

Face to Face Classes For
CA. FINAL
At Gurgaon

FINANCIAL REPORTING
(Accounts)

**ADVANCED MANAGEMENT
ACCOUNTING**
(Costing & O.R.)



By CA. Mohit Arora
(A Well Known Faculty for CA Final in Gurgaon)

Batches starting soon, for enquiry and registration contact at
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Why to join Classes by Mohit Sir.

- Direct face to face interaction with students, with Small batch Size.
- Specially designed books having approximately 500 practical problems, all concepts and theory in a easy to understand manner, covering Study material, Past examination questions, RTPs, and MTPs.
- Regular assessment through tests.
- Availability for query discussion/ doubt clearing (Post batch completion till examinations)
- A very good track record of passing %. Almost 100% of Mohit Sir's students got cleared in AMA in past few attempts.
- AMA toppers in Gurgaon in past two attempts were Mohit Sir's Students.

SUCCESS STORIES

 CA. Jyoti Joon	Gurgaon Topper (CA Final May 2013) 82 Marks in AMA Highest in Gurgaon	Costing class by Mohit sir is best. He teaches in systematic and effective manner. He Clears concepts by explaining them deeply & by solving questions on every topic, which helps the students in scoring 80 plus in costing.
 CA. Ankit Singla	72 Marks in AMA Highest in Gurgaon (Nov. 2012)	Clearing both groups of CA Final in single sitting and scoring more than 70 in two subjects, specially 72 in Advanced Management Accounting was never so easy, but with a strong willpower and good guidance by Mohit sir and my parents has let it happen and today I am a qualified Chartered Accountant. Thanks a lot Sir.
 CA. Deepak Kumar	68 Marks in AMA Second Highest in Gurgaon (May 2012)	Preparing for CA Finals with my job responsibilities was quite a difficult task for me. Teaching techniques used by Mohit Sir helped me a lot in understanding and retaining the concepts. His helpful and motivating behaviour also became a force in achieving my goal.
 CMA. Dheer Ambawata	63 in AMA (EPM) And 70 in Financial Reporting (Dec. 2013)	Mohit Sir's style of teaching is Excellent. He is extremely friendly and motivating. Due to his continuous efforts and motivation I cleared my finals with good marks. Thanks to sir for his support and help.

OTHER STARS

 CA Shruti Kohli	 CA Md. Muzzammil	 CA Khyati Joneja	 CA Navita	 CA Amitabh Pandey	 CA Deepak Chutani
 CA Surbhi Bhardwaj	 CA Priyanka Goyal	 CA Sarika Jain	 CA Narendra Jain	 CA Kaushal Jain	 And Many More

SUGGESTED SOLUTIONS TO AMA

CA FINAL MAY 2014

SOLUTION: 1 (a)**COMPUTATION OF TARGET COST PER KIT**

Particulars	Amount
Target Sale Price per Kit	1,600
(-) Target Profit (10% on sales)	160
Target Cost p.u.	1,440

COMPUTATION OF TOTAL RELEVANT COST & UNIT COST (For 100 Kits)

Particulars	Amount
Direct Materials	90,000
Direct Labour	32,000
Variable Overheads	9,600
Tools and Consumables (16,400 – 10,000)	6,400
Total Cost	1,38,000
Output (Kits)	100
Current Cost per Kit	1,380

Relevant cost per kit (Export Order) = Current Relevant Cost per Kit + Special Packing Cost per kit (Variable)
 $= 1,380 + 20$
 $= 1,400 \text{ per kit}$

(i) Now Permissible total Inspection cost (Fixed) will be $= (1,440 - 1,400) \times 300 = ₹12,000$

(ii) If Expo Ltd. offers to take the products without inspection, selling price to earn 10% profit on such price will be
 $= (1400 \div 90) \times 100 = ₹1,555.56$

