Transfer - Pricing

Business

↓

Net Profit

↓

$\boxed{\text{Sales} - \text{Cost}}$

Objectives of CA / MA

↓

Ascertainment of

Cost

SP

Cost Control

Oɨ

SOI S.P. (Selling Price)

External

SP

↓

MP

Internal

SP

↓

Transfer Pricing

AMUL

Milk Div. — Trf. — Curd Div.

Goods

Price to be charged

Transfer - Price.

Transferor Div

Transferee Div

T.P.

Transferor Div. → goods or Services → Transferee Div.

Price charged between Internal Transfer is called as

TRANSFER PRICE

l

✓ Transfer Price

Examples: (Backward / Forward Integration)

	Transferor		Transferee
a)	milk Div	Amul	Curd Div
b)	Curd Div		Buttermilk Div
c)	KPMG Tax Audit		KPMG Stat. Audit
d)	L&T Cement		L&T Infra.

Cement

Afr
a

History of TP

Pre - 1995 | Post - 1995

Pre - 1995

↓

Centralised Org.

↓

Decision Making only with Top - Authority.

↓

- Internal Trf @ Cost
- CA - Limited Scope
- Employee → Fixed Salary

ꝥ CA=Limited Stope O r

Employee → Fixed r

Salay

Post- 1995

1) Decentralisation / Departments

(1) Profit Centric (Decision making with Depts.)

Tsf of Internal goods / services @ a proper Price called as "Transfer Price"

employee (Bonus on Profit)

ESA (Scope has increased)

Centralis'n

BA (1995)

Amul

Milk

Curd

50,000 ltr of milk

@ cost

Capacity: 100,000 ltr

External Dd: 100,000 ltr

±

Capacity 100,000 elf

at htt

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EMEI :

ecen~~t~~ralisetC~~D~~ Profit

Cen~~t~~re)

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Amid

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Milk

Pdn 100,000μs

:

cap

E¥÷ lagoons cow

Ide

.oo£¥

(Decentralise Profit Centre)

¥

Amul

Milk so

Curd

Pdn cap : 10,000 ltrs

Ext Dd : 100,000 ltrs

Consult

CA

50,000 ltrs

Int Trf.

Centralised Organisation

Particulars	Milk	Curd	B.Mo.
Pdn Capacity	100,000 ltr.	20,000	10,000
Internal demand	20,000 ltr.	10,000	
Transfer price	@ cost	@ cost	

Decentralised + Profit Centric

Particulars	Milk	Curd	BM
Pdn Cap	100,000 Ltrs	20000	10,000
Internal Dd	20000 Lts	10,000	
TP	@ Method of TP	@ Method of TP	

Examples:

Decentralised

+

Profit Centric

Case 1:

FULL - IDLE. CAPACITY

Amul Milk

Curd.

Producing Capacity : 100,000 lts.

External demand : 80,000 lts.

Idle / Spare Capacity : 20,000 lts (100,000 - 80,000)

Internal Demand : 20,000 lts.

Milk:	MP/SP	Var. Cost
Divin	Rs. 100/lit.	Rs. 80/lit.

CA

What should be the T.P. of Milk Divn?

Range of T.P.

Minimum TP	Maximum TP
Recovery of Cost @	SP/MP @ (market Price)
TP = Rs. 80/-	TP = Rs. 100/-

Range of TP = 80 — 100

TP

roof

⇐

Ragge

tt

80-

1000

Case 2 :

PART occupied;
PART Spare.

Milk Dir. ← A ← Curd Dir.

- Production Capacity : 100,000 ltrs
- External Dd : 90,000 ltrs.
- Spare/Idle capacity : 10,000 ltrs (100,000 - 90,000)
- Internal Demand : 20,000 ltrs.

What should be the Range of TP of Milk Dir.?

Minimum TP ——————— Maximum TP

Rs 90/- to Rs. 100/-

(90 - 100)

Minimum TP

20,000 lts

10000 lts Spare / Idle

10,000 lts Ext. dd

@ cost

@ SP

@ 80/lt

@ 100/lt

Rs 800000/- +

Rs 1000000

Rs. 1800000 / 20000 lts = Rs. 90/-

2¥ =

Maximum TP

1P @ SP / MP

@ Rs. 100 / ct.

CASE : 3 : FULLY - Occupied.

	Milk	Curd
• Pdn Cap.	100,000 ltr.	
• External Demand	100,000 ll	
• Spare / Idle Capacity	0	
• Internal Dd.		20,000 ltr.

What will be the Range of T.P.?

by milk Dir's

Min TP	Max TP
@ mP	@ MP
= Rs. 100/-	= Rs. 100/-

roof

Learnings from the 3 CASES:

Case 1: Fully SPARE CAPACITY

Min TP: Recovery of Variable Cost

Max TP: Market Price

Max TP : Market Price

=

CASE - 2 : PART Occupied &

PART Spare

Min TP : Avg basis

Spare Capacity @ V

Occupied @ MP

Max TP : MP / SP

10,000 × 80 + 5000 × 100

15000

Maxi $^{MP}/_{\#}$

a

10,000×80,1*500×104

÷⇒

CASES : Fully Occupied

Min TP = MP

Max TP = MP

=

Q1: Solution: (Summary) (XYZ Ltd.)

XYZ Ltd.

Div. A $\xleftarrow{5000u}$ Div. B

Pdt. "P" ← Pdt. "Q"

Substitute: Rs 32 p.u.

Pdt = R

(Pdt P + Altns)

⊕ Rs 5/-

Ext. dd = 18,000 u

MP = Rs. 30/u

MC = Rs 20/u

[illegible]

- VSC
- Substitute value.
- Alteration Cost.

Alteratio
n

i) Reqd: Range of TP if

Pdn Capacity = 25000 of P.

↓

Pdn Capacity = 25000 units

External Demand

18,000 units

Spare

7000 units

↓

DivB to DivA 5000 units

(within Spare Capacity)

(Prima-Facie Analysis)

-8 (

¥)

capacity

① (Think from point of view of Tsferor)

Min. TP (Full Spare Capacity)

↓

Recovery of Variable Cost)

Min. TP @ ~~Re of~~ (20 − 2) = Rs 18/-

Note: KAI says that VSC will not be incurred in case of Internal Tsf. (Default Assump.)

e

not be incurre d o n cases of

Internal Tsf (Default

As up 'D

Toothpaste → Rs 50/-

(Rs 10/-)

C_lool (Oral-B) _hb

Colgate

Customer

¥-e⇒Rss③t¥¥

¥? !4¥)Cos_1..Rs]].1%_

. -ernal

Colgate

Toothpaste (own m-fg.) : 25 Rs.

4. Oral B : 10/- Rs.

Internal Trf.

(25 - 10/-)

= 25/-

Max TP: (Think from pt. of view of Transferee.) ⑧

① MP = Rs. 39/-

⊖ VSC = [illegible]

28/-

⊖ 18

10/-

MP : 30

VC : 20

Cont'n : 10/-

Or Subst (R) @ 32/-

Div B 28

⊕ Altn 5

33/-

Max TP =

MP : 30

⊖ VSC : 2

: 28

or

Subst. Value (Pdt R) : 32

② (Alt R)

⊖ Altern Cost = (5)

Comparable Value of R _ P : 27

① MP : 30 ⊖ VSC (2) 28

or

Subst. V : 32 ⊖ Alt'n C : (5)

whichever is Lower

Learnings from Case 1 (Fully Spare.)

(When VSC, Substitute pdt and Alteration Cost is there.)

Minimum	Maximum
Minimum TP	**Maximum TP**
Total Variable Cost	MP
(-) Variable Selling cost	(-) VSC
xxx	xxx
	(or)
	Substitute Value
	(-) Alteration cost
	xxx

whichever is lower

lower

Case-i: Pdn Capacity - 20,000 U (P)

(Past Occupied - Past spare)

Pdn Capacity = 20000u

External Dd: 18000 u

Spare capacity: 2000 u

Units Reqd by Tfee Div (B): 5000u

Spare: 2000 u

Sacrifice market dd.: 3000u

I

Spared

Sacrifice rang.n

et

-

2000
u

3000C

Min TP: (Think from pt. of view of Transferor.)

Recovery of Cost + of MP

Spare   occupied

5000 u

spare	occupied
2000 u	3000 u
@ (TVC − VSC)	@ (MP − VSC)
@ (20 − 2)	@ (30 − 2)
@ 18 pu	@ 28 pu
Rs 36,000/- (2000 × 18)	Rs. 84,000 (3000 × 28)

Rs. 36,000/- + Rs. 84,000

Rs. 120,000 = Min TP

Rs 24 p.u.

