

Face to Face Classes For **ADVANCED MANAGEMENT ACCOUNTING** (Costing & O.R.) **FOR CA FINAL**

At Gurgaon

By CA Mohit Arora

Batch starting from 2nd December 2013

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Why to join ADV. Management Accounting classes by Mohit Sir:

- Direct face to face interaction with students.
- 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.

What do Toppers say:



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
(Nov. 2012)
72 Marks in AMA
Highest in Gurgaon

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
(May 2012)
68 Marks in AMA
Second Highest
in Gurgaon

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.

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ADVANCED MANAGEMENT ACCOUNTING

SUGGESTED ANSWERS [CA FINAL]

NOVEMBER - 2013

SOLUTION :- (a)DETERMINATION OF MINIMUM SELLING PRICE PRODUCT

		(₹)
(1) MAT "A"	5,000 Kg. @ ₹15/kg. (Scrap value)	75,000
(2) Mat "B"	8,000 Kg. @ ₹25/kg. (Purchase price)	2,00,000
(3) Other hardware items		10,000
(4) Dept. X (Labour)	5 men @ ₹7,000	35,000
(5) Dept. Y (M. Hrs.)*	idle capacity	Nil
(6) Pattern & specifications (minimum selling price)	after use - i.e. (15,000 - 2,000)	13,000
-	Relevant Cost (Price to be quoted)	<u>3,33,000</u>

* It is assumed machine related costs are fixed in nature & only per hour absorption cost is given here and there will not be any change in the cost if use spare capacity. Answer could be different if machine related costs are assumed variable/hr.

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SOL- 1(b) :-

- (i) :- No, having two "0" in a single row does not always mean that the values of original matrix are same for respective cells, because we can also have this situation in case one value is row minimum and after row operations, another value of same row is column minimum for corresponding Column Operations.
- (ii) As the question says itself, final solution has been reached and the value of assignment in final solution lies at a_{24} and a_{32} , that's why we can say 'Row 2' and 'Row 3', as well as 'Column 4' and 'Column 2' are assigned and remaining assignments will not be from them, that's why remaining solutions may be either ' a_{11} and a_{43} ' or ' a_{13} and a_{41} '.

Solution 1C1 :- Budgeted overheads at 5,000 units

Variable Overheads -

	₹
Overhead A ($12 \times 2 \times 5000$)	1,20,000
Overheads B* (25×5000)	1,25,000

Fixed Overheads -

Overhead B*	40,000
Overhead C ($12.5 \times 2 \times 4000$)	1,00,000
Total overheads	<u>3,85,000</u>

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★ Segregation of overhead B

$$V/O \text{ head P.U.} = \frac{1,90,000 - 1,40,000}{6,000 - 4,000} = ₹25 \text{ P.U.}$$

$$\begin{aligned} f/O \text{ heads} &= \left. \begin{aligned} &1,40,000 - (4,000 \times 25) \\ &\text{or} \\ &1,90,000 - (6,000 \times 25) \end{aligned} \right\} = ₹40,000 \end{aligned}$$

Solution 1 (d) :-

STATEMENT SHOWING CONTRIBUTION P.U., MAXIMUM PRODUCTION/SALES and TOTAL CONTRIBUTION

PRODUCT	A	B	C	D
Selling price (P.U.)	40	50	60	70
V/Cost P.U.	(30)	(20)	(20)	(30)
Contribution P.U.	10	30	40	40
Labour Hrs. Req. (P.U.)	1	1.25	1.25	2
Maximum Production (1000/L.Hrs. P.U.)	1000	800	800	500
Maximum Sales (units)	1000	600	800	600
Possible Sales (units)	1000	600	800	500
Total Contribution (Sales x Cont. P.U.)	10,000	18,000	32,000	20,000

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Opportunity Cost (Cost of next best alternative forgone)

for A = ₹ 32,000
 B = ₹ 32,000
 C = ₹ 20,000
 D = ₹ 32,000

Solution 2(a):

- (i) penetration pricing
- (ii) penetration pricing
- (iii) Skimming pricing
- (iv) Any price (perishable commodity)

Solution 2(b):