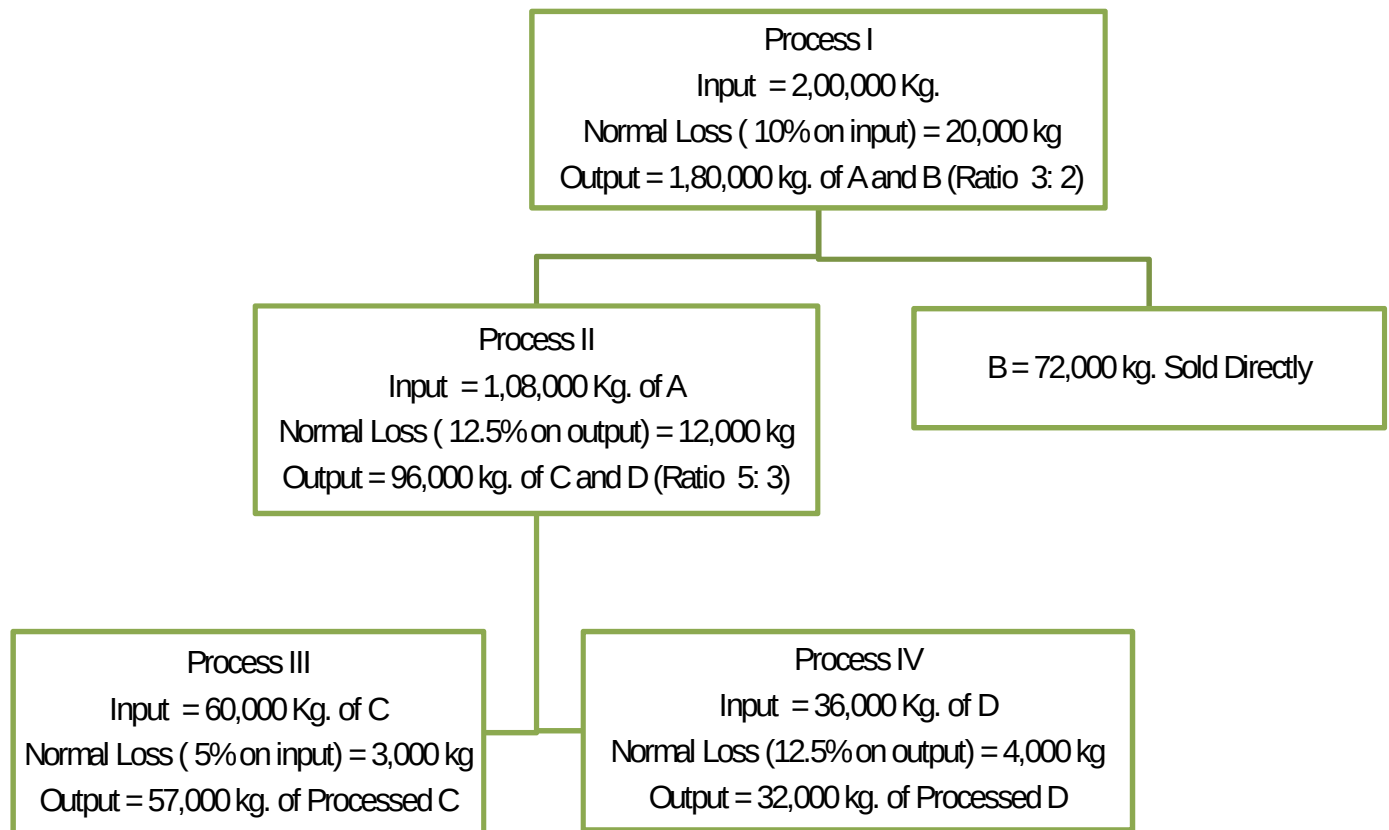
(iii) Maximum discount that can be offered $= 1,600 - 1,555.56 = ₹44.44$
 Or $(44.44 \div 1,600) \times 100 = 2.78\%$

SOLUTION: 1 (b)**STATEMENT OF NET PROFIT UNDER DIFFERENT ALTERNATIVES**

Particulars	Sale of C		Sale of D	
	Without Processing	With Processing	Without Processing	With Processing
Revenue	33,00,000 (60,000 X 55)	37,62,000 (57,000 X 66)	14,40,000 (36,000 X 40)	17,60,000 (32,000 X 55)
Less: Further Processing Cost	0	3,95,600	0	3,82,500
Net Inflow	33,00,000	33,66,400	14,40,000	13,77,500

So C should be sold After Processing and D should be Sold Before Processing to get maximum profits.

Working Note: Chart Showing Input and Output of different processes:



SOLUTION: 1 (c)

- (i) **Invalid:** As The TQM approach highlights the need for a customer-oriented approach, these customers may be external parties as well as internal parties such as managers etc. All these internal parties also need to be better informed, better equipped and better served so that they will be able to serve external parties properly. So the point is invalid.
- (ii) **Valid:** Well trained employees will be more capable in identifying and satisfying the needs of customers in time.
- (iii) **Valid:** One should have clear objective in One's mind before starting any work. Identification of objectives in advance will be more helpful in identifying the manner by which such objective will be achieved. So management by objective will be helpful in setting priorities and finding out the ways by which TQM will be achieved.
- (iv) **Valid:** Proper planning and monitoring plays a very important role in achieving the goal. So where we are having a separate department head for each department, it will help in proper planning, implementation, monitoring and control and ultimately maintaining quality creating environment within the organization.
- (v) **Invalid:** Avoiding documentation and procedure may create serious problems, such as one will not have anything in future for reference, producing lesser quality products etc. So this point is invalid,

SOLUTION: 1 (d)

Matrix after Row Operations:

To city \ From city	P	Q	R	S	T
P	X	2	8	0	2
Q	2	X	6	0	2
R	4	2	X	4	0
S	0	0	8	X	8
T	0	0	2	6	X

Matrix after Column and Line Operations:

To city \ From city	P	Q	R	S	T
P	X	2	6	0	2
Q	2	X	4	0	2
R	4	2	X	4	0
S	0	0	6	X	8
T	0	0	0	6	X

Since No of lines $\neq$ Order of matrix, this solution is not final solution, matrix after further and further line operations will be as follows:

To city \ From city	P	Q	R	S	T
P	X	0	4	0	0
Q	0	X	2	0	0
R	4	2	X	6	0
S	0	0	6	X	8
T	0	0	0	8	X

Since No of lines = Order of matrix = 5, this solution is final solution, and Assignment matrix is given below.