8)

⇐ Rs 120,000 Rs 29

⇐ Yin

a

p

Max MP = (Think from Tyee pt. of View)

MP 30

Substitute Value : 32

① Used (-2)

or

② Acc. cost : (5)

28

27

whichever is lower

Max MP → 27

=

Learnings from Case 2:

Min TP	Max TP
Spare @ (TVC − VSC)	MP
Occupied @ (MP − VSC)	⊖ VSC
Avg	×××
TP	or
	Substitute Value
	⊖ Add Cost
	×××
	whichever is Lower

¥

Case 3: (Fully Occupied)

Pdn Capacity : 18000 u

External dd : 18000 u

Spare / Idle : 0

Units Reqd : 5000 u

Spare : 0

Sacrifice from Market : 5000 u

sooth

=

Min TP = (Think from Pl. of view of Engineer)

↓

(fully occupied

→ = MP = 30

$\frac{(1)\ VSC\ (2)}{}$

① → 28

Max NP (T'fee)

MP 30 — VSC (2) = 28 ∞

Sales Val. 30 — Addn cost (5) = 27 ∞

Loss

~~Rs. 27~~

Transfer Pricing DEADLOCK

(where Internal Tot. is NOT-POSSIBLE.)

TP Deadlock

TP Deadlock

¥3

(TTMM)

Tu Tera Mein Mera

Tud Tera Mein Mera

↳

3M

30/-

④

Thor

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Free

Learnings of C-3 (Fully Occupied)

$$\text{Min TP} = \text{Max TP}$$

$$(MP - VSC) \qquad (MP - VSC)$$

Note: However, if (Substitute Value (−) Alter'n cost) is lower than (MP − VSC); then it is a case of Transfer Pricing Deadlock and Internal Txf is not possible.

and Datura Try is no
t
possible •

General points

i) Variable Selling cost will not be incurred/charged in cases of Internal Transfer.

ii) The Transferee division will not pay anything beyond (Substitute Value – Alter'n cost) to the transferor Div'n.

iii) Prima facie, we will always calculate Production Capacity, External dd' & Spare Capacity......

to the transferor Div n

iii) Prima facie, we will always calculate Production Capacity, External old & Spare Capacity so that we can figure out whether it is a case of

a) Fully Spare (or)

b) fully occupied (or)

c) Part Spare / Part Occupied.

iv) when we are calculating;

Min TP = Think from the view point of Transferor

Max TP = Think from the view point of Transferee.

Max TP = Think from the

view point of

Transferee

v) Learnings from (Fully Spare)

CI: Min TP | Max TP

Total VC ⊖ VSC | MP ⊖ VSC | (or) Subst. Value ⊖ Alt'n Cost

Lower

(TVC − VSC) + opportunity cost (30 − 20 = 10)

$$30 - 2 = 28$$

(or)

$$(20 - 2) = 18$$
$$+\ 10$$
$$= 28$$

Learnings from CE

(Past Spare ; Past Occupied)

Min TP

Spare

@ (TVC − VSC) (+)

Occupied

MP − VSC

(−) VSC

10 CA

VC

CSC)

Max TP

MP

(−) VSC

(OO)

TVC − VSC

\+

OC

Subst. Value

(−) opp'n cost

x ~x

whichever is lower

lower

=

Example

CA SK

1

✓ Teaching (Coaching Classes)

opportunity cost (Value of Benefit foregone.)

KPMG

10L

kfml

-

Learnings from C3 (Fully Occupied)

Min TP

$(MP - V_{RSC})$

or

$(CTVC - V_{RSC} + OC)$

Max TP

$(MP - V_{RSC})$

HW :

El

(Re-

Sobre)

Watsapp

8192014

9 9819201473 73

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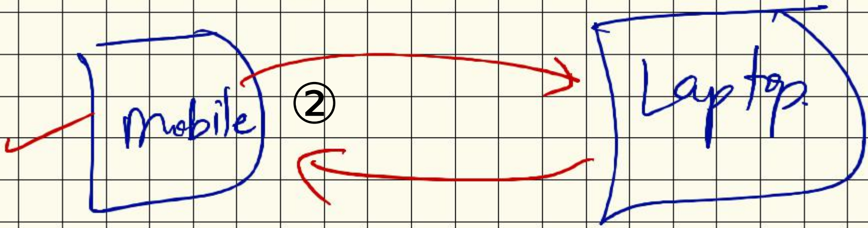
Crypto (form of currency.)

i) Barter System

Goods ⇄ Goods.

(ii)



Laptop.

~~Pen~~

Lapto
p

p④

$\Rightarrow$ Gold

Mobile $\longrightarrow$ log

L. $\longrightarrow$ Dog

Going.

Huge

U④ → Pegging

Hard Currency

f

USA → Pegging

God

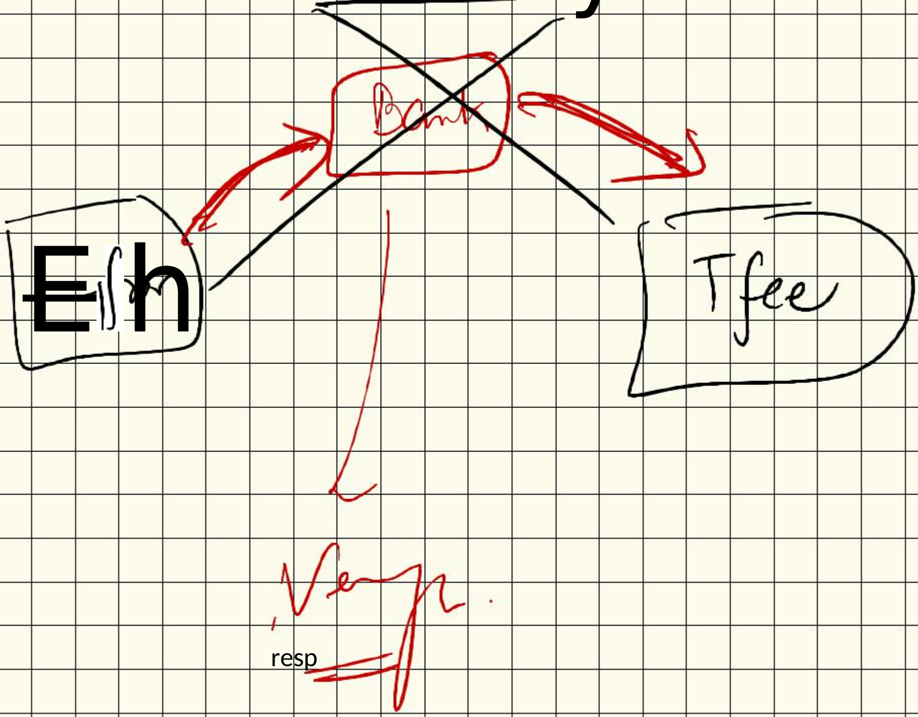
Gold

④

Money Bank

Gold Reserves

Net Banking



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Cum

$40K

1%

Glommin

Tesla

Bit Coins

$40L

Direct connect

SK

Costing

Mr. XYZ

Bit Coin

Concept of limiting factor

Human Wants are Un-limited and Resources are limited.

In such business scenario, where Resources like (RM, lab hr. etc.) are limited, then Concept of limiting factor is used . . .

of demoting factor is used -

Example: 1

Case 1

Optimised Ltd.	Pdt. A (in)	Pdt. B (in)
SP	200	200
(−) VC		
RM cost	100 (10 RM @ Rs 10/RM)	40 (4 RM @ Rs 10/RM)
Labour	40	110
Cont./ NP	60	50
Rank	I	II

Case 2

(Raw - Material is Limited to [illegible].)

Optimised Ltd	Pdt A (1u)	Pdt B (1u)
SP	200	200
RMC	100 (10 RM @ Rs 10/RM)	40 (4 RM @ Rs 4/RM)
Lab Cost	40	110
Contribution	60	50
× 10 units $\left(\frac{100\,RM}{10\,RM}\right)$ (1A = 10RM)	10u	25 (100RM/4RM)
Total Contribution	600 Rs.	1250 Rs.
Rank	II	I

(IA

10km

Rs
1250

)

total Couth 600A

l

Rank am l

Limiting factor: (Raw Material)

	A	B
Cont'n p.u. :	60	50
Raw material reqd p.u. :	10 RM	4 RM
Cont'n ÷ LF (RM) : p.u.	6	12.5
	II	I

From now on, if any Resource is limited; the RANKING of Products should be based on

[illegible]

m f e

is limited ; the RANKING of

Products should be based on

Concept of Li~~m~~iting ~~fa~~ctor !

Limiting factor formula :

$$\frac{\text{Cont'n p.u.}}{\text{L.f. p.u.}}$$

(Raw Material)

(Labour hours)

(Machine hours)

etc...

Q2:

Div. A (Profit)

	X	Y	Z
SP	48	$\boxed{46}$	44
VC	33	24	28
Contri p.u :	15	22	16
Lab.hrs p.u :	3	4	2
External dd :	800 u	500 u	300 u

Div B

300 units of Y

Substitute Rs. 45/-

→ Limited Labour

Limited

a) 6200h

b) 3800h

c) 5600h

a) 62004

y 38005

b)

c) 56004

Solution:

In limiting factor questions; always satisfy the external demand first and check the Total hours taken for external demand.

	X	Y	Z
Hours reqd p.u.	3	4	2
× External demand	800 u	500 u	300 u

Total hours = 2400 h + 2000 h + 600 h

= 5000 hours

5000inc
h

Case I : (Fully Spare.)