RANDOM NUMBER TABLE

DAILY DEMAND	PROBABILITY	CUMULATIVE PROBABILITY	RANGE
0	0.01	0.01	00-00
20	0.15	0.16	01-15
25	0.30	0.46	16-45
35	0.40	0.86	46-85
40	0.10	0.96	86-95
45	0.04	1.00	96-99

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SIMULATION TABLE (PURCHASE - 35 BREADS/DAY)

DAY	R. NO.	DEMAND	O/STOCK	PURCHASE	SALES	C/STOCK	WASTE	PROFIT
1	58	35	5	35	35	0	5	60
2	80	35	0	35	35	0	0	140
3	51	35	0	35	35	0	0	140
4	09	20	0	35	20	15	0	80
5	47	35	15	35	35	0	15	(100)
6	26	25	0	35	25	10	0	100
7	64	35	10	35	35	0	10	(20)
8	43	25	0	35	25	10	0	100
9	26	40	10	35	40	0	5	80
10	25	25	0	35	25	10	0	100
Total profit								<u>680</u>

★ Profit = (Sales × 4) - (Waste × 16)

Solution 2(c)(i) ⇒ This is a valid recommendation made by the accountant, in a manufacturing organisation it is very important to control inventory by breaking into identifiable parts such as raw materials, WIP, Finished goods etc. So that individual control can be implemented over each item.

Solution 2(c)(ii) ⇒ Not valid, this would encourage employees to produce more and more goods regardless of demand and sales and this will result into higher inventory of finished goods, against JIT Principle.

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Solution - 2(c) (iii) : It is very important to identify idle time variances and labour efficiency variances because it helps us in controlling cost through identification of reasons for difference between standard and actual performance. But as the question suggests, the objective is to increase production by eliminating idle time & labour inefficiency, this would result in high closing stock, in case sufficient demand is not there. So, under JIT approach production should be according to the demand, and remaining time can be used in other ways, like training, machine maintenance etc. So, in JIT approach it is not correct to increase production for reducing idle time.

Solution 2(c) (iv) : This is also not a valid recommendation. In a multiproduct production, production set up time will not be computed according to the manner suggested in the question. i.e.

$$\text{Machine set up time/machine} = \frac{\text{Aggregate set up time for all new machines}}{\text{Total no. of machine}}$$

Instead machine set up time for every product can be identified, so that raw materials requirement for every product can be identified individually for better functioning of JIT.

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Solution → 3(a)(C) STATEMENT OF PROFIT/FLIGHT (CURRENT SITUATION)

Sales price/ticket (A) ₹ 5,000

V/ Cost(i) Commission to travel agent
(10% of fare) 500

(ii) Food Cost 300

Total v/cost / ticket (B) 800

Contribution/ticket (C) = (A) - (B) ₹ 4,200

NO. of passengers- 240

Total Contribution-

(D) = (C) × NO. of passengers ₹ 10,80,000

Fixed cost/flight

(i) Fuel 90,000

(ii) Annual lease cost/flight 2,00,000

(iii) Service cost 40,000

(iv) Flight crew salary 48,000

Total fixed cost/flight = (E) ₹ 3,78,000

Profit/flight (D - E) 6,30,000

(C) Break even no. of passengers = $\frac{3,78,000}{4,200}$
= 90 passengers

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(iii) $\Rightarrow$ If Haltgo Ltd.'s offer is accepted, fly away Ltd. has the following things under consideration:-

(a) First of all it needs to reserve 50 seats for (D to B) Sector.

(b) Now it will have only 210 seats ($260 - 50$) available for existing customers i.e. (A - B) sector. But the current demand is 215 seats ($240 - 25$). So company should forgo demand of 5 seats to make sure availability of 50 seats at (D to B) sector.

(c) Now all these 50 seats are sold to passengers travelling from (B to D) sector. Although maximum 60 seats could be sold but flyaway Ltd. is having only 50 seats.

Considering the above analysis, Fly away Ltd. will operate in following manner.

- ① Take-off from A with 260 passengers out of which 210 are for (A to B), and 50 are for (A to D)
- ② stop at sector D - leave 50 passengers and take 50 new passengers for (D to B) sector.

