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PAPER – 5: ADVANCED MANAGEMENT ACCOUNTING

Question No. 1 is compulsory.

Answer any five questions from the remaining six questions.

Working Notes should form part of the answer.

No statistical table will be distributed along with the question paper.

Graph papers will be provided.

Question1

- (a) *A shoe manufacturer has a net profit of ₹ 25 per pair on a selling price of ₹143. He is producing 6,000 pairs per annum which is 60% of the potential capacity. The cost per pair is as under:*

	₹
<i>Direct Materials</i>	35.00
<i>Direct Wages</i>	12.50
<i>Works Overheads (50% fixed)</i>	62.50
<i>Administrative Overheads (75% fixed)</i>	6.00

During the current year the manufacturer also estimates demand of 6,000 pairs but anticipates that the fixed charges to go up by 10% while the rate of direct labour and direct materials will increase by 8% and 6% respectively. But he has no option of increasing the selling price. Under this situation he obtains an offer to utilise further 20% of capacity. What minimum price will you recommend to ensure an overall profit of ₹ 1,67,300? (5 Marks)

- (b) *ABC Ltd. has supermarkets located in most towns and cities. Over the last few years, profits have fallen. ABC Ltd. has recognized that customer care has been paid insufficient attention. ABC Ltd. has now realized the importance of the customer experience at its supermarkets.*

ABC Ltd. has introduced a loyalty card scheme that rewards customers with discount vouchers based on their spend and buying patterns at supermarkets in an attempt to earn the loyalty of its customers.

The management of ABC Ltd. is considering the introduction of a Balanced Scorecard approach to manage the performance of its stores.

Required:

Recommend an objective and a suitable performance measure for each of three non-financial perspectives of a Balanced Scorecard that ABC Ltd. could use to support its

new strategy of improving the customer experience. You should state three perspectives, an objective and a performance measure for each one of the three perspectives. (5 Marks)

(c) *State the types of errors in logical sequencing that may arise while drawing a Network Diagram. (5 Marks)*

(d) *An IT company produces a CD, particulars of which are detailed below:*

	₹
Annual Production (Units)	40,000
Cost per Annum (₹)	
Material	1,00,000
Other Variable Cost	1,20,000
Fixed Cost	80,000
Apportioned Investment (₹)	3,00,000

Determine the unit selling price under two strategies mentioned below.

Assume company's tax rate as 30%.

(i) *20% return on investment.*

(ii) *6% profit on list price, when trade discount is 40%. (5 Marks)*

Answer

(a) **Computation of Profitability at 6,000 Pairs Activity**

	Existing Price Level Amount (₹)	Revised Price Level Amount (₹)
Selling Price <i>per pair</i>	143.00	143.00
Variable Costs:		
Direct Materials	35.00	37.10 (₹35 × 1.06)
Direct Wages	12.50	13.50 (₹12.5 × 1.08)
Works Overhead (50% of ₹62.50)	31.25	31.25
Administration Overhead (25% of ₹6)	1.50	1.50
Total Variable Cost <i>per pair</i>	80.25	83.35
Contribution <i>per pair</i>	62.75	59.65
Total Contribution ... (A)	3,76,500	3,57,900
Fixed Costs		
Works Overhead (6,000 pairs × ₹31.25)	1,87,500	2,06,250 (₹1,87,500 × 1.1)

Administration Overhead (6,000 pairs × ₹4.50)	27,000	29,700 (₹27,000 × 1.1)
Other Fixed Overheads *	12,000	13,200 (₹12,000 × 1.1)
Total Fixed Costs ... (B)	2,26,500	2,49,150
Profit ... (A) – (B)	1,50,000	1,08,750
Desired Profit	---	1,67,300
Additional Profit (₹1,67,300 – ₹1,08,750)	---	58,550
Additional Offer $\left(\frac{6,000}{60\%} \times 20\%\right)$		2,000 Pairs
Profit <i>per pair</i>		29.275

(*)

Other Fixed Overhead = Contribution – Profit – (Fixed Works Overheads + Fixed Administrative Overheads)

Selling Price *per pair* = Variable Cost *per pair* + Profit *per pair*

= ₹83.35 + ₹29.275

= ₹112.625 or ₹112.63

Therefore, minimum selling price per pair for the additional offer shall be ₹112.63



Selling price is ₹143 per pair and net profit is ₹25 per pair, hence, total cost per pair at the existing level should be ₹118 (₹143 – ₹25). However, the total cost per pair given is ₹116. It is assumed that balance ₹2 per pair (₹118 – ₹116) is **Other Fixed Overheads**. This question can also be solved by assuming difference of ₹2 as **Other Variable Costs** with an anticipation that it will not change in the revised situation.

(b)

Non- Financial Perspective	Objective	Performance Measure
Customer Perspective	Increase the customer loyalty. <i>Or</i> Retaining the existing customers.	Percentage of customers using loyalty cards. <i>Or</i> No. of discount vouchers redeemed.
Internal Business Perspectives	For customers to pay for goods in a reasonable time.	Time spent by customers in queuing to pay for products at a check out.

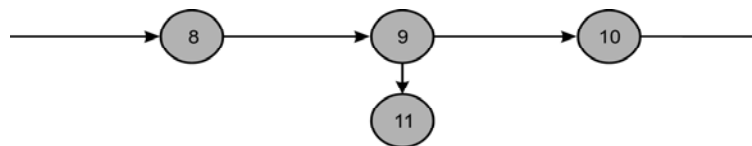
	<p style="text-align: center;"><i>Or</i></p> Paying proper attention to the customers and their product enquiries. <p style="text-align: center;"><i>Or</i></p> Provide necessary support to the existing loyal customers.	<p style="text-align: center;"><i>Or</i></p> Time spent by customers care executives in handling customers queries. <p style="text-align: center;"><i>Or</i></p> No. of times home delivery made.
Learning & Growth Perspectives	To have qualified staffs able to meet the needs of the customer. <p style="text-align: center;"><i>Or</i></p> Adding new products for new segments.	No. of staff training days. <p style="text-align: center;"><i>Or</i></p> No. of schemes launched.