Pdn Capacity : 6200 h

Hrs reqd for External dde

5000 h

Spare

1200h

Units reqd by Internal Dir

300 units (Y)

@ 4 hrs/u

1200 hours

Addl hours reqd = 1200 hours

(-) Spare hours = 1200 hours

$\boxed{0}$

Since this is 0 we know it is FULLY-SPARE.

,eaofhi;

+÷⑨swing

-0 Fully SPARE

Cal of Trf Price

Min TP (fully spare) Max TP

Recovery of Variable cost

@ Rs. 24/-

MP 46

or

Substitute value

45

@ 45/-

TP = 24 - 45

Raff 24-40

ii)

Case 2:

Pdn Capacity : 3800 hours

External demand

5000 hrs

Available 3800 hours

Based on above availability; total hours to be allocated to products will be;

✓ We will now use the concept of limiting factor - - - -

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of

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r

Statement of Ranking for Lof

	X	Y	Z
Cont'n pu :	15	22	16
÷ Lab. hrs pu :	3h	4h	2h
Cont'n / Lab hrs :	5	5.5	8
Rank :	III	II	I

Based on availability of 3800h our allocation based on Ranking will be as :

	Hours Available	: 3800 h
(−)	Used by Z (300 x 2)	: 600 h
	Remaining	: 3200 h
(−)	Used by Y (500u x 4)	: 2000 h
	Balance	1200 h
÷	X (4hrs/u)	÷ 4 hrs
		300

Conclusion : (3800 hrs available)

X : 300u ; Y : 500u ; Z : 300u

Conclusion : On 3800 hrs available

X : 320 ; Y : 502 ; 2 : 300W

Units reqd. = 300 u of Y

× 4h/u (Y)

∴ 1200 hours Required.

Pdt. X to be sacrificed. : 1200 hrs.

Contⁿ lost by pdt. X : Rs 5/hr.

Total Contⁿ lost of pdt X = Rs. 6000/-

Total Cout
h

lost o x = Rs 6000f
f
t

Min TP = (300 u of Y)

- Variable cost of unit to be tfd. $(300\,u \times 24) : 7200$

(4) Cont'n lost of unit sacrificed. : 6000

Rs. 13200

÷

Total No. of Units : 300 u

Min TP = Rs. 44/-

Min TP

=

$=_R$ 441

-

S

Max P

Max $\nearrow$ P

- MP : 46

Substitute Value : 45

sufficient

as

45 -

Range : Min - Max

$\div$ 44 - 45

Ray	Min	max
	44	45

=

Part 3:

Pdn Capacity:

5600 hours

External aid — 5000 hrs

Spare — 600 hours

Units reqd (300 u - 4)

(300 u x 4h) = 1200 h

Spare — 600 h

Sacrifice — 600 h of X (3rd rank)

600k

6⑧

of

Czrdoank

)

Min TP :

Variable Cost of Units to be (Y) :
Tfd.

(300 u × 24/4) 7200

4 Cost lost of Sacrificed pdt : (600 h × 5/h) + 3000

Rs. 10,200

÷ Units to be Tfd. 300u

Min TP = 34 p.u.

Tfd -

Min TP = 34 pu

=

Max TP :

MP 46

Inter

Max TP : 45

:

TP 45

Max

=

Learnings: (in case of d.f. + TP sums)

1) External demand satisfied + Full Spare capacity

Min TP : Variable cost of Unit to be to transferred

Max TP : MP or

substitute Value

Substitut
e

Make

I

2) External demand also not satisfied.

Min

TP : Variable cost of Unit to be transferred

+ Contr'n lost / opportunity cost of unit sacrificed.

Max TP : MP or Subst. Value ↓

Max P Mp or

Iko Value

t

3) External demand satisfied
+
Some spare capacity.

Min
TP : Variable cost of Unit to be transferred

④ Cont'n lost / opportunity cost of unit sacrificed

Max TP : MP or

Subst. Value ↓

Max P Mp or

Shot Value

Q3: Solution Div A

Est. demand : 800u | 500u | 300u

	X	Y	Z
SP	500	450	400
① SP	500	450	400
(−) VC's	440	350	310
Cont'n p.u.	60	100	90
÷ Labour hrs p.u.	3	4	3
Cont'h / hr	20	25	30
Rank	III	II	I

Div. A → Div B ① (300 u of Y)

Case i) : 4400

ii) 5900

Substitute @ Rs. 430/-

ID 5900W

B. 410
1

i) Hours Required for External Demand.

X :	800 u	×	3	: 2400
Y :	500 u	×	4	: 2000
Z :	300 u	×	3	: 900
				5300 hours

ii) Case i

Pdn Capacity

4400 hrs

External demand

5300 hrs

Spare

0

We will now make the Statement of Hours Utilisation availed based on Ranking in previous Statements.

based on Rankin
g

in previous ~~Stat~~ement
s

Hours Available : 4400 hrs

⊖ Used by pdt Z : 900 hrs
(300 × 3) (1st R)

Remaining : 3500 hrs

⊖ Used by pdt Y : 2000 hrs
2nd R (500 × 4)

Remaining : 1500 hrs

÷ X (Hrs/unit used by x) : 3h

X : 500 u

Conclusion : 4400 hrs available

X	Y	Z
500 u	500 u	300 u

=

Condig n In 4400 hrs available

~~E~~e too Foon

Units req'd by DIV B

(300 u of 4 hrs/u)

= 1200 hours

Since NO spare capacity; we will sacrifice Pdt. X

→ Cont'n lost of X : 24000 Rs.

(1200 h x 20/h)

Min TP :

- Variable Cost of unit to be tfd. (y) = Rs 105000
  (300 u tfd @ 350)

① Opportunity Cost of sacrificed pdt. : Rs. 24000

Rs. 1

÷ No. of units ÷ 300

430 p.u.

Max TP : MP / Subst Val. (lower)

(450/430) ↓ = 430/- p.u.

Mgp , (car)

=

(4501430) t

429 pu

Case 2:

5900 hours

Pdn Capacity : 5900 hours

Capacity

External Demand

5300 hrs.

Spare

600 hrs.

Units Reqd

$(300 \times 4h)$

1200 hours

Spare

600 h

Sacrifice

Reqd from Pdt X

600 h

@ 20/h

Rs. 12000

Contribution lost

Min TP

VC of unit to be betfd (300 u @ 350) : Rs 105,000

④ Contr cost : Rs 12,000

Rs 117,000

÷ 300 u

Min TP : 390/-

Max TP : mp/ Sub

450/430

Q4:

Solution:

DIV Z

		A	B	C	D
		2800	2500	2300	1600
	S.P.	150	146	140	130
(-)	V.C.	130	100	90	85
	Contn p.u. =	20	46	50	45
÷	Lab. hrs p.u. =	3	4	2	3
	Contn / Lab. hr =	6.67	11.5	25	15
	Rank	IV	III	I	II

$\text{Div. Z} \xrightarrow{2500\ u} \text{Div. Y}$ → Substitute Value @ Rs. 125/-

of

Eps .

1257

Time Reqd to satisfy

External Dd'

A : 3 × 2800 = 8400

B : 4 × 2500 = 10,000

C : 2 × 2300 = 4,600

D : 3 × 1600 = 4,800

22,800 hrs

Pdn Capacity

20,000 hrs

Ext dd'

20,000 hrs

SPARE

0

27,800h
m

⑧

St. of hours Utilisation

	Hours available	: 20,000
(−)	Used by C	: (4600)
	Remaining	: 15,400
(−)	Used by D	: (4800)
	Remaining	: 10,600
(−)	Used by B	: 10,000
	Remaining for A	: 600
		÷ 3h
		200 u

Based on above calculations; conclusion is:

A	B	C	D
A: 200 u	B: 2500 u	C: 2300 u	D: 1600 u

A : 200W 2501 2200 u

Units Reqd of B

2500 units

$\times$ 3 hrs/u

= 7500 hours

Sacrifice of hours

600 h of A	+	6900 h of B
$\times$ 6.67		$\times$ 11.5
Rs. 4000	+	79,350

Total Contn lost = Rs. 83,350

Min TP = Variable Cost of units

Variable Cost of units
Hd (D : 2500u × 85) : 212,500

4) Contribution lost of pdt (A & B) : 83,350

295,850
÷ 2500u

Rs 118.34/-

Steps to be followed in Qns of LOF + TOP.

1) Hours Required to Satisfy External Demand

2) Pdn Capacity
   - External
   - Spare capacity

3) Statement of hours utilisation based on Rankings.

4) Unit to be tfd and Units to be SACRIFICED

5) Calculate CONTRIBUTION LOST for Sacrificed Units.

§ Calculate CONTRIBUTION LOST for

Sacrificed Units

Q1 : (Units)

Case 1 : Fully Spare

Min ———————— Max

$(TVC - VSC)$ ÷ $MP - VSC$ or $rc + oc/CL$

*

Compare

Subst. Value
(−) Altn Cost

xxx
(LOWER)

Value

Sub St

my

⑦ teeth cost

xx ✓

x

CLONED

Case 2: Part Occupied & Part Spare

Min

Spare + Occupied

$$\underbrace{(TVC - VSC) + (MP - VSC)}_{\text{Avg.}}$$

Max

$MP - VSC$

or

$VC + OC/CL$

Compare

Subst. Value

(−) Actl. Cost

xxx

(LOWER)

CLOWER)

Cases

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(MindP)

(MaxiP)

VSD

V_{vsc}

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Q5:

Solution: (AB Ltd.)

