Contⁿ

(6666×12.5)

(8125×8.50)

Hire chgs.

(1167.4×60)

(2000×60)

Total Contⁿ

Camlin	Page
Date	/ /

* Application of Relevant costing in Decision-making

Meaning of Relevant cost

Any exp. which is fluctuating according to decision is known as relevant cost.

For e.g. ① Fixed cost is not relevant for the decision if it is constant.

* Concept of make & buy

Q.28

In this case, fixed cost is not relevant.

$$\text{Pur. cost (p.u.)} = 23.00$$

$$\text{Mfg. V. cost (p.u.)} = 22.00$$

$$(15 + 7)$$

$$\text{loss on purchase} = (1.00)$$

Decision :- Manufacture.

* Concept of make & buy with limiting factor

(Q.32)
P.M

Note no. 1 :- Fixed cost is not relevant

Note 2 :- Hrs required

Product	Exp p.u.	÷ 10	=
A	10	÷ 10	= 1 hr
B	20	÷ 10	= 2 hrs
C	10	÷ 10	= 1 hr
D	60	÷ 10	= 6 hrs

Camlin	Page
Date	/ /

Step (i) Stat. ~~of~~ showing loss on pur. p.u. / p.h. / R.F.

	A	B	C	D
Pur. price	(60)	(59)	(52)	(68)
Mfg. V. cost	57	55	57	144
	(62-5)	(59-4)	(68-11)	(164-20)
Loss on pur p.u.	(3)	(4)	5	(24)
	Total Prod'n Cost	Fixed OH		
÷ Hrs p.u.	÷ 1	÷ 2	Purchase	÷ 6
Loss on pur. p.h.	(3)	(2)		(4)
	II	III		I

Ans. no. (i)

Stat. showing Prodⁿ plan for Min. cost

M/c hrs	Product	Units X Hrs p.u.	= Total	Bal. hrs
20000	D	2800 X 6	= 16800	(20000-16800)
	A	2000 X 1	= 2000	(3200-2000)
	B	600 X 2	= 1200	(1200-1200)

Camlin	Page
Date	/ /

Ans
(ii)

Stat - showing Analysis of Proposal

$$B (3500 - 600) = 2900 \text{ units}$$

↓
IInd shift

$$D_{mat.} \quad 27.00$$

$$D_{wages} (8 \times 125\%) \quad 10.00$$

$$D_{exp.} \quad 20.00$$

$$\underline{57.00}$$

$$\times 2900$$

$$= 165300$$

↓
Purchases

$$2900 \times 59$$

$$= 171100$$

DKL
LINE

F.O.

$$3000$$

$$(2900 \times 2) = 5800 / 6000 \text{ hrs}$$

$$\left(\frac{6000 \times 500}{1000} \right)$$

$$\underline{168300}$$

Decision :- IInd shift

Make & Buy decision with l.f

Q.33

Product 'N' 1 Batch = 100 units

P

15 hrs (P.B.)

Q

25 hrs (P.B.)

R

30 hrs (P.B.)

$$\text{Max. hrs.} = 42000$$

$$\text{Percent prod}^n = \left(\frac{42000}{15+25+30} \right) = \underline{\underline{600 \text{ batches}}}$$

Camlin	Page
Date	/ /

Contⁿ per batch
 S.P (p.b.) (100 X 37.5)
 V.P (p.b.)
 Contⁿ p.b.

per batch
 3750
 (2075)
1675

Fixed cost = 660000
 (600 X 1100)

Demand

600 X 150%
 = 900 batches

600 X 175%
 = 1050 batches

Step no (1)

Statement showing loss on pur. p.b/p.h./RFP

	P	Q	R
Pur-price (p.b.)	(555)	(700)	(840)
Mfg. V. cost	375	450	450
Loss on pur. (p.b.)	180	250	390
÷ Hrs p.b.	÷ 15	÷ 25	÷ 30
Loss per hr.	12	10	13
RFP,	II	III	I

Camlin	Page
Date	/ /

Ansno. (i) Stat. showing present Pt / (low)

Particulars	₹
Cont ⁿ (6000 X 1675)	1005000
F.C	(660000)
Pt / (low)	<u>345000</u>

Ansno. (ii) Stat. showing Prodⁿ / Purchase plan

If demand is (1) 900 batches (2) 1050 batches

Hrs available	Product	Prod ⁿ x Hrs p-b = Total	Bal. hrs.
42000	R	900 X 30 = 27000	15000
Demand	P	900 X 15 = 13500	1500
(1) 900 batches	Q	(60) X 25 = 1500	-
Purchases	Q	(900-60) = 840 X 100 = 84000 units	
42000	R	1050 X 30 = 31500	10500
(2) Demand = 1050	P	(1050) X 10 = 10500	-
	P	(1050-700) = 350 X 100 = 35000 units	
	Q	(1050-0) = 105 X 100 = 105000 units	

Camlin	Page
Date	/ /

Ans no. (iii)

Statement showing Analysis of Pt/loss

	Demand = 900 batches	Demand = 1050 batches
Cont ⁿ	1507500 (900 X 1675)	1758750 (1050 X 1675)
F.C	660000	660000
Add: Pw. cost (Q)	210000 (250 X 840)	262500 (250 X 1050)
(P)	-	63000 (180 X 350)
	637500	773250

For Understanding

DKE L.M.R

900 batches

840 - Purchase

$\begin{aligned}
&+ S.P (p.h.) = 3750 \\
&+ Com (P) = (375) \\
&\quad (Q) = (700) \\
&\quad (R) = (450) \\
&A. con: = (800) \\
&\hline
&1425
\end{aligned}$

60 - Manufacture

$\begin{aligned}
&3750 \\
&(375) \\
&(450) \\
&(450) \\
&(800) \\
&\hline
&1675
\end{aligned}$

1 hr 2 x 60 min
120 min

Camlin	Page
Date	/ /

$$\begin{array}{r} \times 840 \\ 1197000 \end{array}$$

$$\begin{array}{r} \times 60 \\ 100500 \end{array}$$

(1197000 + 100500)
F. cost

$$\begin{array}{r} 1297500 \\ (660000) \\ \hline 637500 \end{array}$$

* Concept of Throughput A/c / T.O.C.

Q.12 (a) Stat. showing contⁿ p.u. / p.hrs / RFP

	W	X	Y	Z
S.p.	56	67	89	96
(-) Mat.	(22)	(31)	(38)	(46)
Lab.	(15)	(20)	(18)	(24)
V.O.	(12)	(15)	(18)	(15)
Cont ⁿ p.u.	7	1	15	11
÷ 20 Hrs p.u.	10	10	15	15
Cont ⁿ per minute	0.7	0.1	1	0.73
RFP	C	D	A	B

(b)

Avg. cont ⁿ p.u.	W	X	Y	Z
(Cont ⁿ p.u.)	7	1	15	11
X Reqd. ratio	X 2	X 3	X 3	X 4
Total Cont ⁿ	14	3	45	44

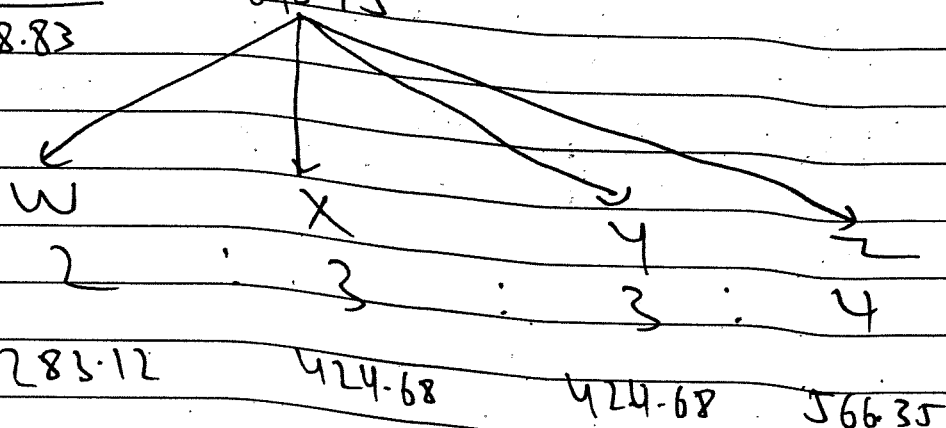
Camlin	Page
Date	/ /

$$\text{Avg. Cont}^n \text{ p.u.} = \frac{14+3+45+44}{2+3+3+4}$$

$$= \frac{106}{12}$$

$$= \underline{\underline{8.83}}$$

$$\text{BEP} = \frac{15000}{8.83} = 1698.75$$



(Note) :- If in the quesⁿ, the language is used like Throughput A/c^{ng}, Throughput A/c^{ng}, Theory of Constraints, then only Rank for production $\text{Contribution} = \text{S.P.} - \text{Material cost}$ only.

(c) Stat. showing Contⁿ p.u. / per min / RFP

	W	X	Y	Z
S.P (p.u.)	56	67	89	96
V.P (p.u.)	(22)	(31)	(38)	(46)
Cont ⁿ p.u.	34	36	51	50
÷ Minutes	÷ 10	÷ 10	÷ 15	÷ 15
Cont ⁿ p.m.	3.4	3.6	3.4	3.33
	II	I	II	III

Camlin	Page
Date	/ /

Q.no. (14)Statement showing calculation of limiting factor

Machine	A	B	C	Total hrs reqd.	Total hrs available	(Shortage) Surplus	Ratio
M ₁	2400 (200X12)	800 (200X4)	400 (200X2)	3600	3200	(400)	112.5%
M ₂	3600 (200X18)	1200 (200X6)	600 (200X3)	5400	3200	(2200)	166.7%
M ₃	1200 (200X6)	400 (200X2)	200 (200X1)	1800	3200	(1400)	76.25%

Limiting factor is (M₂)Step 1: - Stat. showing Cont. p.u. / p.h. / RFP - (M₂)

	A	B	C
Cont ⁿ p.u.	24	20	12
Hrs p.u. (M ₂)	18	6	3
Cont ⁿ p.h.	1.33	3.33	4
RFP	III	II	I

Step 2: - Stat. showing Prodⁿ plan

Hrs	Product	Units X Hrs p.u. = Total	Bal. hrs.
3200	'C'	200 X 3 = 600	(3200-600)
	'B'	200 X 6 = 1200	(2600-1200)
	'A'	77.77 X 18 = 1400	(1400-)

Q.15

Stat-shewing calculation of Lf

	A	B	C	Total	T.H.A.	(Shortage)/ Surplus	R _o
1	5000 (500x10)	1000 (500x2)	2000 (500x4)	8000	6000	(2000)	133
2	7500 (500x15)	1500 (500x3)	3000 (500x6)	12000	6000	(6000)	200
3	2500 (500x5)	500 (500x1)	1000 (500x2)	4000	6000	2000	66.6

The above analysis clearly shows that Machine 2 is having highest T.A. Ratio, so it is to be considered the limiting factor.