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Now Relevant data will be as under:-

STATEMENT OF PROFITABILITY (Per				
SECTOR	(A - B)	(A - D)	(D - B)	Total
Price/ticket	5,000	3,000	2,700	
v/cost				
food	(300)	(300)	-	
Snacks	(200)		(200)	
Commission	(500)	(300)	-	
Contribution/ ticket	<u>4,000</u>	<u>2,400</u>	<u>2,500</u>	
No of seats	210	50	50	
Total Contribution (A)	<u>8,40,000</u>	<u>1,20,000</u>	<u>1,25,000</u>	<u>10,85,000</u>
Fixed Cost/flight				
Fuel-				1,35,000
Annual lease				2,00,000
Services Cost				40,000
Flight crew salary				48,000
Additional Cost				19,000
Total fixed Cost/flight (B)				<u>4,42,000</u>
Profit/flight (A) - (B)				6,43,000

As the profit/flight increases by ₹ 13,000 (6,43,000 - 6,30,000), the Company should accept the offer.

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Solution 3(b) :- Limitations of Uniform Costing:

- ① Common principles and procedures :- Uniform costing requires laying down of uniform principles and procedures. Since the individual circumstances of each concern varies to a great extent, bringing uniformity in procedures, practices etc. poses serious problems.
- ② Lack of trust and Confidence :- The member units particularly when independently managed may not have the feeling of mutual trust & Confidence. Thus the system may not operate successfully.
- ③ Non-disclosure of technical and Cost information :- The member concerns usually do not provide total information regarding cost and technical procedures. Thus the system may not prove to success.
- ④ Rigidity :- Flexibility of approach is difficult to be maintained. The Common prices fixed may not meet the requirements of all & sundry.
- ⑤ Monopoly :- Member units may fix up monopoly prices and thus exploit the consumers. Thus in a bid to avoid cut throat competition, cut throat prices from the point of view of customers may be charged.

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- ⑥ High Cost $\Rightarrow$ A comparatively small concern may find the system expensive, since the system to be adopted by the all members, has to be uniform irrespective of their size.
- ⑦ Distortion of costs $\Rightarrow$ Cost computed under uniform costing system may not be representative of all concerns. Thus the cost may be distorted and may not give a correct picture in specified cases.

Ans-4(a) $\Rightarrow$ As the question says transfer prices will remain confidential. So divisions 'y' and 'z' will be able to procure goods from division 'x' at different transfer prices. So maximum transfer prices will be $\Rightarrow$

$$\begin{aligned} \text{For division 'y'} &= [\text{External purchasing price} + \text{External modification cost}] - \text{internal modification cost} \\ &= [(23+3) - 2] = ₹ 24 \text{ P.U.} \end{aligned}$$

$$\text{for division 2} = [(23+3) - 1] = ₹ 25 \text{ P.U.}$$

Minimum transfer price for div 'x' (assuming usage of idle capacity only)

= Variable cost

$$= 8 + 4 + 2 = ₹ 14 \text{ P.U.}$$

(this price will be applicable for first 1000 units)

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For transferring units more than 1000 division 'x' has ~~been~~ to install additional capacity for ~~which~~ which it will want to recover additional fixed cost i.e. (₹ 45,000)

Now we will decide best strategy for each division.

① For Division 'z'
~~==X==X==X==X==~~

(i) To increase its capacity or not $\Rightarrow$ for increasing its sales by 2,000 units (5,000 - 3,000) even if it is not able to procure materials from division 'x'.

BEP for additional fixed cost = $\frac{\text{Additional fixed cost}}{\text{Contribution per unit}^*}$

$$= \frac{23,100}{14} = 1650 \text{ units}$$

* Contribution per unit = $[90 - (40 + 8 + 2 + 23 + 3)]$

$\downarrow$

Purchase price of 'x', if purchased from outside.

In this case 'z' should ~~buy~~ install further capacity as BEP is 1650 units, and additional sales potential is 2,000 units which is more than BEP.