(c) Generally three types of errors in logical sequencing may arise while drawing a network diagram, particularly when it is a complicated one. These are known as *looping*, *dangling* and *redundancy*.

- (i) **Looping**-Normally in a network, the arrow points are from left to right. This convention is to be strictly adhered, as this would avoid illogical looping. Looping error is also known as cycling error.



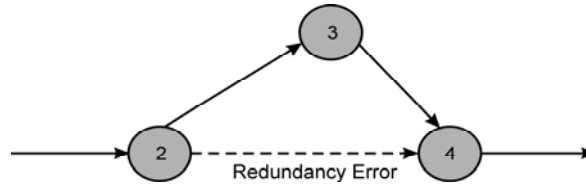
- (ii) **Dangling**- Activity which is not connected to any of the intermediate events or end event is called dangling activity. The situation represented by the following diagram is also at fault, since the activity represented by the dangling arrow 9-11 is undertaken with no result.



To overcome the problem arising due to dangling arrows, following rules may be adopted.

- (a) All events, except the first and the last, must have at least one activity entering and one activity leaving them, and
- (b) All activities must start and finish with an event.

- (iii) **Redundancy-** When dummy activities are inserted in a network diagram unnecessarily, this type of error is called error of redundancy. It is shown in the following figure:



- (d) (i) **Selling Price to Yield 20% Return on Investment**

Investment (₹)	3,00,000
Required ROI (after tax) 20% [(20% of ₹3,00,000)](₹)	60,000
Tax Rate	30%
After Tax Profit	70%
Pre Tax Profit [(₹60,000 ÷ 70) × 100] (₹)	85,714.29
Sales (Total Cost + Required Profit) {(₹1,00,000 + ₹1,20,000) + ₹80,000 + ₹85,714.29}	3,85,714.29
Number of Units Produced	40,000
Selling Price <i>per unit</i> (₹3,85,714.29 ÷ 40,000 units) (₹)	9.64

- (ii) **Selling Price to Yield 6% Profit on List Price, When Trade Discount is 40%-**

Let 'K' be the List Sales

$$\begin{aligned} \{\text{List Sales (1 - Trade Discount)} - \text{Total Cost}\} \times (1 - \text{Tax Rate}) &= 0.06K \\ \{K (1 - 0.40) - 3,00,000\} \times (1 - 0.30) &= 0.06K \\ \{0.60 K - 3,00,000\} \times 0.7 &= 0.06K \\ 0.36 K &= 2,10,000 \\ K &= ₹5,83,333.33 \end{aligned}$$

List Sales Price *per unit* is ₹14.58 $\left(\frac{₹ 5,83,333.33}{40,000 \text{ units}} \right)$

Net Selling Price *per unit* is ₹8.75 (₹14.58 – 40% of ₹14.58).

Question 2

- (a) A labour intensive product is made and sold by XY Ltd. Its labour force has a learning rate of 80%, applicable only to direct labour and not to variable overheads.

The cost per unit of the first product is as follows:

	₹
Direct Materials	20,000
Direct Labour (@ ₹8 per unit)	16,000
Variable Overheads	4,000
Total Variable Cost	40,000

XY Ltd. has received an order from P Ltd. for 4 units of the product. Another customer, Q Ltd. is also interested in purchasing 4 units of the product. XY Ltd. has the capacity to fulfill both the orders. Q Ltd. presently purchases this product in the market for ₹34,400 and is willing to pay this price per unit of XY Ltd. product. But P Ltd. lets XY Ltd. choose one of the following options:

- (i) A price of ₹33,000 per unit for the 4 units it proposes to take from XY Ltd.

OR

- (ii) Supply P Ltd.'s idle labour force to XY Ltd. for only 4 units of production, with XY Ltd. having to pay only ₹2 per labour hour to P Ltd.'s workers. P Ltd.'s workers will be withdrawn after the first 4 units are produced. In this case, XY Ltd. need not use its labour for producing P Ltd.'s requirements. P Ltd. assures XY Ltd. that its labour force also has a learning rate of 80%. In this option, P Ltd. offers to buy the product from XY Ltd. at only 28,000 per unit.

P Ltd. and Q Ltd. shall not know of each other's offer.

If both orders came before any work started, what is the best option that XY Ltd. may choose? Present suitable calculations in favour of your arguments. (9 Marks)

- (b) A cake vendor buys pieces of cake every morning at ₹4.50 each by placing his order one day in advance and sale them at ₹7.00 each. Unsold cake can be sold next day at ₹2.00 per piece and there after it should be treated as no value. The pattern for demand of cake is given below:

Fresh Cake:

Daily Sale	100	101	102	103	104	105	106	107	108	109	110
Probability	.01	.03	.04	.07	.09	.11	.15	.21	.18	.09	.02

One day old cake:

Daily Sale	0	1	2	3
Probability	.70	.20	.08	.02

Use the following set of random numbers:

Fresh Cake	37	73	14	17	24	35	29	37	33	68
One day old cake	17	28	69	38	50	57	82	44	89	60

The vendor adopts the following rule.

If there is no stock of cake with him at the end of previous day, he orders for 110 pieces otherwise he orders 100 or 105 pieces whichever is nearest actual fresh cake sale on the previous day. Starting with zero stock and a pending order of 105 pieces, simulate for 10 days and calculate vendor's profit. (7 Marks)

Answer

(a) Workings

Units	Average LabourHrs. /unit
1	2,000 (₹16,000 ÷ ₹8) [for first unit of production]
2	1,600 (80% of 2,000 hours)
4	1,280 (80% of 1,600 hours)
8	1,024 (80% of 1,280 hours)

Variable Cost *per unit* excluding Labour Cost:

(₹)

Material Cost = 20,000

Variable Overheads = 4,000

Variable Cost = 24,000

If both the orders came together, learning rate 80% applies and 8 units can be made, with average time of 1,024 hours per unit.