Stat-shewing Contⁿ p.u. / p.h. / RFP (m₂)

	A	B	C
Cont ⁿ p.u.	30	25	15
Hrs p.u. (m ₂)	15	3	6
Cont ⁿ p.h.	2	8.33	2.5
	III	I	II

hrs.

00-600

10-1200

00-

Camlin	Page
Date	/ /

Step no. II

Stat. showing prodⁿ plan

Hrs Product Units X Hrs p.u. = Total Bal-hrs.

6000 B 500 X 3 = 1500 (6000-1500)

 C 500 X 6 = 3000 (4500-3000)

 A 500 X 15 = 1500 (1500-1500)

1.2 A.B.C.

Camlin	Page
Date	/ /

Meaning of Activity based costing

It is a modern method for recovery of OH, which is based on Activity cost & their cost drivers.

Steps for solving the sum :-

Step I :- Statement showing Cost driver rate

Step II :- Statement showing Cost driver rate per unit per product

Step III :- Statement showing Cost sheet as per ABC

Step IV :- Statement showing Comparative Cost sheet

Step V :- Comments

Case Study

(i) Trad-method

Products	Mat. Cost p.u.	Lab. Cost p.u.	M/L hrs	Units
A	2.00	2.00	20000	20000
B	2.00	2.00	30000	30000

M/L hrs
50000

R.R.

(10)

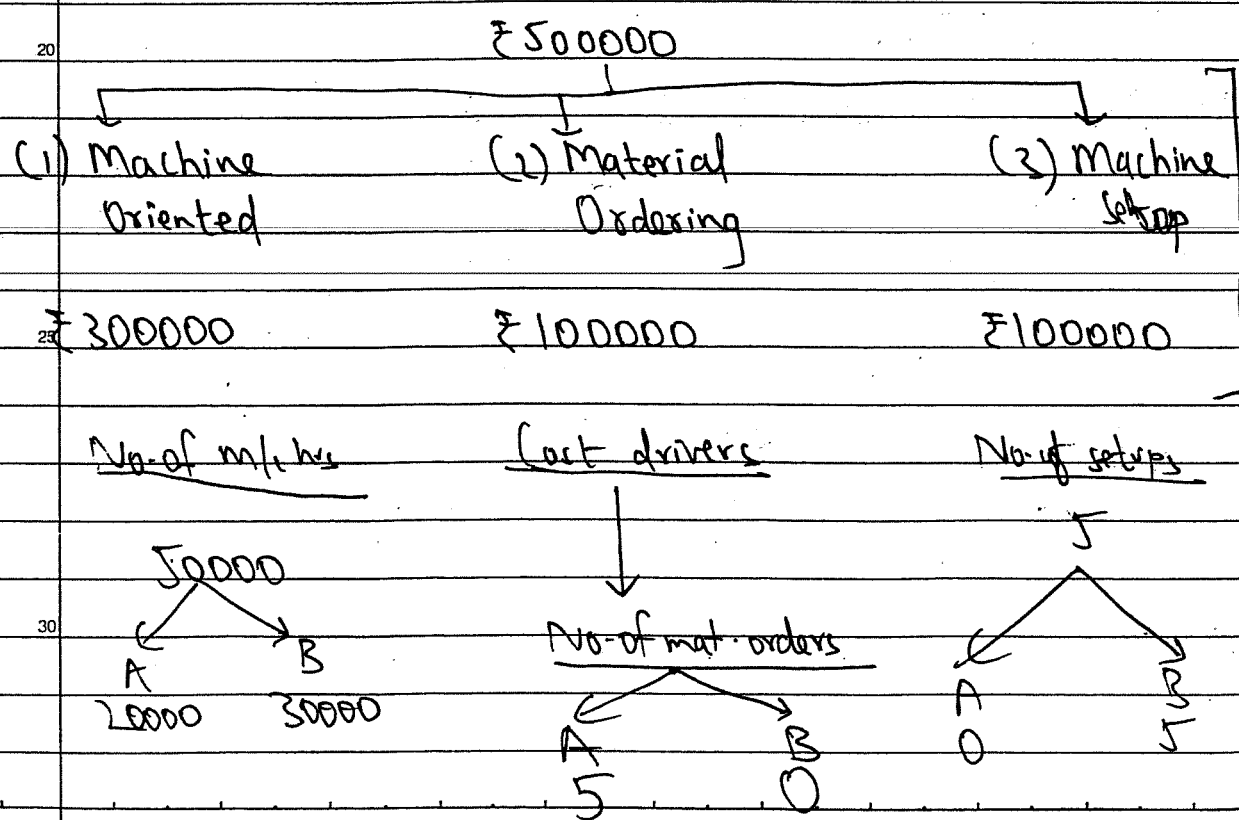
O.H.

500000

Step no (I) Statement showing cost sheet as per Traditional method

Products	A	B
Units	20000	30000
	P.u.	P.u.
<u>D. cost</u>		
DM	2.00	2.00
DL	2.00	2.00
Prime cost	4.00	4.00
<u>Indirect cost</u>		
F.O.	10.00 (1x10)	10.00 (1x10)
Factory cost	14.00	14.00

MODERN METHOD



Step 1:- Statement showing cost driver rate

<u>Activity</u>	<u>Cost driver</u>	$\left(\frac{\text{Activity cost}}{\text{Cost driver}} \right) = \text{C.D.R}$
-----------------	--------------------	---

(1) Machine oriented	No.-of M/c hrs	$\left(\frac{300000}{50000} \right) = 6.00$
----------------------	----------------	--

(2) Material ordering	No.-of orders	$\left(\frac{100000}{5} \right) = 20000$
-----------------------	---------------	---

(3) Machine setups	No.-of setup	$\left(\frac{100000}{5} \right) = 20000$
--------------------	--------------	---

Step II:- Statement showing cost driver rate per unit per product

<u>Activity</u>	<u>Products</u>	$\frac{\text{Cost driver used}}{\text{No.-of M/c hrs}} \times \frac{\text{Cost driver rate}}{\text{rate}} \div \text{Prod}^n = \frac{\text{Cost driver rate p.u. p.p}}{\text{rate p.u. p.p}}$
-----------------	-----------------	---

(1) Machine oriented	A	$20000 \times 6 \div 20000 = 6.00$ units
----------------------	---	---

	B	$30000 \times 6 \div 30000 = 6.00$ units
--	---	---

(2) Material Ordering	A	$5 \times 20000 \div 20000 = 5.00$
-----------------------	---	------------------------------------

(3) Machine setup	B	$5 \times 20000 \div 30000 = 3.33$
-------------------	---	------------------------------------

Camlin	Page
Date	/ /

Step no. (3) Statement showing cost sheet as per A.B.C.

<u>Products</u>		<u>A</u>	<u>B</u>
5	Units	20000	30000
		P.u.	P.u.
<u>Direct</u>			
	DM	2.00	2.00
10	DL	2.00	2.00
	Prime cost	4.00	4.00
<u>Ind. cost F.O.</u>			
	Activity (1)	6.00	6.00
15	- " (2)	5.00	-
	- " (3)	-	3.33
		15.00	13.33

Step no. (4) Statement showing Comparative cost sheet

	<u>Trad. method</u>	<u>Modern method</u>
A	14.00	15.00
B	14.00	13.33
25	28.00	28.33

Step no. (5) Comments

30 The above analysis clearly shows that the cost p.u. as per ABC is more accurate & reliable than traditional method, so Co. should follow the modern method for recovery of O/H to get the correct cost & max. profit.

5

10

Camlin	Page
Date	/ /

Step no. 2) Statement showing Cost driver rate p-u/p.p.

Activity Products Cost driver Used X C.D.R. ÷ Prodⁿ = Cost driver rate p-u/p.p.

(1) M/c

oriented

No. of m. hrs

P	500 X 3 ÷ 1000 = 1.50
Q	5000 X 3 ÷ 10000 = 1.50
R	2400 X 3 ÷ 1200 = 6.00
S	42000 X 3 ÷ 14000 = 9.00

(2) Ordering

of Material

No. of orders

P	3 X 256 ÷ 1000 = 0.768
Q	12 X 256 ÷ 10000 = 0.3072
R	3 X 256 ÷ 1200 = 0.64
S	12 X 256 ÷ 14000 = 0.20

(3) Setup

cost

No. of setups

P	3 X 348 ÷ 1000 = 1.044
Q	18 X 348 ÷ 10000 = 0.6264
R	5 X 348 ÷ 1200 = 1.45
S	24 X 348 ÷ 14000 = 0.60

(4) Admin

OH

No. of spare parts

P	6 X 955 ÷ 1000 = 5.73
Q	15 X 955 ÷ 10000 = 1.43
R	3 X 955 ÷ 1200 = 2.39
S	12 X 955 ÷ 14000 = 0.82

(5) Mat.

handling

No. of times mat. handled

P	6 X 374 ÷ 1000 = 2.24
Q	30 X 374 ÷ 10000 = 1.12
R	9 X 374 ÷ 1200 = 2.81
S	36 X 374 ÷ 14000 = 0.96

Camlin	Page
Date	/ /

Step (3) Statement showing cost sheet as per ABC

<u>Product</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>
<u>Units</u>	1000	10000	1200	14000
<u>Direct cost</u>				
DM	10.00	10.00	32.00	34.00
DL	6.00	6.00	16.00 4.00	18.00 1.00
Prime cost	16.00	16.00	36.00	52.00

Add 1.- 10

Camlin	Page
Date	/ /

Q.5Step(1) :- Statement showing cost driver rate (C.D.R.)