AB Ltd.

substitute Rs. 210

Div A | Div B

2A = 1B

(TP: 200)

Div A

Capacity: 20,000

VC: 190

FC: 20

Totality: Rs. 400,000

FC (20,000 × 20)

↑ TP: 220 (MP)

Div B

SP: 1500

VC (excl. C): 700

Comp C: 2 Comp

FC: 200

FC (Totality): (200 × 10,000) : 2,000,000

Req: Rs. 300,000

Cap. ↑ 40,000

FC ↑ 100,000

Inv. Rs. 1,000,000 @ cost of capital 12%

Ext. 220

Int: 210

¥ §

re
9W Rs 1500,000

Div A Rents out &

Div B buys Comp from o/s.

Div. A	Div. B (1 unit)
Rental income : Rs 300 000	SP : 1500
	(−) VC : (700)
	(−) Comp from o/s : (420)
Total Profit : Rs 2100,000	Contribution : 380
(300,000 + 1800,000)	× No of units : 10000 u
	Total Contribution : Rs. 3800,000
	(−) FC : Rs (2000,000)
	NP (B) : Rs. 1800,000

⑦ FC : Rs (200,000)

Np Rs Hoo, ooo (B)

ii) Div A sells o/s @ 220
Div B pur from o/s @ 210

Div A

SP : 220
(−) VC : 190

Cont'n : 30
× 20,000 Comp.

Total Cont'n : Rs 600,000
(−) FC (A) : Rs. (400,000)

NP (A) : Rs. 200,000

Div B

Profit same as (i)
= Rs. 1800,000

Div (A+B) = Rs. 20,00,000
(200,000 + 1800,000)

Fogg 180,000)

NP Rs 200,00
0

AD

iii) Div. A increase the Capacity

(+) Div. B pur from Div A @ 210

Div. A

		External		Internal
SP	:	220		210
(-) VC	:	(190)		(190)
Contb per	:	30		20
× No. of unit	:	20,000		20,000
	:	600,000	+	400,000

Total Contb = Rs. 1,000,000

(-) FC = Rs. 500,000 (4L + 1L)

(-) Interest = Rs. 180,000 (15L × 12%)

NP (A) Rs. 320,000

(+) NP (B) + Rs. 180,000 Rs. 21,20,000

NPCA) Rs. 320,000 B. 21,29000

⑦ NPCB t Bilfogoo

o

=

Recommendation:

choose option 3 as it results into Maximum profit for the company

Q6.

Solution

3 Divisions:

1st → 2nd → 3rd Div

a) MP MP

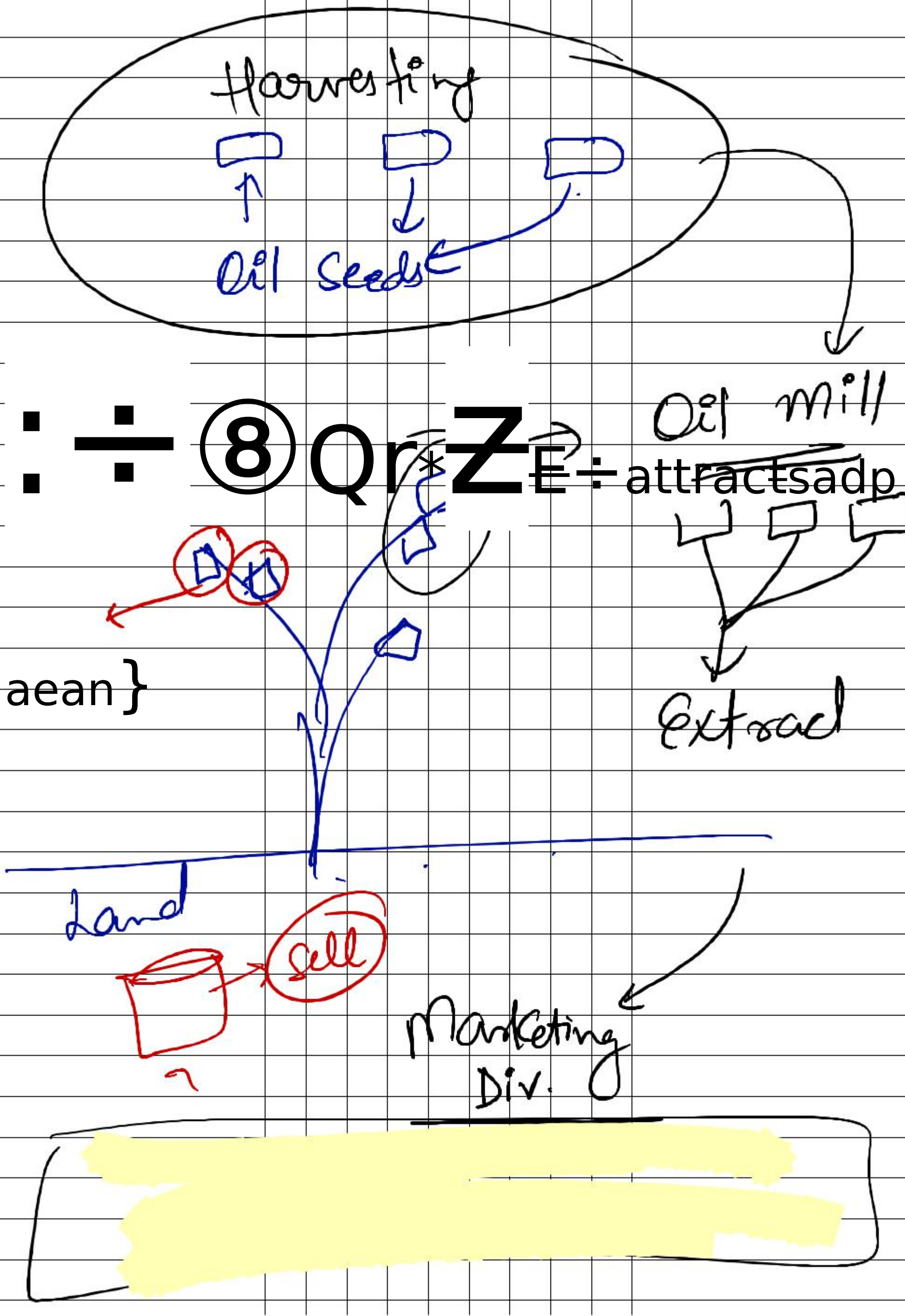
b) Shared Costs relative to Variable Cost.

Edible Oil

PARTICULARS	Harvesting Oil Seeds	Oil Mill	Marketing
Quantity	2000 kg	1000 Kg	500 cans (2kg)
→ VC p.u.	2.5	10	3.75
	(2000 × 2.5)	(1000 × 10)	(500 × 3.75)
→ FC pu	5	7.5	8.75
	(2000 × 5)	(1000 × 7.5)	(500 × 8.75)
MP	12.5/kg	62.5/kg	150/each

	(2000 XD	6000×7.55	GOOX8.AT
MP	laosflg	62.511g	150/17

←



Harvesting
Oil seeds
Oil mill
Extract
Land
sell
Marketing Div.

fDJ

i) To Calculate Overall Company Profitability

In such situations; we will Calculate the Total Sales of the Div'n that Sells Externally and Take Costs of all the divisions in the Company.

i) Overall Company Profit

		Rs.
Sales Value : (mktg)	:	75,000
(500 C @ Rs. 150/can)		
Variable cost :		16,875
(5,000 + 10,000 + 1,875)		
Contribution	:	58125
Fixed cost	:	(21875)
(10,000 + 2,500 + 9,375)		
Total - Profit	:	Rs. 36,250
(of Company)		

1700+43×2

= Ne t Profi t : Rs 36,250

=

C of compan y’

ii) Shared Contribution relative to Variable Cost Method.

a)

S.P.	100
V.C.	(60)
= Contribution	= 40

VC	60
+ Contn	+40
= SP	100

$SP = VC + Contn$

(SP for internal dept is called TP)

TP = VC + Contn

(r = Vc t couth

TP

Share of Cont

Rs. 58,125

3 Div'n

on the basis of variable cost

H	OM	M
$\frac{58125 \times 5000}{16875}$	$\frac{58125 \times 10{,}000}{16875}$	$\frac{58125 \times 1875}{16875}$
17,222	34,444	6458

Cont'n share of respective Div'n

a-

Conti shar e of respective Div 'm

TP Calculations

i) Harvesting

TP = VC + Cont'n

= 5000 + 17,222

= ₹ 22,222

(Sale price to Internal Div'n.)

ii) Oil - Mill Div'n

TP = VC + Cont'n

= (VC)

TP = 10,000 + 34,444 + 22,222

= ₹ 66,666

T = Vc 's t

t cent

p

Cvc)

. Tp ~~%a~~ = =to,ooo-134,444-122,222

T

a ls66,66=61 f

ii b) **Market Price (Harvesting)**

TP @ MP = Rs. 25,000/-

(12.5/kg x 00 kgs)

Oil Mill

TP @ MP = Rs. 62,500/-

(62.5/kg x 1000 kgs)

iii) a) Shared Cont^n irt Variable Cost

Profitability Statement.