Cost to XY (₹)

Variable Cost excluding Labour = 24,000

Labour Cost (1,024 hrs. × ₹8/hr) = 8,192

= 32,192

Option-I

In this case,

Particulars	Q	P	Total
Selling Price p. u. (₹)	34,400	33,000	
Variable Cost p. u. (₹)	32,192	32,192	
Contribution p. u. (₹)	2,208	808	
No. of Units	4	4	
Contribution (₹)	8,832	3,232	

Option- II

If P Ltd supplies its labour. 80% learning curve will apply to 4 units each of XY Ltd. & P Ltd. Hence: hrs / unit = 1,280 (as calculated in the working note)

Particulars	Q	P	Total
Selling Price p. u. (₹)	34,400	28,000	
Variable Cost p. u. (₹) (Excluding Labour cost)	24,000	24,000	
Labour Cost p. u. (₹)			
1,280 hrs. × ₹ 8	10,240	--	
1,280 hrs. × ₹ 2	--	2,560	
Total Variable Cost p. u. (₹)	34,240	26,560	
Contribution p. u. (₹)	160	1,440	
Units	4	4	
Contribution (₹)	640	5,760	6,400

Decision

XY Ltd. should not take labour from P Ltd. It should choose Option-I.

(b)

Random No. Coding for Fresh Cake

No. of Cakes	Probability	Cumulative Probability	Random Numbers
100	0.01	0.01	00 – 00
101	0.03	0.04	01 – 03
102	0.04	0.08	04 – 07
103	0.07	0.15	08 – 14
104	0.09	0.24	15 – 23

105	0.11	0.35	24 – 34
106	0.15	0.50	35 – 49
107	0.21	0.71	50 – 70
108	0.18	0.89	71 - 88
109	0.09	0.98	89 - 97
110	0.02	1.00	98 - 99

Random No. Coding for One Day Old Cake

No. of Cakes	Probability	Cumulative Probability	Random Numbers
0	0.70	0.70	00 – 69
1	0.20	0.90	70 – 89
2	0.08	0.98	90 – 97
3	0.02	1.00	98 – 99

Let us simulate the sale of fresh and one day old cakes for the next ten days using the given random numbers / information.

Simulation Sheet

Day	R. No. of Fresh Cake	Fresh Stock	Demand	Sales Pcs.	Cl. Stock	Order Initiated	One Day Old Stock	R.N. of Old Cake	Sale of Old Cake Pcs.	Loss Pcs.
1	37	105	106	105	0	110	0	17	--	--
2	73	110	108	108	2	105	0	28	--	--
3	14	105	103	103	2	105	2	69	0	2
4	17	105	104	104	1	105	2	38	0	2
5	24	105	105	105	0	110	1	50	0	1
6	35	110	106	106	4	105	0	57	--	--
7	29	105	105	105	0	110	4	82	1	3
8	37	110	106	106	4	105	0	44	--	--
9	33	105	105	105	0	110	4	89	1	3
10	68	110	107	107	3	105	0	60	--	--
				1,054					2	11

Calculation of Vendor's Profit

	Amount (₹)
Sales of Fresh Cakes (1,054 Pcs. × ₹7)	7,378.00
Sale of One Day Old Cake (2 Pcs. × ₹2)	4.00
Total Sales Revenue	7,382.00
Less: Cost of Cakes Sold [₹4.50 × (1,054 + 2) Pcs.]	4,752.00
Less: Cost of Spoilt Cakes [₹4.50 × (11 + 3*) Pcs.]	63.00
Profit	2,567.00



* It is assumed that 3 Cakes of Closing Stock is **not** saleable.

Question 3

- (a) A market advertising firm desires to reach two type of audiences customer of annual income of more than ₹50,000 (target audience A) and customers with annual income of less than ₹50,000 (target audience B).

The total advertising budget is ₹2,000 crores. One programme of TV advertising costs ₹500 crores and one programme on Radio advertising costs ₹ 200 crores. Contract conditions ordinarily require that there should be atleast 3 programmes for TV and the number of programmes on radio must not exceed 5. Survey indicates that a single TV programme reaches 7,50,000 customers in target audience A and 1,50,000 in target audience B. One Radio programme reaches 40,000 customers in target audience A and 2,60,000 customers in target audience B.

Formulate this as a linear programming problem and determine the media mix to maximize the total reach using graphic method. (8 Marks)

- (b) On the basis of the following information determine the product-mix to give the highest profit if atleast two products are produced:

Product	X	Y	Z
Raw material per unit (kg)	20	12	30
Machine hours per unit (hours)	3	5	4
Selling price per unit (₹)	500	400	800
Maximum limit of production Unit	1,500	1,500	750

Only 9,200 hours are available for production at a cost of ₹20 per hour and maximum 50,000 kgs. of material @ ₹ 20 per kg., can be obtained.

(Only product mix quantities are to be shown, calculation of total profit at that product mix not required to be shown) (8 Marks)

Answer

- (a) Let 'x' be the number of programmes of T.V. advertising and 'y' denote the number of programmes of radio advertising.

Objective function-

One T.V. programme reaches 7,50,000 customers in target audience A and 1,50,000 customers in target audience B, whereas one radio programme reaches 40,000 customers in target audience A and 2,60,000 in target audience B. Since the advertising firm desires to determine the media mix to maximise the total reach, the objective function is given by

$$\text{Maximise } Z = (7,50,000 + 1,50,000)x + (40,000 + 2,60,000)y$$

$$\text{Or } Z = 9,00,000x + 3,00,000y$$

Condition-1-

One programme of T.V. advertising costs ₹500 Crores and that of Radio advertising costs ₹ 200 Crores. The total advertising budget is ₹2,000 Crores.

$$\text{Hence, } 500x + 200y \leq 2,000$$

$$\text{Or } 5x + 2y \leq 20$$

Condition-2-

Contract conditions require that there should be at least 3 programmes on T.V. and the number of programmes on Radio must not exceed 5.