<u>Activity</u>	<u>Cost driver</u>	$\left(\frac{\text{Activity cost}}{\text{Cost driver}} \right) = \text{Cost driver rate}$
-----------------	--------------------	--

(1) <u>Stores/Rec.</u>	No. of pur. req. (300+450+500)	$\left(\frac{296000}{1250} \right) = 236.80$
------------------------	-----------------------------------	---

(2) <u>Inspection</u>	No. of prod ⁿ runs (750+1050+1200)	$\left(\frac{894000}{3000} \right) = 298.00$
-----------------------	--	---

(3) <u>Dispatch</u>	No. of orders executed (180+270+300)	$\left(\frac{210000}{750} \right) = 280.00$
---------------------	---	--

(4) <u>M/I Setup</u>	No. of setups (360+390+450)	$\left(\frac{1200000}{1200} \right) = 1000.00$
----------------------	--------------------------------	---

Step(2) :- Statement showing cost driver rate p.u./p.p.

<u>Activity</u>	<u>Products</u>	$\text{Cost driver used} \times \text{Cost driver rate} \div \text{Prodn} = \text{C.D.R. p.u./p.p.}$
-----------------	-----------------	--

1) <u>Stores Rec.</u>		<u>No. of pur. req.</u>
	A	300 $\times$ 236.80 $\div$ 10000 = 7.10
	B	450 $\times$ 236.80 $\div$ 20000 = 5.33
	C	500 $\times$ 236.80 $\div$ 30000 = 3.95

Camlin	Page
Date	/ /

2) InspectionNo. of prod runs

A $750 \times 298 \div 10000 = 22.35$

B $1050 \times 298 \div 20000 = 15.65$

C $1200 \times 298 \div 30000 = 11.92$

3) Dispatch

A $180 \times 280 \div 10000 = 5.04$

B $270 \times 280 \div 20000 = 3.78$

C $300 \times 280 \div 30000 = 2.80$

4) M/c
Setup

A $360 \times 1000 \div 10000 = 36.00$

B $390 \times 1000 \div 20000 = 19.50$

C $450 \times 1000 \div 30000 = 15.00$

Step 3 :- Statement showing cost sheet as per ABCProductsABCUnits

10000

20000

30000

p.u.

p.u.

p.u.

Direct Cost

DM

50.00

40.00

40.00

DL

30.00

40.00

50.00

Prime cost

80.00

80.00

90.00

Indirect costF.O.

Activity (1)

7.10

5.33

3.95

(2)

22.35

15.65

11.92

(3)

5.04

3.78

2.80

(4)

36.00

19.50

15.00

Camlin	Page
Date	/ /

Factory lost

70.49

44.26

33.67

Q.59_sStatement showing Analysis of P/L (Loss) (D.P.P.)

Customer	A	B	C	D
Units	60000	80000	100000	70000
(A) Revenues	= 15000 (60000 × 0.25) units	18400 (80000 × 0.23) units	21000 (100000 × 0.21)	15400 (70000 × 0.22)
(B) Relevant cost				
(Cost driver X Cost driver) used rate				
1) Sales - visit	420 (2 × 210)	840 (4 × 210)	1260 (6 × 210)	630 (3 × 210)
2) Order placing	1800 (30 × 60)	1200 (20 × 60)	2400 (40 × 60)	1200 (20 × 60)
3) Product handling	6000 (60000 × 0.10)	8000 (80000 × 0.10)	10000 (100000 × 0.10)	7000 (70000 × 0.10)
4) Normal delivery cost	400 (10 × 20 × 2)	900 (15 × 30 × 2)	500 (25 × 10 × 2)	1400 (14 × 50 × 2)
5) Rushed delivery cost	-	-	5000 (25 × 200)	2800 (14 × 200)
Profit	6380	7460	6840	2370

Target costing

Camlin	Page
Date	/ /

* Meaning of target price

It is a price which is based on customer's expectation, but at the time of calculation for this price, we should satisfy 2 specific conditions:-

- 1) The quality of product should be same.
- 2) Savings should be of permanent nature.

Q.6

Present

$$\text{Sales } (30 \times 10000) = 300000$$

V.C

$$= 150000$$

DM

$$10000 \times 8 = 80000$$

DL

$$10000 \times 6 = 60000$$

V.O.

$$10000 \times 1 = 10000$$

Contⁿ

$$= 150000$$

F.C

$$140000$$

Profit

$$10000$$

Target

$$\text{Sales } (12000 \times 32) = 384000$$

V.C

$$(12000 \times \text{○})$$

$$= 190500$$

Contⁿ

$$= 193500$$

$$= 168500$$

$$25000$$

Camlin	Page
Date	/ /

$$V.C = 190500 \text{ (b.f.)}$$

$$\begin{array}{l} \text{Mat.} \\ \hline = 12000 \times 8 \\ \hline = 96000 \end{array}$$

$$\begin{array}{l} \text{Lab. \& OH} \\ \hline = 94500 \\ \hline \text{(b.f.)} \end{array}$$

let total lab. hrs be 'x'

$$\begin{array}{rcl} \text{lab. rate per hr} & 4.00 & \\ \text{V.O. per hr} & 0.50 & \\ \hline & 4.50x & \end{array}$$

$$4.5x = 94500$$

$$\therefore x = 21000 \text{ hrs}$$

$$\therefore \text{Target time} = \frac{21000 \text{ hrs}}{12000 \text{ units}} = \underline{\underline{1.75 \text{ hrs/unit}}}$$

Camlin	Page
Date	/ /

Q.10

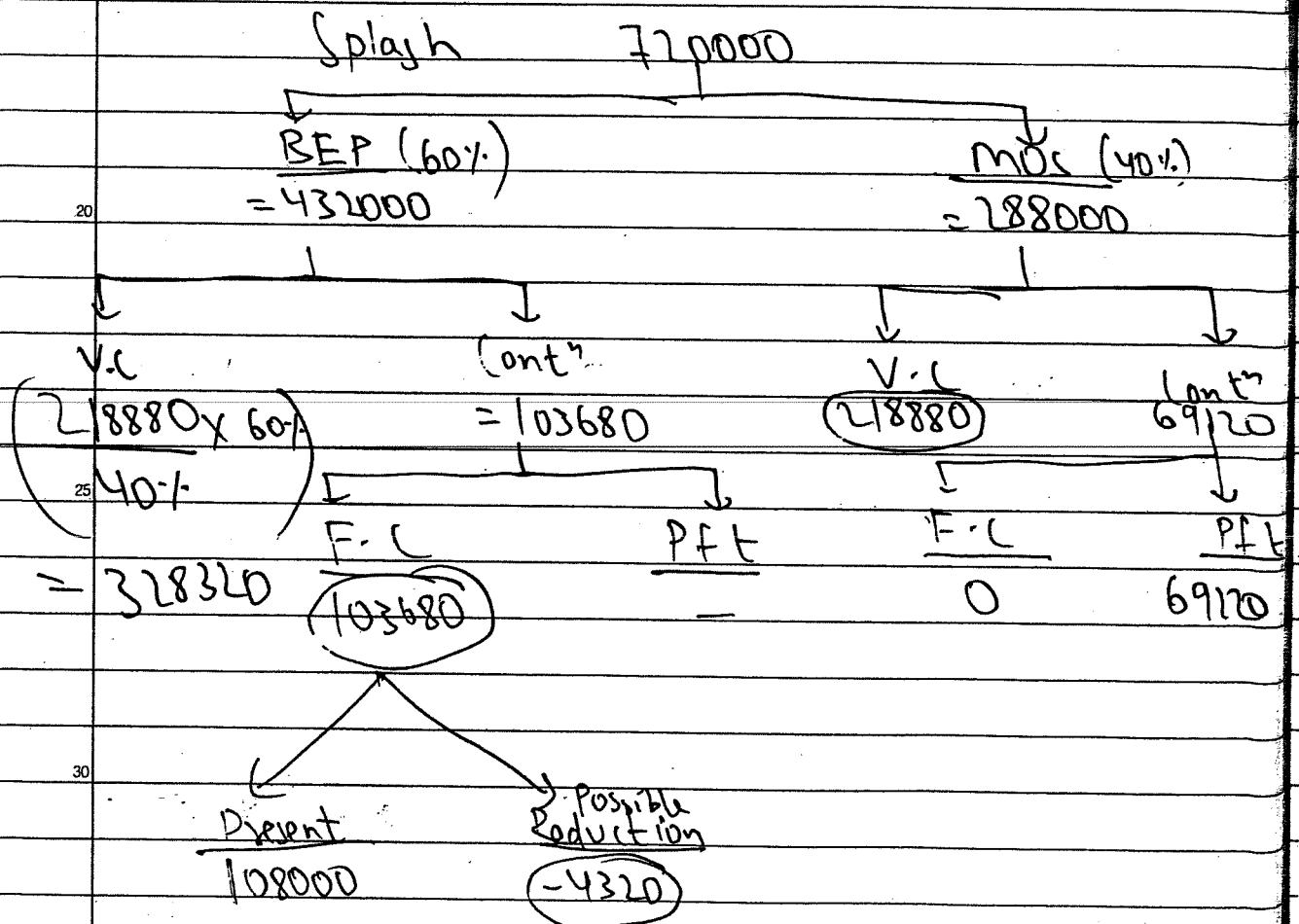
	<u>Splash</u>	<u>Flash</u>
S.P (p.u.)	3.00 (0.60)	4.00 (0.50)
Reduction	6.60 (3x22%)	0.50 (4x12.5%)
	<u>2.40</u>	<u>3.50</u>
Target Sales	720000	350000
Target units	720000 ÷ 2.40 = 300000	350000 ÷ 3.50 = 100000
B.E.P.	60%	60%
M.O.S.	40%	40%
Target profit	69120	17500
Present F-cost	<u>108000</u>	<u>27000</u>

Camlin	Page
Date	/ /

Statement showing (i) BEP Sales (ii) MOS Sales (iii) Total Sales

	<u>Splash</u>	<u>Flash</u>
B.E.P.	180000 (3000000 X 60%)	60000 (1000000 X 60%)
M.O.S.	120000 (3000000 X 40%)	40000 (1000000 X 40%)
Total	300000	100000

Statement showing possible redⁿ in Fixed cost



Camlin	Page
Date	/ /

Flash Sales: 350000

BEP (60%)

210000

MOS (40%)

140000

V-L

Cont'n

V-L

Cont'n

$$\frac{125000 \times 60}{40}$$

26250

122500

17500

= 183750

F-L

Pft

F-L

Pft

26250

-

-

17500

Present F-L

Red'n

27000

- 750

Cont'n

Pft

9120

Camlin	Page
Date	/ /

Applicⁿ of A.B.C. in Target Costing

Statement showing cost sheet as per A.B.C.