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- (ii) For transfers from division 'x' = 'z' would like to take transfers from division 'x' if Transfer price is less than or equal to ₹25 P.U. (maximum transfer price for 'z')

② STRATEGY FOR DIVISION 'y'

- (i) Regarding increase in capacity $\Rightarrow$ for increasing sales by 2,000 units (as even after capacity increase 'y' will not be able to fulfill complete demand of the product), even if it purchases materials 'x' from outside.

$$\text{BEP to recover additional fixed cost} = \frac{\text{Additional f/cost}}{\text{Contribution/unit}^*} = \frac{9000}{9} = 1000 \text{ units}$$

$$* \text{Contribution/unit} = [65 - (22 + 6 + 2 + 23 + 3)]$$

Purchase price of 'x', if purchased from outside.

In this case also 'y' should install additional capacity as BEP is less than additional sales potential (2000 units) (1000)

- (ii) Regarding transfers from 'x' $\Rightarrow$ 'y' would also like to take transfers from 'x' if the transfer price is less than or equal to ₹24 P.U. (Maximum T/Price)

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③ STRATEGY FOR DIVISION 'X'

c) Regarding increase in Capacity $\Rightarrow$

Additional fixed Costs = ₹45,000

Additional Capacity in units = 6,000

minimum Transfer price for division 'X' after installing additional Capacity = ~~Edut~~

$$\begin{aligned}
 &= \text{V/Cost} + \text{f/Cost} \\
 &= ₹14 + ₹7.5 \text{ (45,000/6000)} \\
 &\Rightarrow ₹21.5 \text{ P.u.}
 \end{aligned}$$

If divisions 'y' and 'z' are ready to take transfers at this price, division 'x' should increase its capacity and transfer products to div. y and z

DECISION $\Rightarrow$ After analysing the individual strategies we can see, that individual strategies are not Contradicting, so we can say here each division should follow its individual Capacities Strategy. In this case each division should increase its Capacity. Division 'y' & 'z' should take transfers from division 'x' as minimum Transfer price of 'x' is less than the maximum transfer prices of 'y' and 'z'. Company as a whole will also be benefitted by adopting these strategies

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Ans-4(b)(i) : As per question, input materials is procured from different suppliers. This material (meta) is used for sculpting purpose. If the Composition of Raw material effects the way or manner by which it is to be converted into final product, i.e. there can be different ways of conversion of raw materials having different Compositions, the labourers cannot have the learning effect, but if it does not so, i.e. type of raw material does not effect the way it is converted into final product, learning curve may be applied.

Ans-4(b)(ii) : As per questions, labourers are frequently changed during production process, they will not get the opportunity for learning hence learning curve will not apply.

Ans-4(b)(iii) : Learning Curve does not apply on skilled workers who are doing repetitive work. So learning curve will not apply in this case.

Ans-4(b)(iv) : Learning curve theory is applicable on labour cost generally, but it can be applied on overheads also where overheads are linked with labour hours i.e. with increase or decrease in labour hours, overheads also increase or decrease. In this question if overheads (indirect material) is linked with the usage of direct labour hours, learning curve theory can be applied and standards can be set with the help of this approach.

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Ans: 5 (a) : working note:

Labour Rate variance = (Std. Rate - Actual Rate) x Actual Hrs.
(S/skilled workers) Paid.

$$160 = (3 - 2) \times \text{Actual Hrs. paid}$$

Actual Hrs. paid = 160 Hrs. to S/skilled workers.

Now Available working hrs. per worker per week = 40 Hrs.

$$\therefore \text{No. of S/skilled workers} = 160/40 = 4 \text{ workers}$$

(1) No. of workers - (Actual)

S/skilled = 4 (computed above)

U/skilled = $4/2 = 2$ workers.