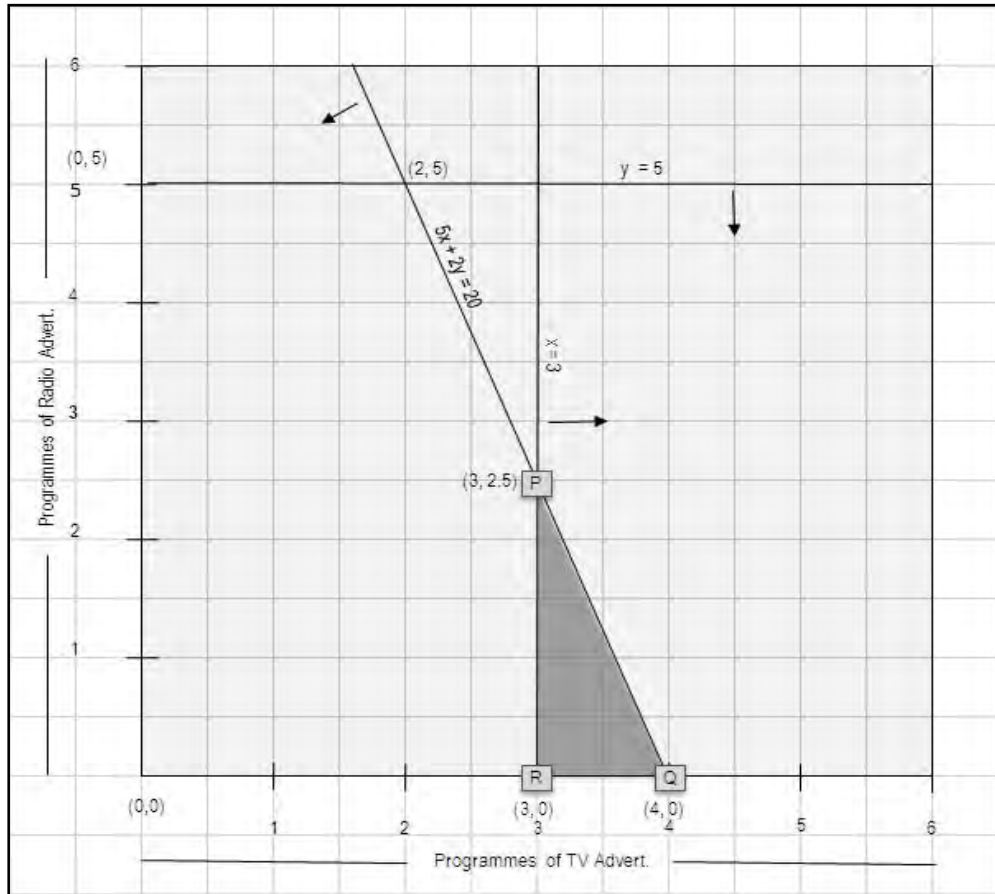
$$\text{Therefore, } x \geq 3$$

$$y \leq 5$$

The Linear Programming Model for the given problem is-

<p>Maximise</p> $Z = 9,00,000x + 3,00,000y$ <p><i>Subject to the Constraints:</i></p> $5x + 2y \leq 20$ $x \geq 3$ $y \leq 5$ <p>where $x, y \geq 0$</p>

The Graphical Solution for the problem is given below-



Intersection Points-

Point of intersection for lines	$x = 3$ and $5x + 2y = 20$ is P (3, 2.5)
Similarly, lines	$y = 5$ and $5x + 2y = 20$ intersect at point (2, 5)
Line	$x = 0$ meets $5x + 2y = 20$ at point (0, 10)
Line	$y = 0$ meets $5x + 2y = 20$ at point Q (4, 0)

The feasible region is given by the shaded area PQR, and the feasible points are P (3, 2.5), Q (4, 0) and R (3, 0).

Value of the Objective Function at the above mentioned feasible points is calculated below-

Point	Co-Ordinates of the corner points of the feasible region (value of x and y)	Value of the objective function $Z = 9,00,000x + 3,00,000y$
P	(3, 2.5)	34,50,000
Q	(4, 0)	36,00,000
R	(3, 0)	27,00,000

It can be seen that the value of Z is maximum at point Q (4, 0). Thus, solution to the given problem is: $x = 4$, $y = 0$ and Maximum $Z = 36,00,000$.

In other words, the advertising firm should give 4 programmes on TV and no programme on Radio in order to achieve a maximum reach of 36,00,000 customers.

(b) **Computation of Contribution per Key Factor(s) for Various Products**

Particulars	Products		
	X	Y	Z
Selling Price p. u. (₹)	500	400	800
Variable Cost p. u. (₹):			
Material	400 (₹20 × 20 Kg.)	240 (₹20 × 12 Kg.)	600 (₹20 × 30 Kg.)
Machine Charge	60 (₹20 × 3 hrs)	100 (₹ 20 × 5 hrs)	80 (₹20 × 4 hrs)
Total Variable Cost p. u. (₹)	460	340	680
Contribution p. u. (₹)	40	60	120
Ranking	III	II	I
Requirement of Material (Kg.)	20	12	30
Contribution per Kg.(₹)	2.00	5.00	4.00
Ranking	III	I	II
Requirement of Machine Hours (Hrs.)	3	5	4
Contribution <i>per hour</i> (₹)	13.33	12.00	30.00
Ranking	II	III	I

It is clear from the above ranking(s):-

- I. Contribution per Unit is maximum in case of product Y & Z.
- II. Contribution per Kg. of Raw Material also maximum in case of product Y & Z.
- III. Contribution per Machine Hour is maximum in case of product X & Z.

So product Z is common in all cases and priority shall be given for production of 'Z'. Balance resources should be divided between other two products X & Y.

Statement Showing Balance Resources for Product X & Y

Resources	Maximum Availability (a)	Maximum Production Z (b)	Consumption of Resources p.u. (c)	Total Cons. (d) = (b) x (c)	Balance (a) - (d)
Material	50,000 Kg.	750	30 Kg.	22,500 Kg.	27,500 Kg.
Machine Hrs.	9,200 Hrs.	750	4 Hrs.	3,000 Hrs.	6,200 Hrs.