	H	OM	M
Sales (from pt. ii)	22,222	66,666	75,000
(-) Variable cost	5,000	10,000	1875
(-) T.P. Cost	—	22,222	66,666
(-) FC	10,000	7500	4375
NET-PROFIT	7222	26,944	2084

iii b) Market Price

Profitability

		H	OM	M
	~~SP~~			
⊖	NC	5000	10,000	1875
	~~TPC~~			
	FC	10,000	7500	1,875
	NT	10,000	20,000	6250

Preferences of IP Methods

H : MP

OM : ~~SC~~ irt VC

M : MP

Q7: Solution: (Tarr Module 4n)

Cornflakes

Tfee | Tfroo

Corn Mfg (Production) Div. → Packaging Divis

Cartons MP

D + Pkg.

Final pdt

	MP
5000	200,000
8000	300,000

Cost

5000	120,000
8000	180,000

MP

5000	77,000
8000	95,000

Cost of Mfgr

5000	75,000
8000	80,000

Shared Cont'n relative to V. Cost	Shared Profit relative to cost
Overall Company Contn	Overall Company PROFIT
Ratio of Variable cost	Ratio of T. Cost

TP = SP = VC + Contn

TP = SP = Cost + Profit

Variable cost

✓

TP =sp= Vct couth

sp = Cost -1

Unfi

t

$SP = VC + FC + NP$

$SP = VC + \text{Cont'b}$

$SP = TC + NP$

	I	II
$SP = 100$	$SP = VC + C$	$SP = TC + NP$
$VC = 60$	$= 60 + 40$	$= 70 + 30$
$\text{Cont'b} = 40$	$= 1$	$(60+10)$
$-\ FC = 10$		$= 100$
$NP = 30$		

¥0

i) Statement of Profitability

Particulars	5000	8000
Sales	200,000	300,000
(-) Packaging Div. Cost	75,000	80,000
(-) Production Div. Cost	120,000	180,000
Net - Profit	5000	40,000

ii) Dish of Profit relative to cost

5000 units	8000 units
NP : Rs. 5,000	NP : Rs. 40,000

5000 units

Pkg: $5000 \times \frac{75000}{195000}$ = Rs. 1,923

Pdn: $5000 \times \frac{120000}{195000}$ = Rs 3077

8000 units

Pkg: $40,000 \times \frac{80,000}{260000}$ = Rs. 12,307

Pdn: $\left[40000 \times \frac{180,000}{260,000}\right]$ = Rs 27693

i) Calculation of T.P. by Packaging (Div)

TP = T.Cost + NP

TP = 75000 + 1923

= 76,923 (for 5000 units)

= 76,923 for 5000

(units)

For 8000 units

TP = TC + MP

TP = 80,000 + 12307

= 80,000 + 12,307

= Rs. 92,307

(TP)

	5000 u	8000 u
Overall	76923	92307
TP p.u.	= Rs. 15.38	Rs. 11.54

ii) TP as per Market Price method

For 5000 units MP of Transferor (Pkg. Dept) is Rs. 2200/-

8000 units is Rs. 9500/-

Profitability of Both Div'n under "Shared profit set to Cost"

Particulars	Pkg	Pdn	Total
5000 u			
Sales	76923	200,000	276,923
(-) Cost	(75000)	(120,000)	(195,000)
(-) T.P. Cost	–	(76,923)	(76923)
N.P.	1923	3077	5000
8000 u			
Sales	92307	320,000	
(-) Cost	(80000)	(200,000)	
(-) T.P. Cost		(92307)	
N.P.	12307	27693	40,000

OTP ~~Cost~~ €ct3

Nop	1230 7	2769 3	40,000

Profitability @ MP method

	Pack'g	Pdn	Total
40:60 5000u Sales	77000	200,000	
− Cost	75000	38.5% 200,000	1.6T
− TPC	-	77000	
NP	2000	3000	5000
8000 Sales	95	30,000	
− of	80000	1	2.25T
− TPC	-	95000	
↑ Np	15000	25000	40,000

30:70

O

TP (Shared Profit)

5000 u | 8000 u

$\frac{76923}{5000} = 15.38$ | $\frac{92307}{8000} = 11.54$

$\frac{77000}{5000} = 15.4$ | $\frac{95000}{8000} = 11.875$

> ⑦

Pkg Dept

5000 u | 8000 u

$\frac{75000}{5000} = 15$ pu | $\frac{80000}{8000} = 10$ pu

Red'n in cost by 33% ↓ (5/15)

Pdn Dep.

$\frac{120000}{5000} = 24$ | $\frac{180000}{8000} = 22.5$

Red'n in cost by 6.25% (1.5/24)

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24 22 of

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t

Q1: Tycoon Ltd.

RM (1000B x 100m/B)

(500,000) mtrs.

Textile Div.

50% (O/S)

250,000 mts

(1st June '20)

Rs. 5.6/mt

@ TP = Rs 6/mt (Jan)

Process House

30%

150,000 mts

150,000 / 100 mts = 1500 BR

SP : 825/B

If 1000 B ; SP ↓ : 725/B

RM : 3/m

VC : 2/m

FC : 12,000 Rs.

Cost

@ TP :

(+) VC 80

FC 10,000 Rs.

④

FC 10,00ps

Solution: @ 80% (Jan '20)

	Textile Dept		Process House	
Sales	24L	(2.5+1.5)×6 [illegible]	Sales: 12.375	(1500×825)
(−) RMC	12L	(1.5×[illegible])	RM [illegible]	
(−) VC	4.08L	(42×1.2)	VC: 1.2	(1500×80/8)
(−) TPC	—			
(−) FC	4.12		FC: 12L	
Net Profit	3,08,000		NP: [illegible]	

Total: 425500/-

@ 1[illegible]

	Textile		Process	
Sales:	30L	(2.5+1.5+1) × 6	1812,500	(725@(1500+1000))
(−) RMC:	15L	(5L×3)	1500,000	(1.5+1) × 6
(−) VC:	6L	(5×1.2)	200,000	(2500×80)
(−) TPC:	—		100,000	
(−) FC:	4.12			
	488000/-		12500 =	

-0 Tpo

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Fe

①

;5tD 4.12 1250

4880001

500,50

June @80%

7

J

Ext @ 5.6 × 250,000

PH @ 6 × 150,000

June @10%

1 Ext
65
× 2.5L

Int
6
× 2.5L

Q10:

X Y

X Tferor ↓

TP @ Rs. 90

Y Tfee ↓ Pdt. P ↓

1X = 1P

Rs 562500 — 5000 u

337500 — 15000 u

Price ↓ Dd ↑

Total Cost : 1406,250

(+) 5625 @ ↑ 5000 u

i) Profitability St. (X)

Units Sold	Sales @ TP @ 90	VC	NP
5,000	450,000	562500	(112500)
10,000	900,000	900,000	—
15,000	1350,000	1237500	112500
20,000	1800,000	1575000	225000
25,000	2250,000	1912500	337500
30,000	2700,000	2250000	450000

Profitability of Div Y

Units	Sales	Mfg C	TPC	Profit
5,000	1968750	1406250	450,000	112500
10,000	2985000	1687500	900,000	397500
15,000	3712500	1968750	1350,000	393750
20,000	4170,000	2280,000	1800,000	120,000
25,000	4500,000	2531250	2250,000	(281250)
30,000	4522500	2812500	2700,000	(990,000)

ii) @ x's Highest Profit

x : 30000

y : 30000

450000

(99000)

(549000)

@ y's Highest Profit

y : 10000

x : 10000

397500

0

397500

iii) Profitability St @ Output Level

U	S	MC	Fixed Cost	Profit
5000	1968750	1406250	562500	0
10,000	2985000	1687500	900,000	397500
15000	3712500	1968750	1237500	506250
20000	4170000	2250000	1575000	345000
25000	4500000	2531250	1912500	56250
30000	4522500	2812500	2250000	(540,000)

[illegible] is not based on Profit Centre, T.P. will be @ Cost!

: Div x is not based an profit

Centre , Top will be @ cost to

Div X

Q1 : Basics of TP (Units)

Q2, 3, 4 : Concept of TP + Df (Key factor)

Q5 : TP with DM

Q6, 7, 8 : Methods of TP

- Shared Cont'n in rel'n to NC (First cal. Overall Profit of the Company)
- Shared NP in rel'n to Costs
- MP

Mp

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Q9, Q10 : Profitability @ Different demand levels.

9 11..

9

CEO of the Co. + Summary of the Qn

mt÷a

~~Div. B~~

~~China~~

Components

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Div. A

✓

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D~~ivya~~

Solution:

Div A (96000 hours) → X (4h), Y (1h)

Div B → Pdt. Z (5000 u)

5000 u (X) @ 720

	X (4h)	Y (1h)
SP	800	160
VC	320	80
DM	300	60
Cont'n p.u	180	20
Hrs pu	4h	1h
Cont'n per hr	45	20
Rank	I	II
Sales Dd	15000 u	Unlimited

Div B:

SP : 1450

Imp. C : 800

VC (@ 400) : 400

DM : 120

Cont'n : 130

Foh (B) : 500000

Foh (X) 30L

D) Div B Imports tht Reg.

a) Div A Profitability

We know that Div A has a maximum of 96000 hours.