	PRESENT		REVISED	
	P ₁	P ₂	P ₁ -Rev.	P ₂ -Rev.
	P.u.	P.u.	P.u.	P.u.
Direct cost				
Dmat	407.50	292.10	381.20	263.10
Indirect cost				
($\frac{\text{Cost driver Used}}{\text{Cost driver Used}} \times \text{C.D.R.}$)				
1. Materials handling	102 (85 × 1.20)	55.20 (46 × 1.20)	85.20 (71 × 1.20)	46.80
2. Assembly Mgmt	128 (3.2 × 40) (85 × 1.20)	76	84	64
3. M/c Inertion	33.6 (48 × 0.70) (3.2 × 40)	21.7	41.30	20.30
4. Manual - II -	75.6 (2.10 × 36) (48 × 0.70)	65.1	25.20	21.00
5. Quality Testing	35 (1.4 × 25) (36 × 2.10)	27.5	30	22.5
Factory Cost	781.40	504	646.90	437.70

JIT

* Application of JIT in Target costing

Q.11

	Y Co. (Trad.)	X Co. (JIT)	Z Co. (JIT)
Purchase price	140.00	140.02	136.00
Annual demand	13000 nos	13000	13000
ROI	@ 15%	@ 15%	@ 15%
Ordering cost per order	₹ 2 per order	₹ 2 / order	₹ 2 / order
Storage cost	₹ 3.10 p.u./p.a.	₹ 3.10 p.u./p.a.	₹ 3.00 p.u./p.a.
Order size	1000	100	100
Stockout	-	50x4	360x8
Added cost of inspection	-	-	13000 x 20%
Customer return	-	-	13000 x 2% x 25%

Camlin	Page
Date	/ /

Statement showing Analysis of proposal

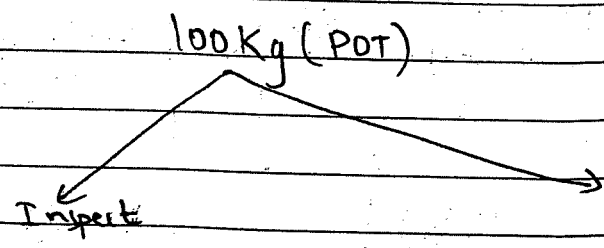
	Y Co. (Trad.)	Y Co. (JIT)	Z Co. (JIT)
Pur. cost	1820000 (13000 X 140)	1820260 (13000 X 140.02)	1768000 (13000 X 136)
ROT	10500 $\left(\frac{1}{2} \times 1000 \times 140 \times 15\%\right)$	1050 $\left(\frac{1}{2} \times 1000 \times 140.02 \times 15\%\right)$	1020 $\left(\frac{1}{2} \times 1000 \times 136 \times 15\%\right)$
Ordering cost	26 $\left(\frac{13000 \times 2}{1000}\right)$	260 $\left(\frac{13000 \times 2}{100}\right)$	260 $\left(\frac{13000 \times 2}{100}\right)$
Storage cost	1550 $\left(\frac{1}{2} \times 1000 \times 3.10\right)$	155 $\left(\frac{1}{2} \times 1000 \times 3.10\right)$	150 $\left(\frac{1}{2} \times 1000 \times 3\right)$
Stockout cost	-	200	1880
Cost return cost	-	-	6500
Add'l inspec'n cost	-	-	6500
	1832076	1821925	1779460

Camlin	Page
Date	/ /

1.1. TPM

* Application of TPM in Target Costing

Concept of ^{Inspection} High quality material v/c. No inspection



Camlin	Page
Date	/ /

Q.1

Step no. (1) : Statement showing good units

	X Ltd.		Y Ltd.	
	With inspect ⁿ	Without inspect ⁿ	With inspect ⁿ	W/o inspect ⁿ
Purchases	10000	10000	10000	10000
Loss @ time of inspect ⁿ	(270)	-	(450)	-
	$\left\{ \frac{10000 \times 3 \times 90}{100 \times 100} \right\}$		$\left\{ \frac{10000 \times 5 \times 90}{100 \times 100} \right\}$	
Qty. for pymt	9730	10000	9550	10000
Loss @ time of pur.	(30)	(300)	(50)	(500)
	$\left(\frac{10000 \times 3 \times 90}{100 \times 100} \right)$	$(10000 \times 3\%)$	$(10000 \times 5\% \times 100\%)$	$(10000 \times 5\%)$
Good units	9700	9700	9500	9500

Step no. (2) Stat. showing total cost / cost for good units

	X Ltd.		Y Ltd.	
	With insp.	W/o insp.	With insp.	W/o insp.
Pur. cost	17514	18000	16617	17400
	$\left(\frac{9730 \times 180}{100} \right)$	$\left(\frac{10000 \times 180}{100} \right)$	$\left(\frac{9550 \times 174}{100} \right)$	$\left(\frac{10000 \times 174}{100} \right)$
Inspect ⁿ cost	2400	-	2400	-
	$(10000 \times 2.4\%)$		$\left(\frac{10000 \times 240}{100} \right)$	
Loss of prod ⁿ cost	54	540	90	900
	$\left(\frac{30 \times 180}{100} \right)$	$\left(\frac{300 \times 180}{100} \right)$	$\left(\frac{50 \times 180}{100} \right)$	$\left(\frac{500 \times 180}{100} \right)$
T. cost	19968	18540	19107	18300

÷ Good units 9700 9700 9500 9500

* High quality material v/s low quality material

Q.2

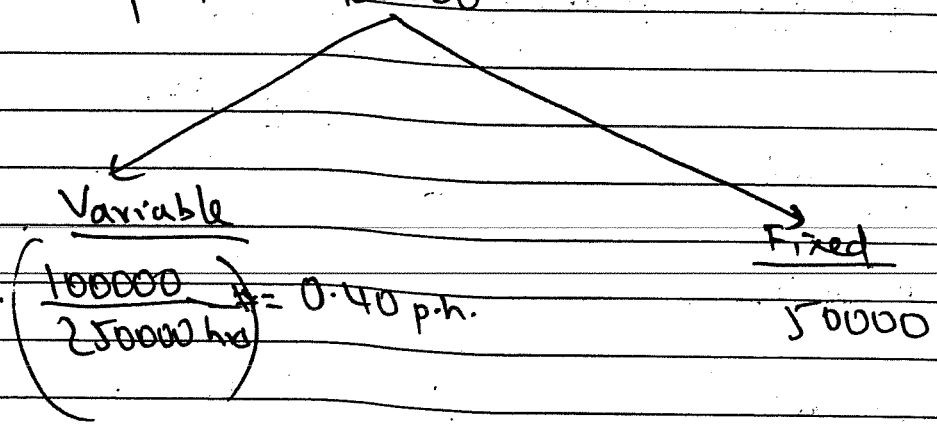
Note 1 :- Given

Dept 'D'

Normal capacity = 100000 units

lab. hrs reqd. = $\left(\frac{250000}{100000} \right) = 2.50 \text{ hrs p.u. @ } 0.50 \text{ p.u.}$

Factory OH = 150000



Material

Input

Output

High Qlty @ 1.05

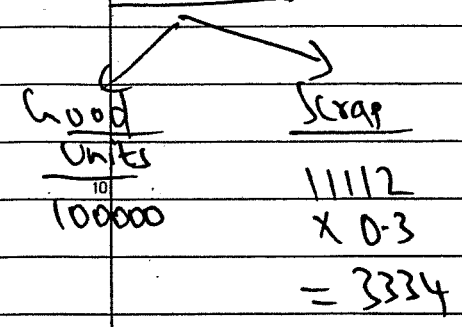
Low qlty @ 0.80

Output	Def.	Good units
100	10	90

$$\left(\frac{100000 \times 100}{90}\right)$$

$$= 111111.111$$

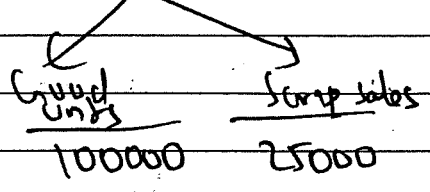
$$111112$$



Output	Loss	Good units
100	20	80

$$\left(\frac{100000 \times 100}{80}\right)$$

$$= 125000$$



Machine = 3000

Add Lab. hrs = $100000 \times \frac{1}{2}$
= 50000 hrs

Stat. showing Analysis of proposal

	High qty	Low qty
Gross prod ⁿ	111111	125000
Scrap units	11112	25000
Good units	100000	100000

(i) Mat. cost	$(111112 \times 5 \times 1.05)$ = 583338	$(125000 \times 5 \times 0.80)$ = 500000
---------------	---	---

(2) Lab. cost	138890 $(111112 \times 5 \times 0.5)$	156250 $(125000 \times 2.5 \times 0.5)$
---------------	--	--

Camlin	Page
Date	/ /

mk	add'l lab cost	-	25000 (50000 X 0.5) = 95000
000	(3) Variable OH	111112 (111.112 X 2.5 X 0.4)	125000 (125000 X 2.5 X 0.4)
	(4) Add'l var		20000 (50000 X 0.4)
10	(4) Add'l M. cost	-	3000
	(5) F. cost	-	-
15	(6) Scrap sales	(3334) 830006	(5000) 825000
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
80			
85			
90			
95			
100			

Camlin	Page
Date	/ /

Q.3)
P.M.

(a)

(i) Stat. showing Total prodⁿ units

Before Q.M.P			After Q.M.P		
Units delivered to customer	Returned by customer	Gross good units	Units deliv. to customer	Return by Cust.	Gross units (good)
5000	250 (5% of 5000)	5250	5000	125 (2.5% of 5000)	5125
Gross prod ⁿ	Loss due to down grade	Good units	Good prod ⁿ	Loss due to down grade	Good units
100	12.5 (12.5% of 100)	87.5	100	7.5% of 100 = 7.5	92.5
<u>6000</u> (5250 × 100 / 87.5)		5250	<u>5040.54</u> (5125 × 100 / 92.5)		5125
Downgraded units = (6000 - 5250)			(5541 - 5125) = 416 sold @ Units 30% disc.		
= 750 ^{sold} Units @ Disc. of 30%.					