The production of X & Y may be calculated with the help of following equations by utilizing balance resources: -

$$20X + 12Y = 27,500 \dots(i)$$

$$3X + 5Y = 6,200 \dots(ii)$$

Then,

~~$$30X + 18Y = 41,250$$~~

...equation (i) multiplied by 1.5

~~$$30X + 50Y = 62,000$$~~

...equation (ii) multiplied by 10

$$\begin{array}{r} - \quad - \\ \hline -32Y = -20,750 \end{array}$$

$$Y = 648.43 \text{ i.e. } 648 \text{ units}$$

Putting the value of Y in equation (ii)

$$3X + (5 \times 648) = 6,200$$

Or $3X = 2,960$

Or $X = 986 \text{ units}$

So the of Product Mix is

$$X = 986 \text{ units}$$

$$Y = 648 \text{ units}$$

$$Z = 750 \text{ units}$$

Question4

(a) X Division and Y Division are two divisions in the XY group of companies. X Division manufactures one type of component which it sells to external customers and also to Y Division.

Details of X Division are as follows:

<i>Market price per component</i>	<i>₹300</i>
<i>Variable cost per component</i>	<i>₹157</i>
<i>Fixed costs</i>	<i>₹20,62,000 per period</i>
<i>Demand from Y Division</i>	<i>20,000 components per period</i>
<i>Capacity</i>	<i>35,000 components per period</i>

Y Division assembles one type of product which it sells to external customer. Each unit of that product requires two of the components that are manufactured by X Division.

Details of Y Division are as follows:

<i>Selling price per unit</i>	<i>₹1,200</i>
<i>Variable cost per unit:</i>	
<i>(i) Two components from X</i>	<i>2 @ transfer price</i>
<i>(ii) Other variable costs per unit</i>	<i>₹375</i>
<i>Fixed costs</i>	<i>₹13,50,000 per period</i>
<i>Demand</i>	<i>10,000 units per period</i>
<i>Capacity</i>	<i>10,000 units per period</i>

Group Transfer Pricing Policy

Transfers must be at opportunity cost.

Y must buy the components from X.

X must satisfy demand from Y before making external sales.

Required:

- (1) Calculate the profit for each division if the external demand per period for the components that are made by X Division is:*
 - (i) 15,000 components*
 - (ii) 19,000 components*
 - (iii) 35,000 components*
- (2) Calculate the financial impact on the Group if Y Division ignored the transfer pricing policy and purchased all of the 20,000 components that it needs from an external supplier for ₹255 each. Your answer must consider the impact at each of the three levels of demand (15,000, 19,000 and 35,000 components) from external customers for the component manufactured by X Division. (10 Marks)*

(b) The activities involved in a project are detailed below:

Duration (Weeks)

<i>Job</i>	<i>Optimistic</i>	<i>Most likely</i>	<i>Pessimistic</i>
1-2	3	6	15
2-3	6	12	30
3-5	5	11	17
7-8	4	19	28
5-8	1	4	7
6-7	3	9	27
4-5	3	6	15
1-6	2	5	14
2-4	2	5	8

- (i) Draw a network diagram.
- (ii) Find the critical path after estimating the earliest and latest event times for all nodes, expected project length, variance of critical path, standard deviation of critical path and
- (iii) What will be the effect on current critical path if the most likely time of activity 3-5 gets revised to 14 instead of 11 weeks given above? (6 Marks)

Answer

(a) (i)

Computation of Weighted Average Transfer Price

Particulars	External Demand 15,000 Components	External Demand 19,000 Components	External Demand 35,000 Components
Component's Transfer Price (Base)	Variable Cost	Variable Cost <i>plus</i> Opportunity Cost for 4,000 Components	Variable Cost <i>plus</i> Opportunity Cost for 20,000 Components
Variable Cost (₹)	157.00	157.00	157.00
Opportunity Cost (₹)	0	28.60 $\left(\frac{4,000}{20,000} \times ₹143\right)$	143.00 $\left(\frac{20,000}{20,000} \times ₹143\right)$
Transfer Price (₹)	157.00	185.60	300.00

Opportunity Cost for a Component is the Contribution *forgone* by not selling it to the market.

$$\begin{aligned} \text{Contribution} &= \text{Market Selling Price} - \text{Variable Cost} \\ &= ₹300 - ₹157 \\ &= ₹143 \end{aligned}$$

Statement Showing Profitability of Division- X

Particulars	External Demand 15,000 Components (₹)	External Demand 19,000 Components (₹)	External Demand 35,000 Components (₹)
Sales :			
- Division–Y	31,40,000 (₹157 × 20,000)	37,12,000 (₹185.60 × 20,000)	60,00,000 (₹300 × 20,000)
- Market	45,00,000 (₹300 × 15,000)	45,00,000 (₹300 × 15,000)	45,00,000 (₹300 × 15,000)
Total Revenue	76,40,000	82,12,000	1,05,00,000
Less: Variable Cost (₹157 × 35,000)	54,95,000	54,95,000	54,95,000
Less: Fixed Cost	20,62,000	20,62,000	20,62,000
Profit	83,000	6,55,000	29,43,000

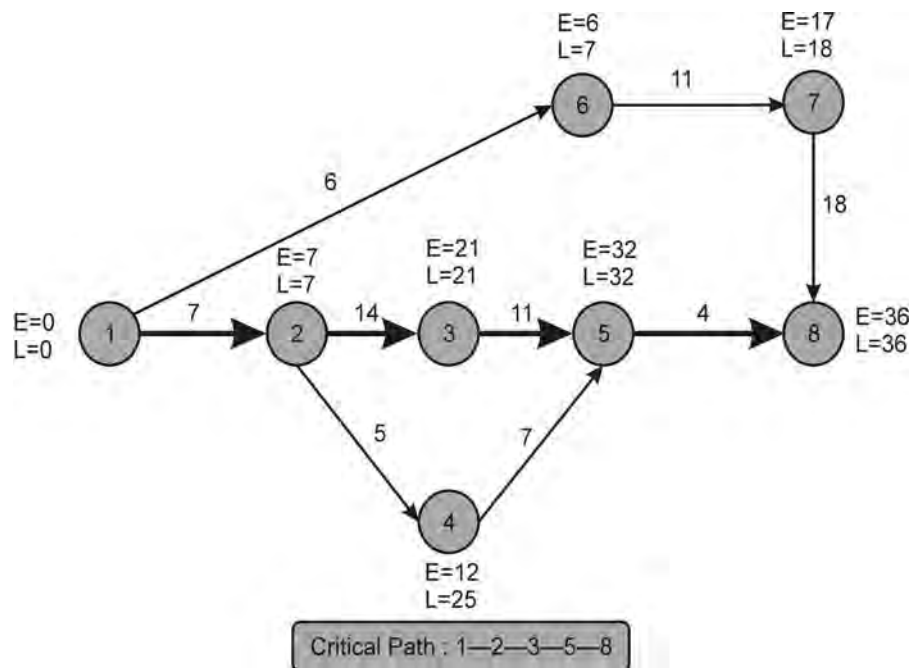
Statement Showing Profitability of Division- Y