Accordingly, Rank will be given as per contribution / hour and the products will be made based on Ranking.

Statement of Allocation of hours.

Hours Available	:	96,000 h
(−) Used by X (15000 u @ 4h)	:	60,000 h
Hours Remaining	:	36,000 h
(÷) Hrs / unit of (Y)	:	1h
Total Units of Y	=	36000 units

f

Total	units	of Y	¥	36,000	units

Profitability St

Particulars	X	Y	Z
SP	800	160	14
(−) VC			
DM			
VC			
Imp C	X	Y	Z
Cont^n pu	180 (WN1)	20 (WN1)	130 (WN1)
× No of units sold	15000	36000	5000
Total Cont^n	2700,000	720,000	650,000
→	3420,000		650000
(−) Fixed cost	3000,000		500,000
	420,000 +		150,000

① fixed 390,00 soo

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UM , OO t 156,00

E 570,000

ii) Div. B will pur. from Div. A @ Rs. 800 (TP)

Div. A : 96000 hrs.

X = 15000 u Ext dd

X = 5000 u Int. dd

Y = ~~36000 u~~

Statement of Hours Allocation

Hours Available : 96 00 h

① Used by X

(15000 + 5000) × 4 h/u : 80000

Remaining : 16000 h

÷ Hrs per unit : 1 h/u

Units of Y = 16000 units ✓

chief of y 1600
0

Profitability SI F Div A & B

	X	Y
Cont'n p.u. :	180	20
No. of u :	20,000 u	16000 u
	3600000 (+)	320000

= Total Cont'n = 3920,000

(1) FC (3000,000)

920,000

Overall NP : 670000/-

(920,000 − 250,000)

Z

Cont'n : 130

(1) cost of Att'n (X) : 80

: 50

x No. of u : 5000

T. Cont'n : 250000

(−) FC : 500000

Net loss : 250000

ll

t

250,000

M

(9m ooo = ←

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N

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o

iii) TP by Div. A for X = +20

Div A

	X: Ext	X: Int	Y: Ext
Contn p.u. :	180	100 (180 − 80)	20
× No. of u :	15000	5000	16000

Contn = 2700,000 + 500,000 + 320,000

Total Contn = 3520,000

(−) FC = 3000,000

NP(A) = 520,000

Div B

Pdt. Z

Contn	:	130
(+) Disc	:	80
(−) Actn cost	:	(80)
Contn p.u.	:	130
× No. of contn	:	5000
	:	650,000
(−) FC	:	500,000
NP B	:	150,000

NP (A+B) = 520000 + 150,000 =

- 16000

FC =-3000,000 ①Fc

Nfc, a 529000 Nfp 150,000

=

=

NPCATB :52%000 t 150,00 B. 670,000

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Recommendation:

We will select option ③ as it results in a Balanced profitability for both Div A & Div B.

Q13: Solution: Maryanne Ltd.

(Pdt. 2)

Div A —Trf→ Div B

400000u

Div A → External

Target Profit

250,000

Div B → Substitute: R Ltd / Shld

Capacity : 100,000u

Ext dd : 70,000u

SP : 2500

VC : 1600

Contn : 900 p.u.

Fixed OH : 40,00,000 + 13,80,000

Max Cap : 1,20,00,000 @

Inv 11.5% 13,80,000

ht: nosy. 138000

i) To Cal TP to meet Target Profit

Div A

Pdn capacity
100,000 units

Internal Dd
40000 u
satisfy

External dd
60,000 u

??

TP

Ensure: Target Profit: 2,00,000

Reverse Strategy

④ → : Reqd NP : 250,00,000 (given)

⊕ Fixed ohd : 538,00,000 (given)

Total contn : 788,00,000

⊕ V.C. : 1600,00,000 (100,000 × 1600 pu)

Total Sales : 2388,00,000

External sales (given)
1500,00,000
(2500 × 60,000)

Bal. fig
(To be recovered from Internal dd.)

888,00,000
÷ 40000 u

TP : Rs. 2220

(250×6900) $40{,}0002$

XP Ps 2220

I $=$

ii) Cal. of MTP

Div. A Pdn Capacity

100,000 units

External dd

70,000 u

Spare capacity

30,000 u

Internal dept

40,000 u

Spare @ VC

Occupied @ MP

$$= \frac{(30,000 \times \text{Spare}) + (10,000 \times \text{occupied})}{40,000} = \frac{480,000 + 2,500,000}{40,000}$$

Min TP 825

VC

MP

$(20{,}000 \times 250)$

$(30{,}000 \times 1600)$

⇐ 48900,00--1250,0900-0

ugoo

Mff

Q13 //

Service Oriented TP:

IT Div (Team) ← 4500/D/T

External | Fees / consulting | Internal Divisions

Day per Team

Fees: SP: 4500 | 250

− Profit: 2700 | 150

Cost: 1800 | 100

80% → V = 1440

20% → F = 360

(Textile Div)

(2 Team)

Int. TP

VSC: 200

(Not chargeable.)

chargeab

le

)

D) TP to Textiles Div.; if
IT Div is fully occupied.

I.T. Divn fully occupied
↓
If Textile Divn needs 22 IT Teams the TP will be @ ME - VE
↓
450 - 200

Min TP = 4300/C/T

Max TP ✓

1 Team Spare & 1 Team Occupied.

2 Teams

1 T Spare | 1 T fully Occupied

TP = @ T.V.C. ⊖ V.S.C. | TP @ MP ⊖ VSC

$(1440 - 200)$ | $(4500 - 200)$

$= \dfrac{1240 + 4300}{2}$

Min TP = 2770/CD/T

Max TP = $(4500 - 200) = 4300$/CD/T

Mahn Gpo 20) 4300194 T

iii)

IT Div → External Client

Internal Div. ÷ ÷ ⇐ ÷

Rs. 1584,000

2T

48w

TP ÷ ÷

Calculation of fees per consulting per team:

Total fees recd for 48W / 2T = 1584,000

÷ No of Weeks ÷ 48 W

Rs. 33000/Week

÷ 5D

6600/Day

÷ 2T

3300/D/T

TP : 3100/D/T

3300101⑦€

200

Vsc /DIT

TP : /T

Q

XY Company

Capacity 350000

Div X — 20,000C → Div Y

(10,000 units)

External

$2X = 1Y$

FG

SP : 300 → SP : 1200

VC : 157

VC : 332

Cont's pu : 143

APC : (21/8)

FC : 20,62,000

FC : 1350,000

Profit - Centric

Centric

←

i) Calculation of TP

a) 15,000 Components

X → Pdn Capacity : 35,000C

external Dd
15000

Spare
20,000 C

Demand by Y : 20,000C

Full Idle Capacity

min TP @ VC = Rs. 157

"

←

Capacit
y

@

rip¥

b) Ext dd : 19,000C

$\Downarrow$

X → Pdn Cap. = 35000 C

External dd	Spare
19000C	16,000C

16,000C ↓ Demand by Y = 20,000C

↓

Part Spare; Part Occupied.

Spare	Occupied
16000 @ VC @ 157	4000 @ MP @ 300

$$= \frac{2512000 + 1200,000}{20,000} = \text{Rs. } 185.6 \text{ Min}$$

Rs 18506

=

yp

=

c) Ext. dd. : 35,000C

X → Pdn Cap: 35000C

Demand

35000

Spare = 0

Dd. by Y:

20,000 C

Store fully Occupied

yp = MP

= ~~300~~

=

ii) Y pur → External Supplier @ Rs. 255/- each

a) TP : 157 ⟷ Curr pur price of Y @ 255/-

As per above Y has purchased 20,000 C @ (255-157) = 98/- per C extra.