(ii) Stat. showing pur of materials (sq. metres)

Input	Loss due to process	Input for product	Input	Loss due to process	Input for product
100	4	96	100	2.5	97.5
50000 sq.m.		6000 Units × 8 = 48000 sq.m.	45464.62		(5541 × 8) 48000 sq.m. = 44328

Camlin	Page
Date	/ /

Gross purchase	Loss due to supplier	Input	Gross pur.	Loss due to supplier	Input for product
100	5	95	100	3	97

52631.58

50000 sq.m

46870.74

45464.6

↓
i.e. 52632 Units

↓
46871 sq.m

(iii) Stat. showing gross m/c hrs

Gross units

Before P.M.P

After P.M.P.

Gross m/c hrs	Loss due to idle time	Net hrs for Product	Gross m/c hrs	Loss due to idle time	Net hrs for product
100	20	80	100	12.5	87.5

@ 1% disc.	4500 hrs (3600 x 100 / 80)	6000 x 0.6 = 3600	3166.29 ↓ 3167	2770.5 (541 x 0.6)
------------	-------------------------------	-------------------	----------------------	-----------------------

Input for product	77.5
541 x 0.6	324.6
8000	
Sq.m	
44328	

Stat. showing Analysis of Pt/(loss)

	Before P.M.P.	After P.M.P.
(A) Sales	5000000 (5000 X 1000) units	5000000 (5000 X 1000) units
(B) Downgrade sales	6525000 (750 X 1000 X 70%) units	691200 (416 X 1000 X 70%) units
(B) <u>Relevant cost</u>		
(1) Material cost	(2103280) (52632 X 40)	(1874840) (46871 X 40)
(2) Inspection cost	(52632) (52632 X 1)	(46871) (46871 X 1)
(3) Other checks cost	(250000)	(150000)
(4) Product ^{liab.} cost	(150000) (500000 X 3%)	(50000) (500000 X 1%)
(5) Machine Idle time cost	(1800000) (4500 X 400)	(266800) (3167 X 400)
(6) Admin	(600000)	(540000)
(7) Pre Pt/(loss)	(200000) 36.7088	(600000) 762.689

Camlin	Page
Date	/ /

Lifecycle costing

Meaning of lifecycle costing

It is a modern method for planning of capital assets with the object of minimising the cost & maximizing the profit.

Steps for solving the sum

Step I:- Check whether lifecycle cost concept is applicable or not.

Step II:- Check status of a person-existing or new.

Step III:- Statement showing inflow or outflow per year during the life of an asset.

Step IV:- Final decision

Example 1

Statement of a person (Existing)

	<u>P.B.T</u>	<u>Tax @ 30%</u>	<u>PAT</u>	
(1)	1000000			# righty profitable

C.D. Business (New)

<u>Year</u>	<u>P.B.T</u>	<u>Tax @ 30%</u>	<u>PAT</u>
(1)	(500000)	150000	(350000)
(2)	1000000	(300000)	700000

Camlin	Page
Date	/ /

Example 2

New

Q.9 Step I :- Yes, the life cycle cost concept is applicable.

Step II :- Existing person (Replacement cost)

Step III :- Statement showing inflow/outflow per year during life

Present value of outflow per year (capital exp.)

<u>Years</u>		<u>DF @ 12%</u>	<u>P.V</u>
0	Capital expd. (3500000)	$\times 1$	$= (3500000)$
10	Scrap value 900000	$\times 1$	$= 900000$
			<u>(2600000)</u>

Present value of inflow

<u>Yr</u>	<u>Payable before tax</u>	<u>Maint. cost</u>	<u>Depⁿ</u>	<u>Net S.B. Tax</u>	<u>Tax (50%)</u>	<u>(A. tax + Depⁿ)</u>	<u>DF</u>	<u>P.V</u>
1	200000	(70000)	(350000)	(300000)	150000	200000	0.89	178000
2	200000	(70000)		250000	(250000)	250000	0.80	200000
3	200000	(70000)		50000	(250000)	250000	0.71	177500
4	200000	(70000)		50000	(250000)	250000	0.64	160000
5	200000	(70000)		50000	(250000)	250000	0.57	142500
6	200000	(70000)		50000	(250000)	250000	0.51	127500
						100000	0.51	51000
						Scrap (Tax free)		

Camlin	Page
Date	/ /

N.P.V
 $(2638500 \div 2600000)$ 38500
 $\div (0.89 + 0.80 + 0.71 + 0.64 + 0.57 + 0.51)$ 4.12
Inflow per year 9345

Q-8

Step 1 :- Yes : Life cycle cost concept is applicable

Step 2 :- Existing person (bought from outside)

Step 3 :- Statement showing Inflow/outflow per year during life

Present value of outflow per year (capital exp.)

Year		DF@10%	P.V
0	Capital exp. (750000)	1	(750000)
0	Working cap. (50000)	1	(50000)
			(800000)

Present value of inflow

	Year	P.B.T	Tax@50%	P.B.T + Dep ⁿ = Inflow	DF	P.V
71	1-10	180000	(90000)	90000 + 70000 = 160000	6.14	982400
64	10			WCap 50000 x .39		19500
57	10			Scrap 50000 x .39		19500
51						1021400

Camlin	Page
Date	/ /

Note

Cost of Asset = 750000

Depⁿ 700000

(700000 x 10)

WDV 50000

Sale value 50000

Gain -

N.P.V
(1021400 - 800000) 221400

÷ C.D.F. 6.14

Inflow per yr 36049

Camlin	Page
Date	/ /

Budget & Budgetary Ctrl

* Meaning of Budget

It is a statement which is showing future estimates.

* Types of Budgets

1. Sales Budget

2. Prodⁿ Budget

3. Consumpⁿ / Usage Budget

4. Purchase Budget

5. Labour / Wages Budget

6. Expense Budget

7. Flexible Budget

8. Any other budget as per Mgmt req^t

PURCHASE BUDGET



Purchase Cost



$(\text{Pur. Qty} \times \text{Rate})$



$\text{Consump}^n + (\text{Op}^n \text{ Stock} - \text{Cl}^n \text{ Stock})$



$\text{Prod}^n \times \text{Raw mat. reqd}$



$\{ \text{Sales} + (\text{Cl}^n \text{ Stock} - \text{Op}^n \text{ Stock}) \}$

Camlin	Page
Date	/ /

Q.45Note no. (i) Production Budget

	<u>Units</u>
(i) Sales	
(30000 + 37500 + 41250 + 45000)	153750
+ Clon Stock	16250
- Op ⁿ Stock	(10000)
<u>Production</u> (units)	<u>160000</u>

Ans no. (i) Stat. showing production budget

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Total</u>
Production (80% current qtr)	24000 (30000 × 80%)	30000 (37500 × 80%)	33000 (41250 × 80%)	36000 (45000 × 80%)	123000
Production (20% next qtr)	7500 (37500 × 20%)	8250 (41250 × 20%)	9000 (45000 × 20%)	12250 (45000 × 20%)	37000
<u>Prodⁿ Budget</u>	<u>31500</u>	<u>38250</u>	<u>42000</u>		<u>160000</u>

Ans (ii) RM consumeⁿ budget (in qty)

<u>Qtr</u>	<u>Prodⁿ</u>	<u>× RM pu.</u>	<u>= consumeⁿ (kg)</u>
I	31500	× 2 kg	= 63000
II	38250	× 2 kg	= 76500
III	42000	× 2 kg	= 84000
IV	48250	× 2 kg	= 96500
	<u>160000</u>		<u>320000</u>

Statement showing RM purchase budget

15

for Ans (iv)

Stat. showing Stores ledger (FIFO)

30

* Meaning of Flexible Budget

It is a statement which is showing different cost @ different volumes.

Q.44

Statement showing Flexible Budget

Capacity Hrs	70%	80%	90%	100%
	7000	8000	9000	10000
(1) V. exp.	= 1260	= 1440	= 1620	= 1800
		$\left(\frac{1260 \times 8000}{7000}\right)$	$\left(\frac{1260 \times 9000}{7000}\right)$	$\left(\frac{1260 \times 10000}{7000}\right)$
(2) S. V. exp.	= 1200	= 1320 ¹²⁰⁰	1320	1440
		$(1200 \times 110\%)$	$(1200 \times 110\%)$	$(1200 \times 120\%)$
(3) F. exp.	1800	1800	1800	1800
T. cost	4260	4440	4740	5040
	$\div 7000 \text{ hrs}$	$\div 8000 \text{ hrs}$	$\div 9000 \text{ hrs}$	$\div 10000 \text{ hrs}$
Cost/hr	0.61	0.555	0.527	0.504

Camlin	Page
Date	/ /

Q.46

Performance EvalⁿStatement showing Flexible Budget

Particulars	Nature of exp.	Bud. cost for 6000 units	Actual cost for 6000 units	Variation
(1) Salary of Foreman	Fixed	1000	1000	-
(2) Indirect labour	Var.	540 $(\frac{720}{8000} \times 6000)$	600	(60)
(3) Indirect Material	Var.	600 $(\frac{800}{8000} \times 6000)$	700	(100)
(4) Rep. & Maint.	S.V (note 1)	550	600	(50)
(5) Power	S.V (note 2)	725	740	(15)
(6) Tools & Consumables	Var.	240 $(\frac{320}{8000} \times 6000)$	300	(60)
(7) Rates & Tax	Fixed	150	150	-
(8) Dep ⁿ	Fixed	800	800	-
(9) Insurance	Fixed	100	100	-

Ques no. (i) Rep. & Maint. (V.V. cost)

$$V.C. p.u. = x \quad F.C = y$$

$$8000x + y = 600$$

$$10000x + y = 650$$

$$\begin{array}{r} (1) \quad (2) \quad (1) \\ \hline 2000x = 50 \end{array}$$

$$x = 0.025$$

$$- y = (8000 \times 0.025) - 600$$

$$\therefore y = 400$$

Ques no. (2)

Total cost

$$V.C. p.u. = \frac{\Delta \text{ cost}}{\Delta \text{ prod}^n}$$

$$= \frac{875 - 800}{10000 - 8000}$$

$$\frac{400 - 320}{10000 - 8000}$$

$$= 0.0375$$

$$V.C. (0.0375 \times 6000)$$

$$F.C$$

$$225$$

$$500$$

$$725$$

Camlin	Page
Date	/ /

Comments

The above performance evalⁿ clearly shows that Co. is making a loss of ₹285. So workers are not entitled to get any bonus.

Camlin	Page
Date	/ /

Ch.7 Service Sector Costing

IPCC → Operating Costing

Transportⁿ

Hotel

Hospital

Others

Service tax
applies

- In this topic, our objective is not to find out what is the cost of service, but our objective is to find out what is the normal cost of service.