To city \ From city	P	Q	R	S	T
P	X	0	4	0	0
Q	0	X	2	0	0
R	4	2	X	6	0
S	0	0	6	X	8
T	0	0	0	8	X

As the matrix suggests two allocations are same i.e. R – T. So after putting M instead of R – T in column 3 and doing necessary operations with the column the matrix will be as under:

To city From city	P	Q	R	S	T
P	X	0	2	<u>0</u>	0
Q	0	X	<u>0</u>	0	0
R	4	2	X	6	<u>0</u>
S	0	<u>0</u>	4	X	8
T	<u>0</u>	0	M	8	X

Assignment schedule

From city	To city	Cost
P	S	4
Q	R	10
R	T	10
S	Q	4
T	P	6
Total		34

Route is P – S – Q – R – T – P Total cost ₹34

SOLUTION: 2 (a)

(i) **Decision: 1**

STATEMENT SHOWING UNIT COST, SUB-CONTRACTING COST AND CONTRIBUTION PER UNIT

Particulars	A	B	C	D
Materials p.u.	40	42	46	40
Labour cost p.u.				
(i) Assembly dept. @ ₹10/ hr.	15	20	15	20
(ii) Machine dept. @ ₹12/ hr.	18	24	36	30
Variable O.H. @ ₹4/ hr. (assembly dept.)	6	8	6	8
Total Variable Cost p.u.	79	94	103	98
Sub Contracting Cost p.u.	85	95	101	100
Selling price p.u.	100	109	121	124
Contribution p.u. (S. Price – V. Cost)	21	15	--	26
Assembly Hrs. p.u.	1.5	2	1.5	2
Contribution per hour	14	7.5	--	13
Ranking (based on contribution)	I	III	*	II
Extra cost p.u. (S. cont. cost – V. cost)	6	1	--	24
Extra Cost per hour	4	0.5	--	12
Ranking (based on extra cost)	II	III	*	I

*As Subcontracting cost of Product C is quite below than the production cost of the same, so C should be purchased from outside. So Contribution of product C is not Considered in Ranking.

Decision: 2**RANKING WISE PRODUCTION SCHEDULE FOR FIRST 1,00,000 UNITS**

Product	D	A	B	Total
Ranking	I	II	III	--
Production	30,000	40,000	30,000	1,00,000
Assembly Hrs. p.u.	2	1.5	2	--
Total hrs. Consumed.	60,000	60,000	60,000	1,80,000

So, We should produce as per production schedule given above as there is not any involvement of additional fixed cost for first 1,00,000 units.

Decision: 3

Now Company is having 40,000 remaining hours. (2,20,000 – 1,80,000).

Company has to sell Remaining 25,000 units of "B" (55,000 – 30,000).

Required Hrs. for production = 25,000 X 2 = 50,000 hrs. but the company has only 40,000 hrs.

So company can produce only 20,000 units of "B" in these hours by spending additional fixed cost of ₹4,07,000 (12,50,000 – 8,43,000).

Or company can subcontract these 20,000 units by spending additional cost of ₹40,000 (95 – 94) X 40,000

So it is better to subcontract 20,000 units of B as incremental cost is lower in this option.

Decision: 4

Remaining 5,000 units of Should also be subcontracted.

STATEMENT OF CONTRIBUTION PER UNIT, TOTAL CONTRIBUTION AND PROFIT.

Particulars	A	B		C	D	Total
		Produced	S. Cont.			
Selling price p.u.	100	109	109	121	124	
Variable cost p.u.	79	94			98	
S. contracting cost p.u.			95	101		
Contribution p.u.	21	15	14	20	26	
Units sold	40,000	30,000	25,000	36,000	30,000	
Total contribution	8,40,000	4,50,000	3,50,000	7,20,000	7,80,000	31,40,000
Fixed Cost						8,43,000
Profit						22,97,000

(ii) Average Contribution per unit = 31,40,000 / 1,61,000 = 19.50

BEP = 8,43,000 / 19.50 = 43,231 units approximately.