Skilled = $9 - (4 + 2) = 3$ workers

(ii) Total gang variance = $\left(\frac{\text{Actual Hrs.}}{\text{in std. Ratio}} - \frac{\text{Actual Hrs.}}{\text{used}} \right) \times \text{Std. Rate}$

$$\text{Skilled} = \left(\frac{160}{3} - \frac{120}{1} \right) \times 6 = 240 \text{ F}$$

$$\text{S/skilled} = \left(\frac{120}{4} - \frac{160}{3} \right) \times 3 = 120 \text{ A}$$

$$\text{U/skilled} = \left(\frac{80}{2} - \frac{80}{1} \right) \times 1 = \text{Nil}$$

120 F

* Actual Hrs. in

$$\text{Skilled} = 3 \times 40 = 120$$

$$\text{S/skilled} = 4 \times 40 = 160$$

$$\text{U/skilled} = 2 \times 40 = 80$$

360

* Actual Hrs in std. Ratio

$$= 360/3 \times 4 = 160$$

$$= 360/4 \times 3 = 120$$

$$= 360/2 \times 2 = 80$$

360

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$$\text{Q11) Efficiency variance} = \left(\frac{\text{Std. Hrs. for Actual output}}{\text{Actual output}} - \frac{\text{Actual Hrs.}}{\text{in Std. Ratio}} \right) \times \text{Std. Rate}$$

$$\begin{aligned} \text{Skilled} &= \left(\frac{120 - 160}{90} \right) \times 6 = 240 \text{ A} \\ &\left(\frac{90 - 120}{90} \right) \times 3 = 90 \text{ A} \\ &\left(\frac{60 - 80}{90} \right) \times 1 = 20 \text{ A} \\ &\underline{350 \text{ A}} \end{aligned}$$

* std. Hrs. for Actual output

$$\text{Skilled} = \frac{270}{9} \times 4 = 120$$

$$\text{S/Skilled} = \frac{270}{9} \times 3 = 90$$

$$\text{U/Skilled} = \frac{270}{9} \times 2 = 60$$

$$\text{Qiv) Total Labour Rate variance} = (\text{Std. Rate} - \text{Actual Rate}) \times \text{Hrs Paid}$$

$$\text{Skilled} = (6 - 7) \times 120 = 120 \text{ A}$$

$$\text{S/Skilled} = (3 - 2) \times 160 = 160 \text{ F}$$

$$\text{U/Skilled} = (1 - 2) \times 80 = 80 \text{ A}$$

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Ans: 5 (b) (i) $\Rightarrow$ yes, the Solution is feasible, No Artificial variable in the final Solution. There is not any (+) value in $(C_j - z_j)$ Row, thus this solution is optimal solution also.

Ans: 5 (b) (ii) $\Rightarrow$ Since, one of Non basic variable i.e. (x_2) value in $(C_j - z_j)$ Row = '0', so there exist one alternate solution also and this will be Computed as under: $\Rightarrow$

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$C_j \rightarrow$			6	4	10	0	0	0	
$\downarrow$	B.V.	Qty.	x_1	x_2	x_3	s_1	s_2	s_3	Ratio
0	s_1	400	0	$4/3$	0	1	$-1/3$	0	300
6	x_1	400	1	$2/3$	2	0	$1/3$	0	600
0	s_3	400	0	$5/3$	0	0	$-2/3$	1	240
$Z_j \rightarrow$		2400	6	4	12	0	2	0	
$C_j - Z_j$			0	0	-2	0	-2	0	
0	s_1	80	0	0	0	1	$1/5$	$-4/5$	
6	x_1	240	1	0	2	0	$3/5$	$-2/5$	
4	x_2	240	0	1	0	0	$-2/5$	$3/5$	
$Z_j \rightarrow$		2400	6	4	12	0	2	0	
$C_j - Z_j$			0	0	-2	0	-2	0	

Alternate solution will be

$$x_1 = 240$$

$$x_2 = 240$$

$$Z = 2400$$

Workings-

s_1 Row

$$\begin{aligned} 400 - 240 \times 4/3 &= 80 \\ 0 - 0 \times 4/3 &= 0 \\ 4/3 - 1 \times 4/3 &= 0 \\ 0 - 0 \times 4/3 &= 0 \\ 1 - 0 \times 4/3 &= 1 \\ -1/3 - (-2/5) \times 4/3 &= 1/5 \\ 0 - 3/5 \times 4/3 &= -4/5 \end{aligned}$$

x_2 Row

$$\begin{aligned} 400 - 240 \times 2/3 &= 240 \\ 1 - 0 \times 2/3 &= 1 \\ 2/3 - 1 \times 2/3 &= 0 \\ 2 - 0 \times 2/3 &= 2 \\ 0 - 0 \times 2/3 &= 0 \\ 1/3 - (-2/5) \times 2/3 &= 3/5 \\ 0 - 3/5 \times 2/3 &= -2/5 \end{aligned}$$