Particulars	External Demand 15,000 Components (₹)	External Demand 19,000 Components (₹)	External Demand 35,000 Components (₹)
Selling Price <i>per unit</i>	1,200.00	1,200.00	1,200.00
Less: Variable Cost <i>per unit:</i> Component – X	314.00 (₹157 × 2)	371.20 (₹185.60 × 2)	600.00 (₹300 × 2)
Others	375.00	375.00	375.00
Contribution <i>per unit</i>	511.00	453.80	225.00
No. of 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

(ii) Financial Impact on the Group if Y Division Ignored the Transfer Pricing Policy

Particulars	External Demand 15,000 Components (₹)	External Demand 19,000 Components (₹)	External Demand 35,000 Components (₹)
Extra Cost of External Purchase (₹255-₹157) × 20,000	19,60,000	19,60,000	19,60,000
Extra Contribution by External Selling by X 0 × ₹143	0	---	---
4,000 × ₹143	---	5,72,000	---
20,000 × ₹143	---	---	28,60,000
Net Impact	(19,60,000)	(13,88,000)	9,00,000

(b) (i) The Network for the given problem-



(ii) The Expected Time and Variance for each of the Activities (in Weeks)

Activity	Time Estimates (Weeks)			Expected Time $t_e = \frac{t_o + 4t_m + t_p}{6}$	Variance $S_t^2 = \left(\frac{t_p - t_o}{6}\right)^2$
	Optimistic (t _o)	Most Likely (t _m)	Pessimistic (t _p)		
1-2	3	6	15	7	4
2-3	6	12	30	14	16
3-5	5	11	17	11	4
7-8	4	19	28	18	16
5-8	1	4	7	4	1
6-7	3	9	27	11	16
4-5	3	6	15	7	4
1-6	2	5	14	6	4
2-4	2	5	8	5	1

Expected Project Length (T_e) = 36 weeks

Variance of the Critical Path 1-2-3-5-8 (σ_e²) = 4+16+4+1
= 25

Standard Deviation of the Critical Path (σ_e) = √25
= 5

(iii) Effect on the current critical path if the most likely time of activity 3-5 gets revised to 14:

If the most likely time of activity 3-5 gets revised to 14 instead of 11 weeks as given, the expected duration of the activity 3-5 will be

$$t_e = \frac{t_o + 4t_m + t_p}{6}$$

$$t_e = \frac{5 + 4 \times 14 + 17}{6}$$

$$t_e = 13 \text{ Weeks}$$

Accordingly, expected duration of the activity 3-5 will be 13 weeks instead of 11 weeks calculated earlier. As activity 3-5 lie on the critical path, the project duration will increase by 2 weeks (13-11) and the total project duration will become 38 weeks (36+2).

Question 5

(a) Compute the missing data, indicated by question marks from the following:

Particulars	Product A	Product B
Standard price per unit (₹)	24	30
Actual price per unit (₹)	30	40
Standard input (kg)	50	??
Actual input (kg)	??	70
Material price variance	??	??
Material usages variance (₹)	??	600 (A)
Material cost variance	??	??

Material Mix variance for both products together was ₹90 adverse. (7 Marks)

(b) A manufacturing company has three factories namely 'Factory A', 'Factory B' and 'Factory C'. All three factories produce the same product which are sold at ₹ 750 per unit. The factory-wise estimates of operation results for 2014 are as follows:

(₹ inlaks)

	Factory A	Factory B	Factory C	Total
Sales	600	2,400	1,200	4,200
Costs:				
Raw materials	150	700	290	1,140
Direct labour	150	560	280	990
Factory overheads-variable	40	220	110	370
Factory overheads-fixed	80	240	120	440
Selling overheads-variable	46	140	80	266
Selling overheads-fixed	30	100	60	190
Administrative overheads	40	180	80	300
Head office expenses	24	100	60	184
Profit	40	160	120	320

When the above estimates were under finalization, the company's legal department advised that the lease of Factory 'A' was due to expire on 31st December, 2013 and that it could be renewed by enhancing the lease rent by ₹ 24 lakhs per annum. Since this enhancement will have impact on the profitability of the company, the management is constrained to examine following proposals:

(i) Renew the lease and bear the impact.

(ii) Close down factory 'A', sell off plant, machinery and stock and liquidate all liabilities including the staff and workers', pay retrenchment compensation from sale proceeds which are sufficient for the purpose.

In order however to maintain the customer relations, the total planned output of the factory 'A' will be transferred to EITHER factory 'B' OR factory 'C'. Plant capacity is available at both the factories to takeover the manufacture. The additional cost involved in the manufacture of the extra output so transferred in factory 'B' and 'C' are estimated as under:

		Factory B	Factory C
(a)	Additional fixed overheads due to increase in capacity utilization (per annum)	₹100 lakhs	₹80 lakhs
(b)	Additional freight, selling and other overheads to produce and distribute the output to the present customers of factory 'A'	₹50 per unit	₹70 per unit

You are required to prepare comparative statements of profitability in the aforesaid alternative courses of action and give your recommendations. (9 Marks)

Answer

(a) Workings for Finding - Missing Figures

Statement Showing Standard & Actual Cost (Incomplete)

Material	Standard			Actual		
	Qty. [SQ] (Kg.)	Price [SP] (₹)	Amount [SQ x SP] (₹)	Qty. [AQ] (Kg.)	Price [AP] (₹)	Amount [AQ x AP] (₹)
A	50	24	1,200	??	30	??
B	??	30	??	70	40	2,800
	??		??	??		??