(iii) Situation will never change even if assembly labour is not a key factor as additional fixed cost for producing more than 1,00,000 units is quite more than additional subcontracting cost so, company should subcontract any units more than 1,00,000 units. Situation will also not change, if there is not any market commitment, as subcontracting cost is quite below from selling price, so in this situation it is profitable for company to satisfy complete requirement of market.

SOLUTION: 2 (b)

Random No. Table 1 (Arrivals):

Numbers	Probability	Cum. Prob.	Range
8	0.10	0.10	00 – 09
9	0.25	0.35	10 – 34
10	0.20	0.55	35 – 54
11	0.15	0.70	55 – 69
12	0.18	0.88	70 – 87
13	0.12	1.00	88 – 99

Random No. Table 2 (Service):

Numbers	Probability	Cum. Prob.	Range
8	0.15	0.15	00 – 14
9	0.20	0.35	15 – 34
10	0.25	0.60	35 – 59
11	0.16	0.76	60 – 75
12	0.14	0.90	76 – 89
13	0.10	1.00	90 – 99

Simulation Table:

Trail	R. No.	Arrived	R. No.	Service Capacity	O. Stock	Arrived	Serviced	C. Stock
1	69	11	52	10	1	11	10	2
2	45	10	36	10	2	10	10	2
3	46	10	62	11	2	10	11	1
4	10	9	49	10	1	9	10	0
5	82	12	68	11	0	12	11	1
6	16	9	77	12	1	9	10	0
7	35	10	55	10	0	10	10	0
8	70	12	66	11	0	12	11	1
9	57	11	51	10	1	11	10	2
10	92	13	88	12	2	13	12	3
Total								12

Average No of Laptops held for more than one day for service = $12/10 = 1.2$ laptop.

SOLUTION: 3 (a)

Sales variances (Revenue Approach)

- Total Sales Value Variance = Budgeted Sales – Actual Sales = $3,000 - 3,277.50 = ₹277.50$ lakhs Favourable
- Sales Price Variance = Std. sales value for Actual Sales Qty – Actual sales
 $= (3277.5 \div 115) \times 15 = ₹427.50$ lakhs Favourable.
- Sales Volume Variance = Total Sales Value Variance – Sales Price Variance
 $= 277.50 F - 427.50 F = ₹150$ lakhs Adverse

Hence, Reduction in sales quantity = $(150 \div 3,000) \times 100 = 5\%$

Material variances

- Materials Cost Variance = Standard Cost for Actual Output – Actual Cost
 $= (2,000 - 5\%) - 2,357.5 = ₹457.5$ lakhs Adverse
- Materials Price Variance = Std. cost for Actual Qty Consumed – Actual cost
 $= [(2,357.5 \div 115) \times 100] - 2,357.5$
 $= ₹307.50$ lakhs Adverse.
- Material Usage Variance = Materials Cost Variance – Materials Price Variance
 $= 457.50 A - 307.50 A = ₹150$ lakhs Adverse

Variable overheads variances

- (i) VOH Cost Variance = Standard Cost for Actual Output – Actual Cost
 $= (500 - 5\%) - 525 = ₹50 \text{ lakhs Adverse}$
- (ii) VOH Expenditure Variance = Std. cost for Actual Hrs. – Actual cost
 $= [(525 \div 105) \times 100] - 525 = ₹25 \text{ lakhs Adverse.}$
- (iii) VOH Volume Variance = VOH Cost Variance – VOH Expenditure Variance
 $= 50 A - 25 A = ₹25 \text{ lakhs Adverse}$

Fixed overheads variances (Marginal Costing Approach)

- (i) FOH Expenditure Variance = Budgeted FOH – Actual FOH
 $= 300 - 367.50 = ₹67.50 \text{ lakhs Adverse.}$

Assumptions:

- (i) Actual Sales Qty. = Actual Production Qty.
- (ii) Increase in Overhead Rate is given only for Variable Overheads.

RECONCILIATION STATEMENT

Particulars	₹ In Lakhs
Budgeted Profit (2013)	200.00
Material Variance	
(i) Price	307.50 A
(ii) Usage	150.00 A
Variable OH Variance	
(i) Expenditure	25.00 A
(ii) Volume	25.00 A
Fixed OH Variance	
(i) Expenditure	67.50 A
Sales Variance	
(i) Price	427.50 F
(ii) Qty [Sales Qty Variance X P/V Ratio*]	25 A
Actual Profit (2014)	27.50

* P/V Ratio (2013) $= [(200 + 300) \div 3,000] \times 100$ $= 16.67\%$
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SOLUTION: 3 (b)

Let the no units produced are x_1 , x_2 and x_3 respectively. Now Formulated Problem is as under:

Maximize Contribution (Z) $= 8x_1 + 6x_2 + 5x_3$

Subject to

$$4x_1 + 4x_2 + 6x_3 \leq 384$$

$$3x_1 + 2x_2 + 4x_3 \leq 288$$

$$x_3 = 30$$

Where

$$x_1, x_2, x_3 \geq 0$$

Now taking advantage of the fact, $x_3 = 30$, the problem will be as under:

Maximize Contribution (Z) $= 8x_1 + 6x_2 + 150$

Subject to

$4x_1 + 4x_2 + 6 \times 30 \leq 384$ or $4x_1 + 4x_2 \leq 204$

$3x_1 + 2x_2 + 4 \times 30 \leq 288$ or $3x_1 + 2x_2 \leq 168$

Where

$x_1, x_2 \geq 0$

Let the slack variables are s_1, s_2 respectively. After introduction of these variables the problem will be as under:

Maximize Contribution (Z) $= 8x_1 + 6x_2 + 150 + 0s_1 + 0s_2$

Subject to

$4x_1 + 4x_2 + s_1 = 204$

$3x_1 + 2x_2 + s_2 = 168$

Where

$x_1, x_2, s_1, s_2 \geq 0$

Now Solution by simplex method is as under:

Simplex Table

Contribution per unit (C_j)	Basic variable	Quantity	8 X_1	6 X_2	0 S_1	0 S_2	Ratio
0	S_1	204	4	4	1	0	51*
0	S_2	168	3	2	0	1	56
	Z_j	0	0	0	0	0	
	$C_j - Z_j$		8*	6	0	0	
8	X_1	51	1	1	1/4	0	
0	S_2	15	0	-1	-3/4	1	
	Z_j	408	8	8	2	0	
	$C_j - Z_j$		0	-2	-2	0	

Since there is not any positive value in ($C_j - Z_j$) row, this solution is final solution and according to this solution:

$X_1 = 51$ units

Profit = ₹ 408

But according to restriction given in the question, Production schedule is

$X_1 = 51$ units

$X_1 = 30$ units

Profit = ₹ (408 + 150) = ₹ 558

SOLUTION: 4 (a)**1. STATEMENT OF COST DRIVERS**

Particulars	General Supermarket Chains	Drugstore Chains	Chemist Shops	Total
(i) No. of orders	1,000	2,650	9,500	13,150
(ii) No. of deliveries	960	2,470	8,570	12,000
(iii) No. of Cartons shipped per delivery	250	75	12	
(iv) Total No. of Cartons Shipped [(ii) X (iii)]	2,40,000	1,85,250	1,02,840	5,28,090
(v) Shelf stocking hrs. per delivery	2	0.5	0.1	
(vi) Total Shelf stocking hrs. [(ii) X (v)]	1,920	1,235	857	4,012

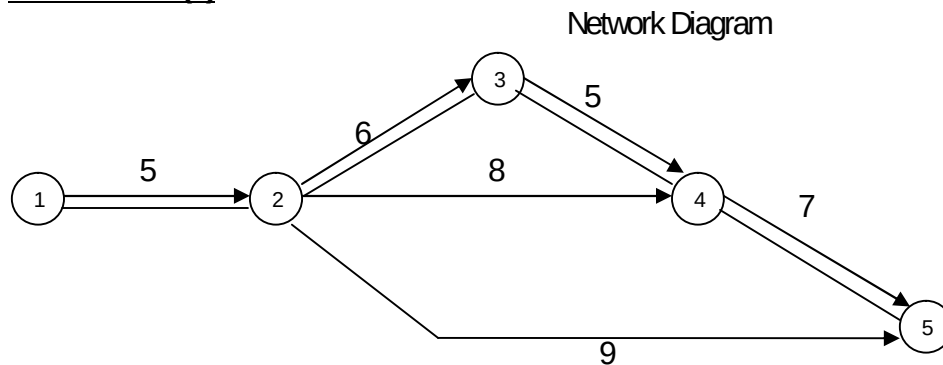
2. STATEMENT SHOWING ACTIVITIES, COSTS, COST DRIVERS & COST/ DRIVER

Activity	Activity Cost Pool	Cost Driver	Quantity of Cost Driver	ABC rate
Purchase order processing	5,91,750	No. of purchase orders	13,150	45 per order
Store delivery	9,60,000	No. of store deliveries	12,000	80 per delivery
Cartons dispatched to stores	7,92,135	No. of cartons dispatched	5,28,090	1.5 per dispatch
Shelf stocking at customer store	80,240	No. of hrs. of shelf Stocking	4,012	20 per hour