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~~==X==X==X==~~ Ans-5(b)(i) $\Rightarrow$ Shadow prices for one unit $S_2 = ₹2$

~~==X==X==X==~~ Ans-5(b)(iv) $\Rightarrow$ Customer should increase the price of x_3 by ₹2 P.U. at least, so that profit of company will remain unchanged, As company is incurring loss of ₹2 P.U. of x_3 produced, according to the (Cj-zj) Row of the final solution.

~~==X==X==X==~~ Ans-5(b)(v) $\Rightarrow$ We can easily compute total qty. of S_2 with the help of shadow prices -

Since, $2400 = \text{Qty. of } S_2 \times \text{shadow price of } S_2$

$$2400 = \text{Qty} \times 2$$

$$\text{Qty } S_2 = 1200 \text{ units}$$

Now with the help of iteration given in the question we can compute key element and the same will be -

$$\frac{\text{Qty. of } S_2}{\text{Qty. of } x_1} = \frac{1200}{400} = 3 \text{ units of } S_2 \text{ Required for 1 unit of } x_1$$

Now we can easily compute value of Row related to S_2 in original matrix as under:-

$$x_1 = 1 \times 3 = 3$$

$$x_2 = \frac{2}{3} \times 3 = 2$$

$$x_3 = 2 \times 3 = 6$$

$$S_1 = 0 \times 3 = 0$$

$$S_2 = \frac{1}{3} \times 3 = 1$$

$$S_3 = 0 \times 3 = 0$$

$$\text{Qty.} = 400 \times 3 = 1200$$

Now the original Inequation for S_2 will be:-
 $3x_1 + 2x_2 + 6x_3 \leq 1200$

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Ans: (6a) :- STATEMENT OF ACTIVITY, COST, COST DRIVERS, NO. of COST DRIVERS, and Cost/driver

Activity	Set up	Stores- Receiving	Inspection	Material Handling	Total
Cost (£)	20,000	15,000	10,000	2,592	47,592
machine operation & Maint. enance (4/3/2)	28,000	21,000	14,000	-	63,000
Total	48,000	36,000	24,000	2,592	1,10,592

Cost driver	No. of Production Runs	Requisition Raised	No. of Production Runs	Orders executed
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NO. of Cost drivers (w.N.V)	96	200	96	192
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Cost/driver	500	180	250	13.5
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Working Note - 1 STATEMENT of NO. of Cost drivers -

Product	A	B	C	D	Total
① Production (units)	720	600	480	504	
② Production Runs- (Production/24)	30	25	20	21	96
③ Requisition Raised (given)	50	50	50	50	200
④ Orders executed (Production/12)	60	50	40	42	192

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STATEMENT OF OVERHEADS COST UNDER ABC

PRODUCT	A	B	C	D	Total
① Setup cost @ ₹ 500/set up	15,000 (500x30)	12,500 (500x25)	10,000 (500x20)	10,500 (500x21)	48,000
② stores receiving @ ₹ 180/gr. raised	9,000 (180x50)	9,000 (180x50)	9,000 (180x50)	9,000 (180x50)	36,000
③ Inspection @ ₹ 250/Set up	7,500 (250x30)	6,250 (250x25)	5,000 (250x20)	5,250 (250x21)	24,000
④ Material handling @ ₹ 13.5/order	310 (13.5x60)	675 (13.5x50)	540 (13.5x40)	567 (13.5x42)	2,592
Total	32,310	28,425	29,540	25,317	1,10,592
Production (units)	720	600	480	504	
Overhead P.U.	44.875	47.375	51.125	50.232	