Standard Input (Kg.) for Product 'B'-

Let 'T' Kgs. be the Standard Quantity of Input for Product B

Material Usage Variance = (SQ × SP) – (AQ × SP)

Or

$$= (SQ - AQ) \times SP$$

For Product B:

$$₹600 (A) = (T \text{ Kgs.} - 70 \text{ Kgs.}) \times ₹30$$

$$\Rightarrow -600 = 30T - 2,100$$

$$\Rightarrow 30T = 1,500$$

$$\Rightarrow T = 50 \text{ Kg.}$$

Hence Standard Quantity of input for product B is 50Kg.

Actual Input (Kg.) for Product 'A'

Let 'N' Kg. be the Actual Quantity of Input for Product A

$$\text{Material Mix Variance} = \text{Std. Price} \times (\text{Actual Quantity in Std. Proportion} - \text{Actual Quantity})$$

Or

$$\text{Material Mix Variance (A+B)} = \text{Material Mix Variance (A)} + \text{Material Mix Variance (B)}$$

$$\Rightarrow -90 = \left[\text{₹ } 24 \left\{ \left(\frac{N+70}{2} \right) - N \right\} + \text{₹ } 30 \left\{ \left(\frac{N+70}{2} \right) - 70 \right\} \right]$$

$$\Rightarrow -90 = \left[\text{₹ } 24 \left\{ \left(\frac{N+70-2N}{2} \right) \right\} + \text{₹ } 30 \left\{ \left(\frac{N+70-140}{2} \right) \right\} \right]$$

$$\Rightarrow -90 = 840 - 12N + 15N - 1,050$$

$$\Rightarrow -90 = 3N - 210$$

$$\Rightarrow 3N = 120$$

$$\Rightarrow N = 40 \text{ Kg.}$$

Statement Showing Standard & Actual Cost (Complete)

Material	Standard			Actual		
	Qty. [SQ] (Kg.)	Price [SP] (₹)	Amount [SQ × SP] (₹)	Qty. [AQ] (Kg.)	Price [AP] (₹)	Amount [AQ × AP] (₹)
A	50	24	1,200	40	30	1,200
B	50	30	1,500	70	40	2,800
	100		2,700	110		4,000

Computation of Variances of Product A

$$\text{Material Price Variance} = \text{Standard Cost of Actual Quantity} - \text{Actual Cost}$$

$$= (\text{SP} \times \text{AQ}) - (\text{AP} \times \text{AQ})$$

Or

$$= (\text{SP} - \text{AP}) \times \text{AQ}$$

$$\begin{aligned}
 &= (\text{₹}24.00 - \text{₹}30.00) \times 40 \text{ Kg.} \\
 &= \text{₹}240 \text{ (A)} \\
 \text{Material Usage Variance} &= \text{Standard Cost of Standard Quantity for Actual Production} - \text{Standard Cost of Actual Quantity} \\
 &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{SP}) \\
 &\quad \text{Or} \\
 &= (\text{SQ} - \text{AQ}) \times \text{SP} \\
 &= \text{₹}24.00 \times (50 \text{ Kg.} - 40 \text{ Kg.}) \\
 &= \text{₹}240 \text{ (F)} \\
 \text{Total Material Cost Variance} &= \text{Standard Cost} - \text{Actual Cost} \\
 &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\
 &= \text{₹}1,200 - \text{₹}1,200 \\
 &= \text{₹}0
 \end{aligned}$$

Computation of Variances of Product B

$$\begin{aligned}
 \text{Material Price Variance} &= \text{Standard Cost of Actual Quantity} - \text{Actual Cost} \\
 &= (\text{SP} \times \text{AQ}) - (\text{AP} \times \text{AQ}) \\
 &\quad \text{Or} \\
 &= (\text{SP} - \text{AP}) \times \text{AQ} \\
 &= (\text{₹}30.00 - \text{₹}40.00) \times 70 \text{ Kg.} \\
 &= \text{₹}700 \text{ (A)} \\
 \text{Total Material Cost Variance} &= \text{Standard Cost} - \text{Actual Cost} \\
 &= (\text{SQ} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\
 &= \text{₹}1,500 - \text{₹}2,800 \\
 &= \text{₹}1,300 \text{ (A)}
 \end{aligned}$$



Calculation as well as Presentation may be different. However, there will be no change in final answer.

(b) (i) Impact on Profit of Continuance of Production by Renewing the Lease

(₹ in lakhs)

		Factories			Total
		A	B	C	
Sales	...(A)	600	2,400	1,200	4,200

<i>Less: Variable Cost</i>				
Raw Material	150	700	290	1,140
Direct Labour	150	560	280	990
Factory Overheads (Variable)	40	220	110	370
Selling Overheads (Variable)	46	140	80	266
Total Variable Costs ... (B)	386	1,620	760	2,766
Contribution ... (C) = (A) – (B)	214	780	440	1,434
<i>Less: Fixed Cost</i>				
Factory Overheads (Fixed)	80	240	120	440
Selling Overheads (Fixed)	30	100	60	190
Administration Overheads	40	180	80	300
Head Office Expenses	24	100	60	184
Additional Lease Rent	24	--	--	24
Total Fixed Costs (D)	198	620	320	1,138
Profit (C)–(D)	16	160	120	296

The above statement shows that though profit is reduced from existing ₹320 lakhs to ₹296 lakhs, still factory 'A' generates a contribution towards head office expenses.

(ii) **Comparative Statements of Profitability** (₹in lakhs)

	When Production of Factory A is Transferred to Factory B			When Production of Factory A is Transferred to Factory C		
	B	C	Total	B	C	Total
Sales	3,000	1,200	4,200	2,400	1,800	4,200
<i>Less: Variable Costs</i>	2,065	760	2,825	1,620	1,196	2,816
Contribution	935	440	1,375	780	604	1,384
<i>Less: Fixed Costs</i>	720	320	1,040	620	400	1,020
Profit	215	120	335	160	204	364

Since transfer of production of factory 'A' to factory 'C' yields higher profit, i.e., ₹364 lakhs, this course is recommended.