3. STATEMENT SHOWING OPERATING PROFIT USING ABC SYSTEM

Particulars	General Supermarket Chains	Drugstore Chains	Chemist Shops
Number of deliveries (A)	960	2,470	8,570
Average Revenue per delivery (B)	96,500	32,450	6,225
Average COGS per delivery (C)	94,650	31,800	5,950
Gross Margin per delivery (D) = (B) — (C)	1,850	650	275
Total Gross Margin (E) = (D) X (A)	17,76,000	16,05,500	23,56,750
Overheads / Other Costs:			
Customer Purchase Order processing	45,000 (1,000 x 45)	1,19,250 (2,650 x 45)	4,27,500 (9,500 x 45)
Store delivery	76,800 (960 x 80)	1,97,600 (2,470 x 80)	6,85,600 (8,570 x 80)
Cartons dispatched	3,60,000 (2,40,000 x 1.5)	2,77,875 (1,85,250 x 1.5)	1,54,260 (1,02,840 x 1.5)
Shelf stocking at customer store	38,400 (1,920 X 20)	2,4700 (1,235 X 20)	17,140 (857 X 20)
Total Overheads Costs (F)	5,20,200	6,19,425	12,84,500
Net Operating Income (E) — (F)	12,55,800	9,86,075	10,72,250

SOLUTION: 4 (b)



Critical path = 1 – 2 – 3 – 4 – 5 = 23 days

Various Computations:

Activity	NT	CT	ΔT	NC (₹) 000	CC (₹) 000	ΔC 000	ΔC/ ΔT 000
1 – 2	5	4	1/-	30	40	10	10
2 – 3	6	4	2/-	48	70	22	11
2 – 4	8	7	1	125	150	25	25
2 – 5	9	6	3	75	120	45	15
3 – 4	5	4	1	82	100	18	18
4 – 5	7	5	2	50	84	34	17
Total				410			

Total Cost of the project
 = Direct Cost + Indirect Cost + Penalty
 = 4,10,000 + (5,000 × 23) + (15,000 × 3)
 = 4,10,000 + 1,15,000 + 45,000
 = ₹ 5,70,000

Crashing Schedule for reducing project duration:

Actions	Impact on ₹ 000			
	D/ Cost	I/ Cost	Penalty	T/ Cost
Crash Activity(1 – 2) by 1 day	+ 10	– 5	– 15	– 10
Crash Activity (2 – 3) by 2 days	+ 22	– 10	– 30	– 18
Optimum time point (Total)	+ 32	– 15	– 45	– 28
Crash Activity (4 – 5) by 2 days	+ 34	– 10	--	+ 24
Crash Activity (3 – 4) by 1 day	+ 18	– 5	--	+ 13
Minimum time point (Total)	+ 52	– 15	---	+ 37

Table showing various paths:

Paths	Duration (in days)
1 – 2 – 3 – 4 – 5	23*/ 22*/ 20*/18*/17*
1 – 2 – 4 – 5	20/ 19/ 19/ 17/ 17*
1 – 2 – 5	14/ 13/ 13/ 13/ 13

* indicates critical path

(i) Optimum Duration = 23 – 3 = 20 days

Minimum Cost = Total Cost – 28,000

= ₹ 5,70,000 – ₹ 28,000 = ₹ 5,42,000

(ii) Minimum Duration = 20 – 3 = 17 days

Cost at minimum duration = Minimum cost + 37,000

= ₹ 5,42,000 + ₹ 37,000 = ₹ 5,79,000

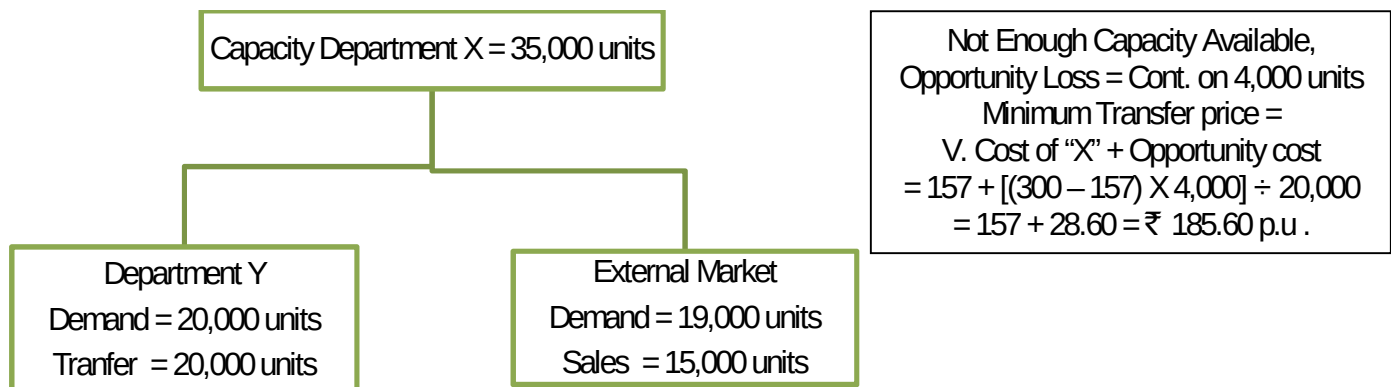
SOLUTION: 5 (a)