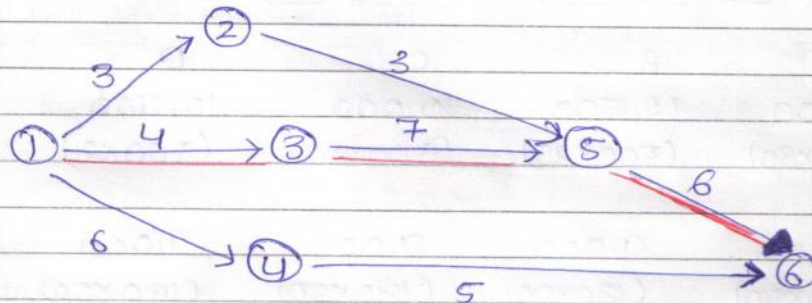
Ans- 6 (b) $\Rightarrow$ TABLE SHOWING VARIOUS COMPUTATIONS

Activity	t_o	t_p	t_m	$t_e = \frac{t_o + t_p + 4t_m}{6}$	Variance $(\frac{t_p - t_o}{6})^2$
(1-2)	1	5	3	3	4/9
(1-3)	1	7	4	4	1
(1-4)	2	10	6	6	16/9
(2-5)	2	8	3	3	1
(3-5)	3	15	6	7	4
(4-6)	2	8	5	5	1
(5-6)	2	14	5	6	4

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(i) Net work diagram with expected duration be



CRITICAL PATH = ① → ③ → ⑤ → ⑥ = 17 days

Project S.D. = $\sqrt{\text{project variance}} = \sqrt{1+4+4} = 3$

(ii) value of $Z = \frac{22-17}{3} = \frac{x-\bar{x}}{\text{S.D.}} = 1.67$

value of Z under normal curve = 0.9505

So probability of not meeting the estimated time will be = $1 - 0.9505$

= 0.0475 or 4.75%

(iii) value of Z at 99% probability = 2.33

$$2.33 = \frac{x - 17}{3}$$

$x = 23.33$ days. Ans

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Ans: → 7(a) → Two different methods used Commonly in Service Sector:-

- (i) Job Costing → Services can be classified into small jobs and cost of a particular job (service) is obtained by assigning costs to a distinct identifiable service. In service sector like Accounting firms, Advertising Campaigns etc., job costing method is used.
- (ii) Process Costing → In process costing system the cost of a service obtained by assigning costs to masses of similar unit and then completing unit cost on average basis. Retail banking, postal delivery, Credit Card etc. use the process costing system.

Ans: → 7(b) →

- (i) Primary Activities of value chain →
 - (a) Order processing & distribution.
 - (b) Transforming Inputs to final product
 - (c) Communication pricing and channel management
- (ii) Support Activities of value chain
 - (a) Installation, repairs and parts replacements.
 - (b) Purchase of raw materials & other consumable stores.
 - (c) Selection, promotion, appraisal and employees relations.
 - (d) materials handling and warehousing.
 - (e) General management, planning, finance & accounts.

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Ans 7(d) $\Rightarrow$ Degeneracy $\Rightarrow$ If a basic feasible solution of a transportation problem with 'm' origins and 'n' destinations has fewer than $(m+n-1)$ allocations (occupied cells), the problem is said to be degenerative transportation problem.

(ii) Prohibited Routes $\Rightarrow$ Sometimes in a transportation problem there may be restrictions that may require as, from a particular factory, there cannot be any transportation to a particular warehouse. This situation is called prohibited Routes.

Ans-7(d) $\Rightarrow$ (i) Conversion Cost
(ii) Committed Cost
(iii) Incremental Cost
(iv) Sunk Cost

Ans-7(e) $\Rightarrow$

(i) Traditional Budgeting $\Rightarrow$ As Activity level is going to marginally increase from previous year. so here we can take previous year base with slight changes Required for inflation etc.

(ii) zero base Budgeting $\Rightarrow$ As sales manager's personal assessment is that the sales will decrease in the next year, while past trend may be showing increase. In that case he will not be supported by past data and the budget will be zero base.

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(iii) Traditional Budgeting $\Rightarrow$ As the performance of functional managers will be evaluated with the help of budgets based on past trends, easily. we can take a view of past expenses incurred in various divisions and evaluate the performance of current year easily.

(iv) Zero Base Budgeting $\Rightarrow$ Where we are facing limitations on resources, all the resources should be utilised in an efficient manner. Allocation of resources on the basis of past will not give better results. We have to check reasonability of each and every use of resources.