- It means whenever there is a loss because of our own mistake, that loss we cannot recover from the customer or if you are going to recover, we cannot survive because our cost of service will increase.

* Steps for solving the sum

Step I:- Statement showing objective function.

Step II₂₅:- Statement showing normal operating cost / income

Step III:- Final Answer.

Camlin	Page
Date	/ /

Q.56

Given :-X Oil Co.Y Oil Co.

Distance

24 kms

16 kms

Capacity

8 tons

8 tons

Onward trip

Full

Full

Return

Empty

Empty

Filling time

40 mins

30 mins

Empty Time

40 mins

40 mins

Speed

60 mins

24 kms

60 mins

16 kms

V/L

0.80 per km

0.80 per km

F/L

7.50 (p.h.)

7.50 (p.h.)

Step no (1)Statement showing Total kms / Total tonne / Total time reqd

kms

X Oil Co. $24 \times 2 = 48$ Y Oil Co. $16 \times 2 = 32$

Tonne kms

 $(48 \div 2) \times 8$ $= 192$ $(32 \div 2) \times 8$ $= 128$ $(24 \times 8) + (24 \times 0)$ $= 192$ $(16 \times 8) + (16 \times 0)$ $= 128$

Camlin	Page
Date	/ /

Total time reqd.

Filling time	40 mins	30 mins
Empty time	40 mins	40 mins
Running time	120 mins	80 mins

$$\left(\frac{60 \text{ min} \times 48}{24 \text{ km}} \right)$$

$$\left(\frac{60 \text{ min} \times 32}{24} \right)$$

150

Step no. (2)

Stat. showing Total cost / per tonne kms

	X Oil Co.	Y Oil Co.
V. Cost	38.40 (48 × 0.80)	25.60 (32 × 0.80)
F. Cost	25.00 (200 min × 7.50) 60	18.75 (150 × 7.50) 60
Total Cost	63.40	44.35
Tonne kms	÷ 192	÷ 128
Cost per tonne km	0.33	0.35

Camlin	Page
Date	/ /

Q.58

(P.M.)

Statement showing Analysis of proposal

	Purchase & maintain own Car	Reimbursement of exp.	Hire-car
	20000 kms	20000 kms	20000 kms
(1) Cost of petrol	12000	-	12000
(2) Dep ⁿ	16000 $(\frac{100000 - 20000}{5})$	32000 (20000×1.6)	-
(3) Reimb-exp	-	-	20000
(4) Hire car	-	-	20000
(5) Rep. & maint	4000 (20000×0.2)	-	-
(6) Tyres	2400 (20000×0.12)	-	2400
(7) Insurance	1200	1200	-
(8) Taxes	800	-	800
	36400 III	33200 I	35200 II

Camlin	Page
Date	/ /

Q.57

$$\text{Rent} = 100 + 8\% = \underline{108} \rightarrow \text{Bill Amount}$$

$$\text{Building Rent} = 5$$

$$\text{Cost} = 75$$

$$\text{Profit} = \frac{20}{25}$$

Step no. (1) Statement showing no. of occupied
Room days / Rent

Rent per day / Per room (x) (Gen. ward)

$$\text{Gen. ward} = (100 \times 100\% \times 360) = 36000 \times$$

$$\text{Cottage ward} = (50 \times 80\% \times 360) = 14400 \times 2.5 \times$$

$$\text{Deluxe ward} = (30 \times 60\% \times 360) = 6480 \times 5 \times$$

$$\text{Gen. Ward } (12000 \div 20)$$

$$104400 \times$$

$$600 \times$$

$$105000 \times$$

Step no. (2) Statement showing Total takings for the year

$$(1) \text{ Rent } (10000 \times 12)$$

$$120000$$

$$(2) \text{ Hire charges}$$

$$12000$$

Camlin	Page
Date	/ /

(3) Dr's fees (15000 x 3) 45000

(4) Salary of Doctors 1350000

(5) Rep & Maint. 90000

(6) Laundry chgs. 80500

(7) Food supplies 40000

(8) Medicine supplies 74000

(9) Cost of Oxygen, X-ray etc. 49500

(10) Gen. Admin. 63000

(11) Salary of Supervisors, Nurses, Ward boys 425000
~~90000~~

Total Cost 2349000

Rent 5% of 3132000 156600

Profit 20% of 3132000 626400

3132000

(2349000 + 156600 + 626400)
+ 5%

$$x = \left(\frac{3132000}{105000} \right)$$

$$= \boxed{29.83}$$

Camlin	Page
Date	/ /

Stat. showing Bill Amt

	<u>Cashward</u>	<u>Cottage</u>	<u>Deluxe</u>
Takings	29.83	74.575 (29.83 x 2.5)	149.15 (29.83 x 5)
S.T @ 8%	2.38	5.966	11.93
Bill Amt	<u>32.21</u>	<u>80.541</u>	<u>161.08</u>

Camlin	Page
Date	/ /

Chapter 2 : Cost concepts in D-M



Relevant cost

Meaning of Relevant cost

- Any expense which is fluctuating according to decision is known as relevant cost.

Example

- Fixed cost is not relevant for the decision if it is constant.
- Variable cost is not relevant for the decision if it is constant under all the options.
- Any expenses incurred in past before taking the decision is known as sunk cost & that's why it is fully irrelevant for the decision (e.g. In case of material, book value or historical cost is totally irrelevant. The relevant cost is

→ If material is in regular use
Replacement cost

→ If no use : then Realisable value

- If in the question the language is used like Applied, Allocated, Absorbed, charged or charged, then totally irrelevant.

Imp. pt

The above concept of relevant costing is only applicable if we are in existing business & not in a new business.

* Meaning of opportunity cost

Any loss if we are incurring by taking a particular decision is known as opportunity cost & that's why it is fully relevant for the decision.

Q.18

Statement showing minimum price (As per relevant cost)

Particulars	₹	Reasons
(1) Materials	80	Non-moving item
(2) Allocated OH	-	Sunk cost Irrelevant
(3) Out of pocket exp.	30	Future outflow
(4) Labour	-	Fixed
	110	

Q.21

Statement showing Analysis of Proposal

Particulars	P	Q
S.P (future inflow)	200	216
<u>Relevant cost</u>		
1) Petrol & Oil (future O/F)	(10)	(20)
2) Wages	fixed	fixed
3) Share of licence, Ins., Depn	same 190	same 192

Camlin	Page
Date	/ /

Q.20Statement showing analysis of profit/loss

<u>Particulars</u>		<u>₹</u>	<u>Reasons</u>
(A)	Revenues	2000000 (20000x100)	Future inflow
(B)	<u>Relevant cost</u>		
(1)	Material 'A'	(400000) (20000x2x10)	Regular - Replacement Use cost
(2)	Material 'B'	(500000) (20000x1x25)	No - Realisable Use value
(3)	Labour Grade 1	—	Fixed - Sunk cost (under utilised currently)
(4)	Labour - Grade 2	(240000) (20000x6hrs x 2)	Variable - Future outflow
(5)	V.O. Grade	(480000)	Future outflow
	A (20000x2hrs) = 40000		
	B (20000x6hrs) = 120000 (160000x3)		
(6)	Fixed O H	—	Sunk cost
(7)	Increase in Fixed OH	(280000)	Future outflow
(8)	Saving in F.O.	58000	Opp-gain

Camlin	Page
Date	/ /

(8) Product 'Y'

(190000)

(Opp. cost)

P+I/Ins

20000

5

Note no. (i) Sales product Y

Sales (5000x70)

₹
350000

10

Relevant cost

Mat. (5000x12)

60000

Lab. (5000x4x2)

40000

V.O. (5000x4x3)

60000

(160000)Profit →190000

15

20

25

30

Camlin	Page
Date	/ /

Q.19Note no. (i) Given - Tip Top Textile - 'Superb'Mkt Res. lost $\rightarrow$ Sunk cost (x)Exp. sales (future inflow) = 900000
(50000 X 18)Relevant costPush

$$= 50000 \times 1 \times 2.50$$

$$= 125000$$

Flash

$$= (50000 \times 2)$$

$$= 100000$$

Splash

$$= 50000 \times 0.5$$

$$= 25000 \times 5.50$$

$$= 137500$$

(Regular use - Replacement cost)

No useReusable Valve

$$= 60000 \times 1.1$$

$$= \underline{66000}$$

No stock

Replacement cost

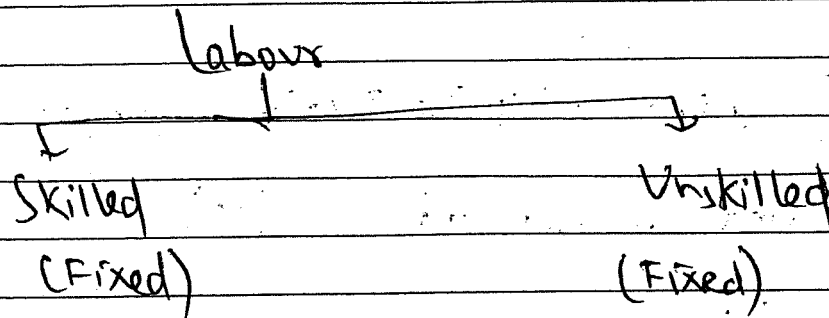
$$40000 \times 2.80$$

$$= \underline{112000}$$

No stock - Replacement cost

$$\{66000 + 112000\} = 178000$$

Camlin	Page
Date	/ /



$$(50000 \text{ units} \times \frac{1}{4} \text{ hrs})$$

$$(50000 \text{ units} \times 2 \text{ hrs})$$

$$= 12500 \text{ hrs}$$

$$= 100000 \text{ hrs}$$

$$\text{Cost} = 0 \text{ (fixed)}$$

$$\text{Cost} = 0 \text{ (fixed)}$$

↓

Opportunity cost

S.P. (p.h.)