(i) Minimum Transfer Price in Situation 1



* Demand Department Y = 10,000 X 2

(ii) Minimum Transfer Price in Situation 2



(iii) Minimum Transfer Price in Situation 3



STATEMENT SHOWING CONTRIBUTION PER UNIT IN VARIOUS SITUATIONS (DIVISION X):

Particulars	External sales	Transfer to "Y" in Situation		
		I	II	III
Selling Price/ Transfer price P.u.	300	157	185.6	300
Less: Variable Cost P.u.	(157)	(157)	(157)	(157)
Contribution P.u.	143	0	28.6	143

STATEMENT SHOWING DIVISION X's PROFIT IN VARIOUS SITUATIONS:

Particulars	Situation		
	I	II	III
Contribution			
External Sales (15,000 X 143)	21,45,000	21,45,000	21,45,000
Internal Transfer	0 (20,000 X 0)	5,72,000 (20,000 X 28.6)	28,60,000 (20,000 X 143)
Total Contribution	21,45,000	27,17,000	50,05,000
Less: Fixed Cost	(20,62,000)	(20,62,000)	(20,62,000)
Profit	83,000	6,55,000	29,43,000

STATEMENT SHOWING CONTRIBUTION AND PROFIT IN VARIOUS SITUATIONS (DIVISION Y):

Particulars	Situation		
	I	II	III
Selling Price P.u.	1,200	1,200	1,200
Less: Variable Cost P.u.	(375)	(375)	(375)
Cost of Transfers (Division X)	(314) 157 X 2	(371.20) 185.60 X 2	(600) 300 X 2
Contribution P.u.	511	453.80	225
Units	10,000	10,000	10,000
Total Contribution	51,10,000	45,38,000	22,50,000
Less: Fixed Cost	(13,50,000)	(13,50,000)	(13,50,000)
Profit	37,60,000	31,88,000	9,00,000

SOLUTION: 5 (b)**STATEMENT SHOWING CLASSIFICATION OF COST**

Sl. No.	Item	Type of cost	Relevant (R) / Irrelevant (IR)
1	Food and Hotel expenses ₹ 3,750	Travelling Cost	IR (Sunk Cost)
2	(i) Material Z: 550 kg X ₹ 580/ kg	Historical Cost	IR
	(ii) Material Z: 550 kg X ₹ 650/ kg	Replacement Cost	R
3	(i) Engineer's salary ₹ 47,500	Incremental Fixed Cost	R
	(ii) Engineer's free time cost: 60/ 150 X 47,500	Idle Time Cost	IR
4	(i) Design Cost ₹ 30,000	Historical Cost	IR
	(ii) Design Cost ₹ 50,000	Opportunity Cost	R

SOLUTION: 6 (a)**(i) STATEMENT SHOWING PRODUCTION COST PER UNIT**

Particulars	Amount	Amount
Material A (6 X 16)	96	
Material B (3 X 10)	30	126
Direct Labour: Machine Shop (4 X 14)	56	
Direct Labour: Assembly Shop (2 X 7)	14	70
Variable Overheads 20% of Direct Labour	14	14
		210

Sales Revenue =	₹ 3,97,80,000
Profit @ 20% Revenue =	₹ 79,56,000
Cost of Sales =	₹ 3,18,24,000

Now, Let the Quantity Sold = x units

Total Cost of sales = Production Cost + V. Selling Cost + F. Selling Cost

$$3,18,24,000 = 210x + 6x + 7,20,000$$

So, x = 1,44,000 units i.e. Sales Units = 1,44,000 units.

And Selling Price P.U. = 3,97,80,000 / 1,44,000 = ₹ 276.25 p.u.

(ii) PRODUCTION BUDGET:

Particulars	Units
Sales Units	1,44,000
Add: Closing Stock (Finished Goods)	30,000
Less: Opening Stock (Finished Goods)	(25,000)
Production Units	1,49,000

(iii) RAW MATERIAL REQUIREMENT AND PURCHASE BUDGET:

Particulars	Material A in kg	Material B in kg
Requirement	8,94,000 (1,49,000 X 6)	4,47,000 (1,49,000 X 3)
Total Requirement	8,94,000	4,47,000
Add: Closing Stock	80,000	55,000
Less: Opening Stock	(75,000)	(40,000)
Raw Material Purchases Kg	8,99,000	4,62,000

SOLUTION: 6 (b)**(i) Market Size Variance**

$$= \text{Budgeted sales Quantity} \times \text{Actual Industry Growth Factor} \times (\text{Growth Component} \div \text{Total Growth in units})$$

$$= 4,00,000 \text{ Boxes} \times 3\% \times (1,40,000 \div 20,000) = 84,000 \text{ Favourable.}$$

(ii) Market Share Variance = Growth Component – Market Size Variance

$$= 1,40,000 \text{ F} - 84,000 \text{ F} = 56,000 \text{ F}$$

(iii) Productivity Variance = 58,000 F (Given)**(iv) Product Differentiation Variance = Market Share Variance + Price Recovery Variance**

$$= 56,000 \text{ F} + 1,64,000 \text{ F}$$

$$= 2,20,000 \text{ F}$$

RECONCILIATION STATEMENT

Particulars	₹
Budgeted Profit (2012)	10,80,000
Market Size Variance	84,000 F
Productivity Variance	58,000 F
Product Differentiation Variance	2,20,000 F
Actual Profit (2013)	14,42,000

SOLUTION: 6 (c)

Only Situation A is possible among the all situations. All other situations i.e. situation B, C and D are not possible.