∴ (20,000 C @ 98/-) = Rs. 19,60,000/-

Extra Cost

Redn in Profit by Rs. 1960000/-

: C so oooo @ 94) ⇐ fg

1g 60,0001

=

Extr
a cost

A

Red: in Profit by A 196 oof

b) @ Y → TP

@ 185.6

@ Ext Supp

@ 255

Addi Cost

∴ Addi Cost per C $= (255 - 185.6)$

$= 69.4$ /C

$\times 20{,}000$

$=$ Rs 1388,000

∴ Red's in profit $=$ Rs 1388,000

c) Y → TP External Supp

@ 300 @ 255

Savings in cost : (300 - 255)

= 45/C

× 20000 C

Rs. 900,000

∴ ↑ in NP : Rs. 900,000/-

(Net - Profit)

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t Profit

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Work

HOME

Home-
~~Work~~

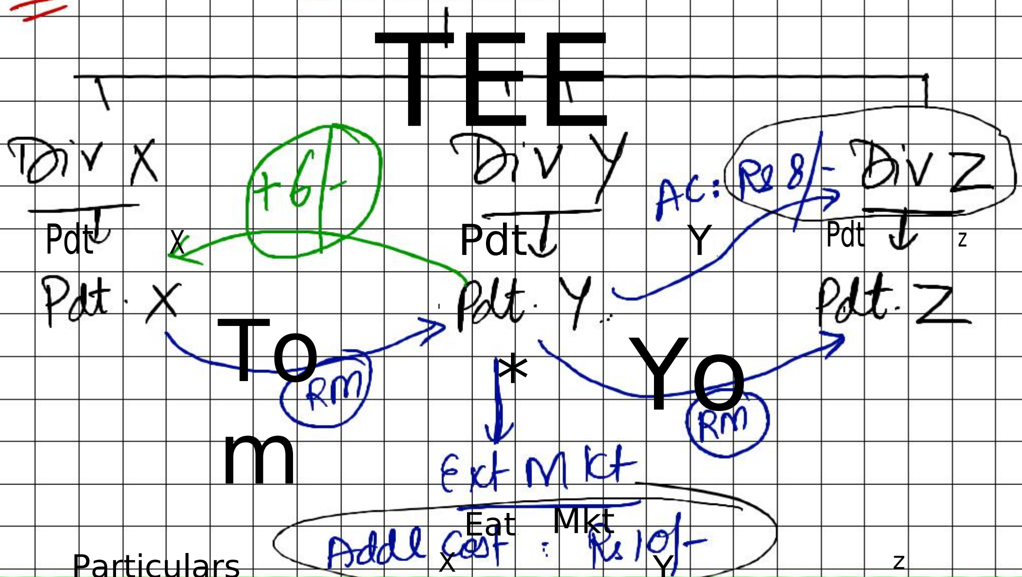
+

Revision

Renoir

Qn

TRI-POD Ltd



Particulars	X	Y	Z
SP	110	170	240
RM	40	[illegible]	135
DL	30	50	45
SAC	15	15	10
Cap	20,000	30,000	40,000
Demand	14,000	26,000	42,000

* Direct Selling: Not applicable to Internal Trf.

ohd

Internal TY

Range of Negotiation

Min ——— Max

Min TP — Max TP

Negotiate

i) $X \xrightarrow{TP} Y$ (Min - Max) ✓

ii) $Y \xrightarrow{TP} Z$ (Min - Max)

i) Cal of Min & Max TP for Tf of X to Y

Pdn Capacity : 20,000 u

X

External Dd.	Spare
14,000 u	6000 u

Y = 26,000 units.

(Min TP, Max TP, Units to be sold to)

Ext. Mkt ← → Internal Divn

Profit to be earned from External Sales:

(SP - All Costs)

(110 - 40 - 30 - 15)

= 25/- p.u.

× 14000 u

NP : Rs 350,000/-

15)

=

to

24

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← →

× IU 000 u

Ext

antenn
al

Mkt

Dir 'm

NP : Rs 350,000J

Min TP :

6000 u — 20,000 u

$\dfrac{6000\ u}{TVC - VSC}$ $\dfrac{20,000\ u}{MP - VSC}$

(40 + 30 = 70) (110 − 15)

(85 − 15 = 70) = 95

420,000 + 1900,000

(95 × 20,000)

$= \dfrac{2320,000}{26000\ u}$

= Min TP = Rs. 89.23

Max TP :

MP − VSC = (110 − 15)
= 95

or

Substitute Value
⊖ Attn cost = (85 − 6) 79

(lower)

Max TP = 79 ✓

(Since Min TP > Max TP; it is a case of TP Deadlock. Accordingly, internal transfer is not possible for 26,000 units.)

for 26,000

units

)

Accordingly, X can Sell 14000 u to outside market and it can Tsf. 6000 Spare units to Y.

Re-calculation of TP by Dir. X to Y

For 6000 spare units

Min TP

(TVC − VSC)

(85 − 15)

= 70

Max TP

(MP − VSC) or

(SV − Addn C)

(110 − 15) = 95

(85 − 6) = 79

÷ .

, ⑧

Conclusion :

X will Tf 6000 u to

Y @

min TP = 70

Max TP = 79

ii) Analysis of TP for Tsf from Dairy | Div 2

Pdn Cap. of 4 : 30,000

Ext dd

26000

Spare

4000

Reg. of 2

40,000 units

(As per the table in the qn; Div. Y will check the profitability from both External market and internal sale.

from both : External market and

Artery Sale

Profitability & for Ext 1 2

External Mkt

If Pur. at	O/S	70	79
SP	170	170	170
(-) DM:	85	70	79
(-) DL:	50	50	50
(-) SAC:	15	15	15
(-) Pick up:	-	6	6
(-) Addl cost:	10	10	10
NI:	10	19	10

Max TP that Z is willing to pay to is external pur. price

Internal Mkt (Z)

	O/S		79
DM	85	70	79
DL	50	50	50
SAC	-	-	-
Pick up	-	6	6
Addl	8	8	8

Minimum cost

143 :		143
Reject		Reject.

May TP that 2 is t d t

willin
g to pay to Y 143 : 13
4 : 193

is 2 's External pa
r price I I

i.e Rs 135 Reject reject

Y will sell:

26000 units to External Mkt

For ieb spare capacity of 4000 units;

Y will sell to Z @

min : 134 (VC)

Max : 135 (substitute Value)

Conclusion :

i) $X \xrightarrow[@\,70]{6000u} Y \xrightarrow[@\,134]{4000u} Z$: Z : Re. 1

ii) $X \xrightarrow[@\,71]{6000u} Y \xrightarrow[@\,135]{4000u} Z$: X : Re. 1

iii) $X \xrightarrow[@\,70]{6000u} Y \xrightarrow[@\,135]{4000u} Z$: Y = Re. 1

Q in Eastern Co Ltd.

CB $\longrightarrow$ 4CB = 1WD $\longrightarrow$ WD

External mkt.

12

Capacity : 320

VC/u : 220,000 $\longrightarrow$ [illegible]

FC : 920,20,000

a 16,45,36,000

a ⇒ @ Rs 320,000 : No Tender

↓ Rs 10,000 ; ↑ SQ 30 units

@ 1710,000 : No Tender

↓ Rs 50,000 ; SQ 2u ↑

If $P = a - bQ$

$MR = a - 2bQ$

✓ P = Quotation Price

✓ a = Price @ which No Quotation awarded

✓ b = Demand curve

✓ Q = Optimum Qty to be sold

✓ MR = Marginal Revenue

(Quotation ↑ Qty ↓)

jµsg000;sg2 =a-2bG

MR

Quotation awarded

✓ b Demand curve

u Q = Optimum Qty to be Sold

(l sp)

* MR = Marginal Revenue

TQtyDd

$P = a - bQ$

$MR = a - 2bQ$

100 Students

VC (Books) : 1500

+ FC : 500 $\left(\frac{50,000}{100}\right)$

2000/s

Net Profit + 10% 200

2200/-

Rest

50,000 Rs.

100

125 Admission

SP : 2200

VC : 1520

Rent : 800

Loss : 100

Bigger Rent : Rs. 100,000/-

125 St.

¥

S 125 Admission

fp 220 l

÷

re :15W Bigger : Rent :

ars:

± ÷

Read: BED

Calculation of SP of WD (QP)

$$P = a - bQ \quad \text{(i)}$$

$$MR = a - 2bQ \quad \text{(ii)}$$

WD

As per the pricing formula ;

Profit is Maximum ?

where / when

$$MR = MC$$

(Marginal Cost / Variable Cost)

cost)

For WD : $\boxed{MR = MC = a - 2bq}$

$MR = MC =$ Variable Cost of WD

$MR = MC = \left[(480{,}000) + (4 \times 220{,}000^{*}) \right]$

$(4 \times CB)$

$= 480{,}000 + 880{,}000$

$=$ Rs. 1360,000/-

(* In absence of info, we have taken VC for Transfer.)

Pong

Now:

$MR = MC = 1360{,}000$

$1360{,}000 = a - 2bQ$

$1360{,}000 = 1710{,}000 - \cancel{2} \times \frac{50000}{\cancel{2}} \times Q$

$1360{,}000 = 1710{,}000 - 50000 \times Q$

$50{,}000Q = 1710{,}000 - 1360{,}000$

$50{,}000Q = 350{,}000$

$Q = 7u$

Q

u

$$P = a - bQ$$

$$= 1710{,}000 - \frac{50{,}000}{2} \times 7$$

$$= 1710{,}000 - 175{,}000$$

$$\boxed{P = \text{Rs. } 1535{,}000}$$

Again WD = QP

(Price which gives maximum Profit)

T.P. → @ MP

CBD

QP

¥

0

11) a) QP of CBD

We know Profit is maximum

where; $MR = MC$

$$MR = MC = 220,000$$

$$220,000 = a - 2bq$$

$$220,000 = 320,000 - \cancel{2} \times \frac{10,000}{\cancel{30}\ 15} \times q$$

$$-100,000 = -\frac{10,000 \times q}{15}$$

$$\therefore q = 150$$

$$P = a - bq$$

$$= 320,000 - \frac{10,000}{\cancel{30}} \times \cancel{150}\ 5$$

$$= 320,000 - 50,000$$

$$P = 270,000$$

3~~20~~,000 50,00
0

P = 270,000

b)

For WD

$$MR = MC = \left(480{,}000 + \frac{1080{,}000}{(270{,}000 \times 4)}\right)$$

$$= 1560{,}000$$

$$1560{,}000 = 1710{,}000 - \cancel{\frac{50{,}000}{2}} \times q$$

$$-150{,}000 = -50{,}000\,q$$

$$q = 3$$

Done:

$$P = a - bq$$

$$= 1710\,000 - 25000 \times 3$$

$$\boxed{P = 1635{,}000}$$

P=163

Goal - Congruence

(सबका साथ, सबका विकास)

Minimum
(Transferor)

Maximum
(Transferee)

Win

TP

VC + opp. lost

Record

28

MP

SP

If T.i.P. is Kept

Within the Range

Min to Max

Tfor win

Tfee win

Overall Company also is happy

TP happens within

Min. TP to Max TP

Goal Congruence ✓

Qn

Div'n AB

Div A —— Div B

Div A → Div B

VC : Rs. 10 VC : RS 5

Rs. 20/-

i) Min TP to B :

Since A does not have external market ; all its capacity is spare and provided to B.