10.00

Lab.

fixed

Other V. cost

(5.50)

4.50

$$4.50 \times 12500$$

$$= 56250$$

Foreman Salary

$$= (15000 - 6000)$$

$$= 9000$$

M/c

MT-4 Regular use $(80000 - 65000) = 15000$

MT-7 No use $(11000 - 8000) = 3000$

F.O. $\Rightarrow$ sunk cost

V.O. $(50000 \times 1.2) = 60000$

Camlin	Page
Date	/ /

Statement showing Analysis of Pt / (Loss)

	₹	Reason
(A) Sales	900000	(Note no. 1)
(B) Relevant cost		
(1) Raw Materials		
Push	(125000)	- " -
Flash	(128000)	- " -
Splash	(137500)	- " -
(2) Labour		
Skilled	-	- " -
Skilled	(56250)	-
Unskilled	-	- " -
(3) Foreman's Salary	(9000)	- " -
(4) M/C - MT-4	(15000)	- " -
MT-7	(3000)	- " -
(5) F.O.	-	- " -
(6) V.O.	(60000)	
(1)	<u>316250</u>	

Camlin	Page
Date	/ /

Q.22

Statement showing min. cost (as per Relevant cost)

Particulars	₹	Reasons
(1) Costs to be incurred	29200	Future outflow
(2) Direct Materials	2250	Opportunity cost
(3) <u>Direct Wages</u>		
'A'	1800 (15 × 120)	Future O/F
'B'	2500 (25 × 100)	— II —
'B'	8000 (2500 × 3.2)	Opp. cost
(4) V.O.	1075 25% (1800 + 2500)	Future O/F
(5) Delivery costs	1350	— II —
(6) Supervisory Overtime	1050	— II —
(7) Control device	(10300)	Opportunity gain (Note 1)
(8) If convention is not carried out	24600	Opportunity loss (Note 2)
Min. price	<u>61975</u>	

Note no. (i) Control / Device / Savings / Opp: gain

Cost of Device	10500
----------------	-------

Relevant cost (1x120) (120)

Dept A'

V.O. (30)

(30)

10.350

Note no. (2) If contention is not carried out

$$\text{Mat.} = 12000$$

Dep 'A' Lab. (240)

$(2 \times 120) \quad V=0, \quad (60)$

11700

~~11760~~

Sixap

11400

Drawings

1500

24660

$$\frac{dx}{dt}$$

30

Camlin	Page
Date	/ /

Ch. 4 Pricing Decision & T/F Pricing

* Meaning of Transfer price

It is an internal price between 1 division to others on the basis of mutual understanding. But this concept is only applicable if divisions are individual, independent, separate profit centers, separate cost centers or decentralized.

* Methods for T/F Price

- ① Total cost + Opportunity cost
- ② Total cost + ROI
- ③ Total cost + ROI (with tax adjustment)
- ④ Relevant cost concept basis
- ⑤ Market value
- ⑥ Total cost + Profit share
- ⑦ Variable cost + Contribution
- ⑧ Standard cost basis
- ⑨ Bargain price basis
- ⑩ Any other method as per mutual understanding

Camlin	Page
Date	/ /

Method I :- If TP = Total cost + Opportunity cost

Application of limiting factor in T/E Price

* Steps for solving the sum

Step I :- Statement showing Contⁿ p.u. / p.h. / RFP

Step II :- Statement showing Prodⁿ plan

Step III :- Stat. showing Analysis of Pt / (loss)

(Q.34)
p.m)

Step I :- Statement showing C.P.U. / C.P.H. / RFP

	P	Q	R	S
S.P (p.u.)	350	345	280	230
V.C. (p.u.)	(330)	(310)	(180)	(185)
Cont ⁿ p.u.	20	35	100	45
Hrs (p.u.)	3	4	2	3
Cont ⁿ p.h.	6.67	8.75	50	15

Rank

IV

III

I

II

Ans (i)

Step (2) Statement showing prodⁿ plan

Hours Available	Products	Units X Hrs = Total P.u.	Bal. hrs
24000	R	2800 X 2 = 5600	18400
	S	1800 X 3 = 5400	13000
	Q	3250 3500 X 4 = 14000	-

Step (3) Statement showing Transfer price (p.u.) of 'S'

Total Hrs reqd. for 'S' = 6000 hrs
(2000 X 3)

Cut down production of Q & save hrs

~~(1500 X 4)~~

Opportunity cost on Q
(1500 X 35)

52500

+ Mfg. cost of 'S'
(2000 X 185)

370000

÷ Units of 'S'
T.P (p.u.)

422500

2000

211.25

Camlin	Page
Date	/ /

Ans (ii)Step 1 :- Stat. showing prodⁿ plan for Max. pft

<u>Hrs Available</u>	<u>Products</u>	<u>Units X Hrs p.u. = Total</u>	<u>Bal. hrs</u>
32000	R	2800 X 2 = 5600	26400
	S	1800 X 3 = 5400	21000
	Q	3500 X 4 = 14000	7000 +8000
	P	(2333.33 X 3 = 7000)	—

Step 3 :- Stat. showing T.P. (p.u.) of 'S'

Total hrs reqd. for 'S' 6000 hrs
(2000 X 3)

Cut down prodⁿ of 'P' & save hrs 6000 hrs
(2000 X 3)

Opportunity cost of P

(Contⁿ lost on 'P' (2000 X 20) ₹ 40000

+ Mfg. cost of 'S' (2000 X 185) 370000

÷ Units of 'S'

T.P. (p.u.)

410000
2000
205000.00

Method II : - Total Cost + ROI

Q.36

Stat. showing T.P = Total Cost + ROI

Variable Cost (400000 x 10)	4000000
Fixed cost	800000
Total cost	4800000

+ ROI

$(500000 + 300000 + 200000) \times \frac{28}{100}$	280000
--	--------

T/F value	5080000
$\div$ No. of units	400000
T.P (p.u.)	₹ 12.70 p.u.

Method III : - Total Cost + ROI (with tax adjustment)

Q.38

(a) T. cost

Mat.	50000	
Other V.C	60000	
Fix	40000	150000

+ ROI

$(150000 \times \frac{20}{60})$	50000
---------------------------------	-------

T/F value	200000
$\div$ Annual prod ⁿ (units)	20000
External Transfer price $\rightarrow$	10.00

Camlin	Page
Date	/ /

(6)

Statement showing S-P (p.u.)

$$\text{List price} = 100 \left(\frac{7.5}{50} \times 100 \right) = \underline{\underline{15.00}}$$

Discount
40

Cost
= 50 (b. fig)

$$\text{Profit} \left(100 \times \frac{6}{100} \times \frac{100}{60} \right) = \underline{\underline{10}} \quad (150000 \div 20000)$$

50

Venture

C.P

(-) Disc. (40%)

Net

(-) Cost

P.B.T

Tax @ 40%

RAT

15

(6)

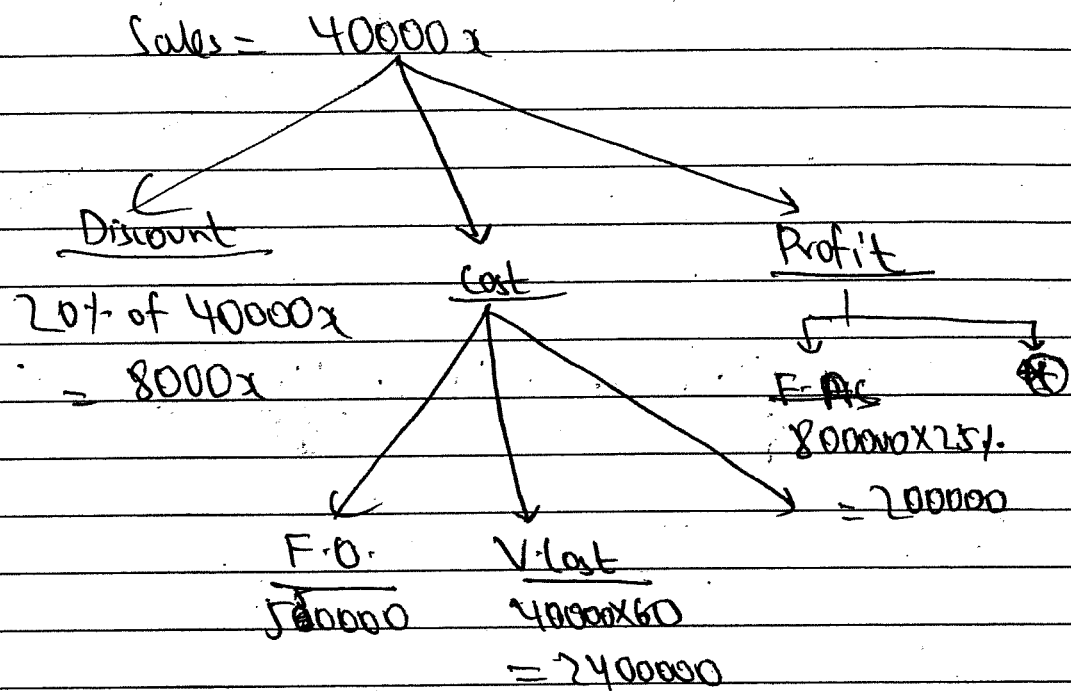
9

(7.5)

1.5

(0.6)

0.90

Q.37Statement showing value of 'x'Current Assets

$$(40000 - 8000)$$

$$= 32000x \times 50\% \times 25\%$$

$$= 4000x$$

$$40000x = 8000x + 500000 + 2400000 + 200000 + 4000x$$

$$\therefore 28000x = 3100000$$

$$28000x = 990000$$

Camlin	Page
Date	/ /

$$x = \frac{112.5}{35.3571}$$

Verificⁿ

Sales (40000 x 112.5)	₹ 4500000
(-) Discount (20%)	(900000)
Net Sales	3600000
(-) Cost - Variable	(2400000)
Fixed	(50000)
P.B. Tax	650000

Fixed Cap. $\rightarrow$ 800000
Working Cap. $\Rightarrow$ 1800000 (36 Lacs x 50%)
 $2600000 \times 25\% = \underline{650000}$

Q.35

AB Cycles Ltd.