- (i) **Reason for situations A and C:** In any given Assignment Problem question of inserting Dummy only arises where the problem is unbalanced i.e. No. of Workmen is not equal to No. of Jobs or in other words No. of Rows is equal to No. of Columns. For making problem balanced, we generally insert dummy row or column. For example in a problem we can have 4 rows and 3 columns or 4 rows and 2 columns, or 3 rows and 4 columns etc. For solving these problems we have to introduce 1 dummy column, 2 dummy columns and 1 dummy row respectively. We can say, dummy row or column is inserted to make no of rows and columns equal, we can only either have lesser no. of rows or lesser no. of columns, so it is not possible to have both dummy rows and dummy columns in a single problem, but we can surely have more than one dummy row or dummy column in a single problem. So situation A is possible while Situation C is not possible.
- (ii) **Reason for situations B and D:** In a Transportation problem, situation is different from Assignment; here Dummy row or column is inserted only when Total Demand is not equal to Total Supply. A Dummy row or column with the value of difference between demand and supply is inserted according to the requirement and all the difference is allocated to a single dummy row or dummy column, so here it is not possible to have multiple dummy rows or multiple dummy columns. Furthermore we can either have lesser Demand or lesser Supply, so either dummy row or dummy column will be there, we cannot have both together. So Situation B and D are not possible.

SOLUTION: 7 (a)

In the case of firm dealing with multi products, it would not be possible for it to analyze price- volume relationship for all of them. Pareto Analysis is used for analyzing the firm's estimated sales revenue from various products and it might indicate that approximately 80% of its total sales revenue is earned from about 20% of its products. Such analysis helps the top management to delegate the pricing decision for approximately 80% of its product to the lower level of management, thus freeing them to concentrate on the pricing decisions for products approximately 20% of which is essential for the company's survival. Thus, a firm can adopt more sophisticated pricing methods for small proportion of products that jointly account for 80% of total sales revenue. For the remaining 80% products, which account for 20% of the total sales value the firm may use cost, based pricing method.

SOLUTION: 7 (b)**Benefits of customer profitability analysis:**

1. It helps the supplier to identify which customers are eroding overall profitability and which customers are contributing to it. Different customers or groups of customers differ in their profitability. Different customers or categories of customers will each use different amounts of activities and so customer profitability profiles can be built up, and customers can be charged according to the cost to serve them.
2. It can help to provide a basis for constructive dialogue between buyer and seller to improve margins by increasing prices as not all customers cost the same to serve even if they require the same products. Some customers may be located a long way from the factory and transport may cost more. Other

customers may be disruptive and place rush orders that interrupt production scheduling and require immediate, special transport. Some customers need after sales service and help with technical matters, etc.

SOLUTION: 7 (c)

- (i) Investment
- (ii) Other Operating Costs
- (iii) Investment
- (iv) Other Operating Costs
- (v) Other Operating Costs
- (vi) Investment
- (vii) Throughput Contribution
- (viii) Investment

SOLUTION: 7 (d)

No, Vogel's Approximation Method uses the differences between the minimum and the next minimum costs for each row and column. This is the penalty or opportunity cost of not utilising the next best alternative. The highest penalty is given the 1st preference. This need not be the lowest cost. For example if a row has minimum cost as 3, and the next minimum as 2, penalty is 1; whereas if another row has minimum 4 and next minimum 6, penalty is 2, and this row is given preference. But least cost, give preference to the lowest cost cell, irrespective of the next cost. Vogel's Approximation Method will result in a more optimal solution than least cost. They will be the same only when the maximum penalty and the minimum cost coincide

SOLUTION: 7 (e)

In North West Corner Rule, we start making allocations from top left corner of the matrix by following demand and supply restrictions. And after it we eliminate the rows or columns for which demand or supply exhausted, and repeat the above steps with remaining cells, for remaining allocations. In this problem 1st allocation will be made at cell R_1C_1 and after doing this we have to eliminate the row or column for which demand or supply is exhausted, and if Column 1 is eliminated in this process, next allocation will be made R_1C_2 but on the other hand, if Row 1 is eliminated in this process, next allocation will be made at R_2C_1 . Hence it is not always necessary to have cell R_2C_1 in initial allocation by North West Corner Rule.

THE END



Best Of Luck!