Accordingly $\boxed{\text{Min TP} = \text{VC of Div'n A}}$ = Rs. 10/-

=

Rs

lof

=

ii) If Div B gets pdt A from Outside

a) @ Rs 14/-

Since A does not have an external market; its major focus is to Recover its VC. i.e. Rs 10/-

Accordingly any price above 10 is acceptable to A- Division. /Div A

Since Div B is getting it @ 14

Max TP that should change B is Rs 14/-

Range of min - max will be (10 — 14).

Range of min Max will b
e

Co ID :

ii) If Div B can buy from outside @ Rs. 18

In this situation we have to consider the overall profitability.

If Div. B purchases from Div A at Div. B's Substitute price @ Rs 18/- then it will result into a loss for Div. B.

∴ Based on overall position.

Total Cost of Div. A = 10

Total Cost of Div. B = 5

Overall cost = 15

Overall 15

cost

We can sell it at Rs. 20/- in the market.

So ∴ A has a scope of max Rs. 5/- (20-15)

and also since Div A has a VC of Rs 10/- and No External market.

∴ Min TP = Rs. 10/-

and Max TP = Rs. 15/- (10+5)

Conclusion: ∴ Min TP : 10 & Max TP : 15

(Goal congruence will be promoted)

Conclusion i Min IO f

:

:

=

(goal congruence TP 15

Max TP :

will be promoted

)

iii) If Div B can purchase externally @ Rs. 14/-

If Div. A sells externally @ Rs. 12/-

and its capacity is fully utilised.

then (Min TP of Div. A will be $\boxed{MP}$

∴ Min TP will be Rs. 12/-

Since Div. B gets it externally @ Rs. 14/- ; we (i.e. Div A) will still charge a max of 14/-

As per ICAI; they have considered Max TP as Rs. 14/- (Substitute Value.)

still change a man of B. if

As per KAI ; they have considered

Max TP as B.ly/- C Substitute Nahe ,

which according to us seems incorrect.

ICAI : Min TP : 14

Max TP : 14

SK : Min TP : 12

Max TP : 12

Qn

AB

T

Div. A — (1A = 1B) → Div B

Div. A

Capacity : 50,000u

Ext dd : 30,000u

FC : upto 30000u : 430000/-

FC ↑ 10000u : 50000/-

VMC : 35

VSC (Ext) : 10

VSC : 5

Cont (CB) / Spl (Spl) : 30

Spl Sales : 70

Ext Mkt SP : 80

Div B

Capacity : 45,000u

Substitute Value

From ole : 45

(+) Subc : 30

Subst Value : 75/-

If Div A sells 4500u — TP = 75

Div A sells < 4500u : 70

Div A. Spl Order (15000 units)

Accept or Reject.

VSC — Fixed Cost

5 — 50000/-

seeing ist ✓ l Div ASpl. order-45000units)

Ea t Mkt go ✓

sp

a

As per the above Summary ;

Below are the Strategies possible :

for DIV : A

(i) Sell 30,000 u of External Dd
+ 20,000 u to B @ 70/-

(ii) Sell 30,000 u to Ext Mkt
+ 15,000 u to Spl Order
+ 5,000 u to Div. B @ 70/-

(iii) Sell 45000 u to Div B @ 75/-
+ 5000 u to Ext. mkt.

(iv) Sell 35000 u to Div B @ 70/-
+ 15000 u splorder.

(v) Sell 35000 u Ext.
+ 15000 u Spl order.

2Q3 ④ sell 35000u to DivB

t 1500 0 u splorder

⑨ Sell *! 35000u Ext

t 15000 u Spl order

Evaluation of Possibilities

	Ext Mkt	Sell all 45000 u	Sell less than 45000 u	Spl order (1500 u)
SP	80	75	70	70
(−) VMC	55	55	55	55
(−) VSC	10	–	–	–
(−) VSC (B+)	–	–	–	–
Contr :	15	20	15	15
	70	75	70	70

Either VC of Rs. 5 (or) FC of Rs. 50,000

$$\text{Indifference pt.} = \frac{FC}{VC\ p.u.} = \frac{50,000}{5} = 10,000\,u$$

nce

=l9
0

• If we sell less than (B + Spl. ordr) 10,000 u ;
then better to opt for VSC of 5.5

• However, if we sell more (B + Spl. ordr) than 10,000 u ;
then better to opt for FC : 50,000/-

Since in all cases, our (B + Spl. ordr) > 10,000 units ;
we will opt for
← FC @ Rs 50000/-

As can be seen from above calculations ;
the Best strategy will be
" Sell 4500 to B + 5000 to external mkt. "

0

Extern
al

"

Mkt

Example

Mobile : Least Cost

S1	S2	S3
10,000	20,000	15000
10,000	20000	15000

(4) Plg	1000	1000	100
	11K	21K	16K

Profitability Statement of A

Sales:

B	([illegible] x 75)	:	3375000
Ext. Mkt	([illegible] x 80)	:	400,000
Sales		:	37,75,000
(-) Variable Costs			
• VMC	(50000 x 55)		2750,000
• VSC (Ext.)	(5000 x 10)		50,000
Cont'n		:	975,000
(-) Fixed Cost			
upto 30000 u			430000
@ 10000 u			50000
@ 10,000 u			50000
(-) Fixed Cost of Div B & Splendor			50,000
NET PROFIT		:	**395,000**

W

① Fixed Coot of Div B & 50,000

Spl order

NET PROFIT : 395,000

#

ii) Range of TP

(Min TP – Max TP)

• Best Strategy : (45000 u B + 5000 u Ext mkt)

⇒ Min TP : (Trf to Div. B)

→ VC of unit + Contr lost

→ to be tfd (A)

55 + 15

= Rs. 70/-

⇒ [illegible] : MP or Subst. Value ↓ 80 75 = [illegible]

¥4

⇒ MEI M&m :

rant

Qn :

B. Ltd.

Subst : @ Rs. 23

Div. X (P . X)	Div. Y (Pdt. Y)	Div. Z (Pdt. Z)

1x

1x

SP : 25

Ext	X
23	TP
+ 5	+ 1
28	26

Ext.	X (Dir)
23	TP (~~25~~)
+ 3	+ 2
26	~~27~~ 26

24

For Modif.
Use X Idle Labour @ 3 p.u.

Z = 25

Z⑧

a) Statement of PROFITABILITY

Particulars	X O/S.	X Y	X Z	Pur Y	Pur X	Z
SP	25	—	—	65	65	90
TP	—	24	25			
DM	8	8	8	22	22	40
DL	4	4	4	6	6	8
Voh	2	2	2	2	2	2
TPC		—		26	26	26
MCT	11	10	11	9	9	14
	I	II	I	=	=	=

In case of X: it will prefer to sell on priority to [illegible] then Y y

Analysis of Capacity Expansion & External Trf.

	X	Z	Y
Existing Cap :	6000 u	3000 u	3000 u
Add'l cap. :	6000 u	2250 u	2000 u
Total Cap :	12000 u	5250 u	5000 u
External Dd :	5000 u	5000 u	5500 u
Balance :	7000 u		
Z 5000 u	− 2000 u		
Total Exph to be done	6000	2000 u	2000 u

done r

we will do the above Expansion only if it results into Additional Net-Benefit

Analysis of NB of Expansion

	X	Y	Z
Expansion done	6000 u	2000 u	2000 u
Earned :	64000	18000 (2000 × 9)	28000
(4000 × 11) (2) + 2000 × 10) (4)			
⊖ FC (Expansion)	45000	9000	23100
	19000	9000	4900
	Expand X	expand Y	Expand Z

GFI ✓expand Expand

y z

Eapand -

x

Overall NP of XYZ

	X	Y	Z
Contr'n	130,000	45000	70,000
	(5000 × 11 + 5000 × 11 + 2000 × 10)	(5000 × 9)	(5000 × 14)
① Fixed Cost	45000	9000	23100

85000 + 36000 + 46900

Total NP : Rs. 167,900/-