Div-A
(Frame)

Div-B

Input Output
Frame Final product

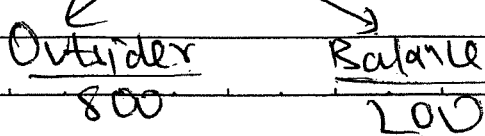
S.P	2000
V.P.	1200

Costs $\downarrow$ 800

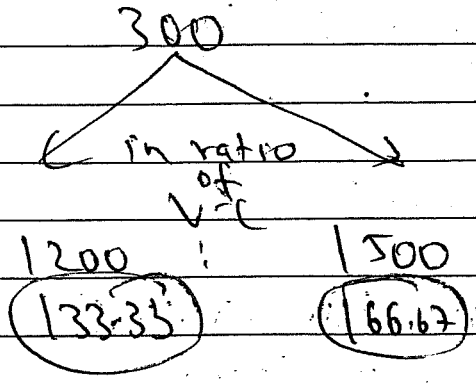
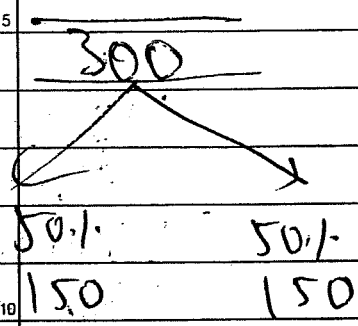
$S.P(p.u.) = 3000$

$V.P(p.u.) = 1500$

Capacity = 1000 nos



S.P (EP) 3000
(1200) DVA
(1500) DVB



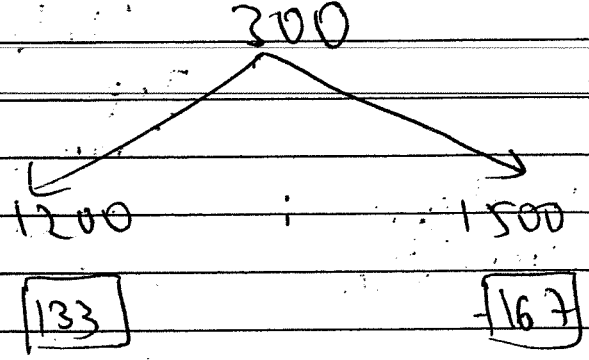
$\therefore T.P = 1200 + 133.33 = 1333$

X

(i) Yes because incremental contⁿ will be
 $(\frac{2000-1200}{1200-800}) \times 200 \text{ units} = 160000$

(ii) $T.P. = V.C + \text{Cont}^n$ (long term basis)

S.P. 2000
(-) V.P (A) (1200)
(B) (1500)



$\therefore T.P = 1200 + 133 = 1333$

Camlin	Page
Date	/ /

(iii) No

5

Profit if
Sales to outsider

Profit if sales to
Division 'B'

10

$$(2000 - 1200) \times 200 \\ = 160000$$

$$= (1333 - 1200) \times 200 \\ = 26600$$

15

20

25

30

Q.40

A Co.

Div. A

Div. B

Units = 200000

V. Cost ₹
 200000

F. Cost 500000
F. Cost 700000

ROT

$(200000 + 500000 + 500000) \times \frac{20}{100} = 240000$

Sales 940000

∴ No. of units 200000
S.P (p.u.) 4.70

Option (I)

Sales (external)
= 150000 @ 4.70

Sales (internal)
Div. B 50000 @ 2.00

Option (II)

Produce

150000 @ 4.70
Assets = 1200000
F.O = 25000

Camlin	Page
Date	/ /

Statement showing Analysis of proposal

Option	I	II
Produce	200000 units	150000 units
Sales	705000 (150000 x 4.70)	705000 (150000 x 4.70)
	100000 (50000 x 2.00)	
V. cost	(200000) (200000 x 1)	(150000) (150000 x 1)
F. cost	(500000)	(475000)
Profit/(Loss)	105000	80000

Camlin	Page
Date / /	

Q.39

Statement showing Analysis of Pt / (Loss)

Units	Mkt value		T. lost + Pft (Nok no. 1)	
	8L	12L	8L	12L
(A) <u>Bottle Div.</u>				
T.P.	1400000	2000000	1261277	1654964
Mfg. cost	(1040000)	(1440000)	(1040000)	(1440000)
Pt / (Loss) →	360000	560000	221277	214964
(B) <u>Mfg. Div.</u>				
Sales	9120000	12780000	9120000	12780000
Mfg. cost	(6480000)	(9680000)	(6480000)	(9680000)
T.P.	(1400000)	(2000000)	(1261277)	(1654964)
Pt / (Loss)	11240000	11000000	1378723	1445036
A+B = Pt / (Loss)	1600000	1660000	1600000	1660000

Nok no. (i) T.P = T. lost + shared pft

	800000	1200000
Sales	9120000	12780000
Bottle Div. cost	(1040000)	(1440000)
Mfg. Div. cost	(6480000)	(9680000)
	1600000	1660000

Camlin	Page
Date	/ /

Cost ratio : 1040000 : 6480000 1440000 : 9680000

Pft, 221277 1378723 214964 1445036

T.P, 1261277 1654964

Comments

→ The above analysis clearly shows that if the T.P is based on mkt value, then the profit of bottle div. will increase & Mfg. division will decrease.

→ If T.P is based on Total cost + shared profit, then profit of Mfg. div. will increase & that of Bottle div. will decrease.

Q.42

A Company

Harvesting	Oil mill	Mktng
Output	Input Output	Input Output
200 kg	2000 kg 1000 kg	1000 kg 500 cans
V. lost $(2000 \times 2.5) = 5000$	V. lost $(1000 \times 10) = 10000$	V. lost $(500 \times 3.75) = 1875$
F. lost $(2000 \times 5) = 10000$	F. lost $(1000 \times 7.5) = 7500$	F. lost $(500 \times 8.75) = 4375$
Mkt value $(2000 \times 1.5) = 25000$	$(1000 \times 62.5) = 62500$	$(500 \times 150) = 75000$

Ans no. (ii) Stat. showing Analysis of Pt/loss

Sales	₹ 75000
V. lost $(5000 + 10000 + 1875)$	<u>(16875)</u>
	58125
F. lost $(10000 + 7500 + 4375)$	<u>(21875)</u>
Pt/loss	36250

Ans no. (iii) Stat. showing calculation of T.P.

(i) $T.P. = V.C + Cont^n$

Sales	75000
V. Cost	(16875)
Cont ⁿ	<u>58125</u>

V.C	5000	:	10000	:	1875
Cont ⁿ	17222		34444		6459

	(i) $V.C + Cont^n$	T.P.
Harvesting	(5000 + 17222)	22222
Oil-mill	10000 + 22222 + 34444	66666
Mkt ^{ng}	1875 + 66666 + 6459	75000

2) Method (2)

	Mkt value @ T.P.
Harvesting	25000
Oil mill	62500
Mkt ^{ng}	75000

- 3) Comments
- T.P.
- Harvesting → Mkt value
 - Oil mill → V.C + Contⁿ

Camlin	Page
Date	/ /

Q.41

A/c.

Div. XComponent

$$5000 \text{ Units} \Rightarrow \begin{matrix} 562500 \\ 506250 \end{matrix}$$

+

$$5000 \text{ Units} \Rightarrow 337500$$

T.P @ 90.00 p.u.

Div. YInput ComponentOutput Product
c/p

1 : 1

Mfg. cost

$$5000 \text{ Units} = 1406250$$

+

$$5000 \text{ units} = 281250$$

(5000 x 56.25)

Statement showing Analysis of Pt/(acc) - Division X

<u>Units</u>	<u>T.P.</u>	<u>Mfg. cost</u>	<u>Pt/(acc)</u>
5000	$(5000 \times 90) = 450000$	(562500)	(112500)
10000	$(10000 \times 90) = 900000$	(900000)	-
15000	$(15000 \times 90) = 1350000$	(1237500)	112500
20000	$(20000 \times 90) = 1800000$	(1575000)	225000

Camlin	Page
Date	/ /

25000	$(25000 \times 90) = 2250000$	(1912500)	337500
30000	$(30000 \times 90) = 2700000$	(2250000)	450000

Statement showing Analysis of Pt/(loss) - Div. Y

Units	Sales value	Mfg. cost	T.P.	Pt/(bu)
5000	$5000 \times 393.75 = 1968750$	(1406250)	(450000)	112500
10000	$10000 \times 298.5 = 2985000$	(1687500)	(960000)	397500
15000	$15000 \times 247.5 = 3712500$	(1968750)	(1350000)	293750
20000	$20000 \times 208.5 = 4170000$	(2250000)	(1800000)	120000
25000	$25000 \times 180 = 4500000$	(2531250)	(2250000)	(281250)
30000	$30000 \times 150.75 = 4522500$	(2812500)	(2700000)	(990000)

Statement showing Analysis of Pt/(loss)

	Div. X - Net Pft is max.	Div. Y - Net Pft is maximum
Div. X - pft	450000	-
Div. Y - pft	(990000)	397500
Total pft/(loss)	(540000)	397500

Q.43

Tylon Ltd.

Textile units

Process house

500000 mtrs

Input Output 1:1

100mtrs 1 bundle

Outsider

Process house

Idle Capacity

(50% of 500000)

(30% of 500000)

(20% of 500000)

150000

1500

825/-

250000

2500

725/-

= 250000 mtrs

= 150000

= 100000

V. cost = (3 + 1.20) = 4.20 per mtr

V. cost = 80 per bundle

Fixed cost = 412000

F. cost = 100000

Ans no. (i) Statement Analysis of Pt / (Cost)

(A) Textile units

Ans no. a

Ans no. b

Ans no. c

Cap. ~~80%~~ 100%

~~80%~~

80% 100%

80%

100%

Sales

1500000

1400000

1400000

(250000 x 6)

(250000 x 5.6)

(250000 x 5.6)

T. P.

900000

900000

1500000

(150000 x 6)

(150000 x 6)

(250000 x 5.6)

V. C.

1680000

1680000

2100000

(400000 x 4.2)

(400000 x 4.2)

(500000 x 4.2)

Camlin	Page
Date	/ /

	F.C (412000)	(412000)	(412000)	(412000)
Pt/(loss)	<u>308000</u>	<u>488000</u>	<u>208000</u>	<u>288000</u>
(B) Process Horse				
Sales	1237500 (1500 X 825)	1812500 (2500 X 725)	1237500 (1500 X 825)	1812500 (2500 X 725)
V.C	(120000)	(200000)	(120000)	(200000)
V.C	(1500 X 80)	(2500 X 80)	(1500 X 80)	(2500 X 80)
F.C	(100000)	(100000)	(100000)	(100000)
T.P	(900000)	(1500000)	(900000)	(1400000)
Pt/(loss)	<u>117500</u>	<u>12500</u>	<u>117500</u>	<u>112500</u>

A+B

Pt/(loss)	425500	500500	325500	400500
-----------	--------	--------	--------	--------

(ii) The above analysis clearly shows that if capacity utilisation is 80% & T.P is ₹6, then processing horse will get the max. profit.