Workings

Variable and Fixed Costs When the Production of Factory 'A' is Transferred to Factory 'B'-

(₹in lakhs)

	Sales	Variable Costs	Fixed Costs
'B'	2,400	1,620	620
'A'	600	405 $\left(\frac{₹1,620}{2,400} \times 600 \right)$	---
Additional Costs	---	40.00 (80,000* × ₹50)	100
Total	3,000	2,065	720

(*) 80,000 units (₹600 lakhs ÷ ₹750)

Variable and Fixed Costs when the Production of Factory 'A' is transferred to Factory 'C'-

(₹in lakhs)

	Sales	Variable Costs	Fixed Costs
'C'	1,200	760	320
'A'	600	380 $\left(\frac{₹760}{1,200} \times 600 \right)$	---
Additional Costs	---	56 (80,000 × ₹70)	80
Total	1,800	1,196	400



This solution may also be done with the assumption that head office expenses attributable to factory A will be charged to the factory to which its production has been transferred.

Question6

- (a) A company manufactures several products of varying designs and models. It uses a single overhead recovery rate based on direct labour hours. The overheads incurred by the Company in the first half of the year are as under:

	₹
Machine operation expenses	20,25,000
Machine maintenance expenses	3,75,000
Salaries of technical staff	12,75,000
Wages and salaries of stores staff	5,25,000

During this period, the company introduced activity based costing system and the following significant activities were identified:

- Receiving materials and components
- Set up of machines for production runs
- Quality inspection

It is also determined that:

- The machine operation and machine maintenance expenses should be apportioned between stores and production activity in 1:4 ratio.
- The technical staff salaries should be apportioned between machine maintenance, set up and quality inspection in 3 : 4 : 3 ratio.

The consumption of activities during the period under review are as under:

- | | |
|--|--------|
| • Direct labour hours worked | 80,000 |
| • Production set-ups | 4,080 |
| • Material and components consignments received from suppliers | 3,920 |
| • Number of quality inspection carried out | 2,560 |

The direct wages rate is ₹ 12 per hour.

The data relating to two products manufactured by the company during the period are as under:

		P	Q
Direct Materials costs	₹	12,000	8,000
Direct labour hours	Hrs.	960	100
Direct Materials Consignments received	nos.	48	52
Production runs	nos.	36	24
Number of quality inspection done	nos.	30	10
Quantity Produced	units in nos.	15,000	5,000

A potential customer has approached the company for the supply of 24,000 units of a component 'R' to be delivered in lots of 3,000 units per quarter. The job will involve an initial design cost of ₹60,000 and the manufacture will involve the following per quarter.

Direct Material costs	₹	12,000
Direct labour hours	Hrs.	300
Production runs	nos.	6
Inspections	nos.	24
Number of consignments of direct materials to be received	nos.	20

You are required to:

1. Calculate the cost of products P and Q based on the existing system of single overhead Recovery rate.
 2. Determine the cost of product P & Q using Activity Based Costing system.
 3. Compute the sales values per quarter of components 'R' using Activity Based Costing system. (considering a mark up of 25% on cost) (10 Marks)
- (b) The following are the details regarding budgeted and actual production costs for the year 2013 of an industrial concern. You are required to prepare a Production Cost Budget for the year 2014.

	Budget		Actual	
Output (units)	39,900		40,600	
	Units		₹	Units
			₹	
Materials consumed	42,000	42,000	43,000	53,750
Wages at 1 hour per unit at ₹ 1 per unit Budget	---	39,900	---	44,660
Variable Overhead at ₹1 per unit Budget	---	19,950	---	20,600
Fixed Overheads	---	30,000	---	35,000
		1,31,850		1,54,010

During the budget period:

- (1) Production is expected to reach 50,000 units,
- (2) Material price are expected to increase further by the same percentage as they had increased over the budget period.
- (3) Labour rates are expected to increase by ₹ 0.20 per hour above the actual rates shown above; efficiency is expected to decline by 10%; upto 31st December, 2013, there has been no decline in efficiency.
- (4) Variable overhead of previous year to be maintained.
- (5) Fixed overheads are expected to rise by 10% per annum.
- (6) Wastage of materials to be maintained at 2013 budget level. (6 Marks)

Answer

(a) (i) Statement of Calculation of Unit Cost of Product P & Q on the Existing System

	P (₹)	Q (₹)
Direct Material	12,000	8,000
Direct Labour Cost	11,520 (₹12 × 960 hr.)	1,200 (₹12 × 100 hr.)
Overheads (Direct Labour Hours × ₹52.5 per hour)	50,400	5,250
Total Cost	73,920	14,450
Quantity Produced (units)	15,000	5,000
Cost per unit	4.928	2.89

Single Factory Direct Labour Hour Overhead Rate

$$= \frac{₹42,00,000}{80,000 \text{ labour hours}}$$

$$= ₹52.50 \text{ per Direct Labour Hour}$$

(ii) Workings

Statement of Apportionment of Overheads (Amount in ₹)

Particulars	Receiving Supplies	Setups	Quality Inspection	Total
Machine Operation expenses (1 : 4)	4,05,000 (₹20,25,000 × $\frac{1}{5}$)	16,20,000 (₹20,25,000 × $\frac{4}{5}$)	--	20,25,000
Maintenance (1 : 4)	1,51,500 (₹7,57,500 × $\frac{1}{5}$)	6,06,000 (₹7,57,500 × $\frac{4}{5}$)	--	7,57,500*
Salary of Technical Staff	--	5,10,000 (₹12,75,000 × $\frac{4}{10}$)	3,82,500 (₹12,75,000 × $\frac{3}{10}$)	8,92,500**
Wages & Salary of Stores Staff	5,25,000	--	--	5,25,000
Total	10,81,500	27,36,000	3,82,500	42,00,000

$$(*) ₹3,75,000 + \text{Share of Technician's Salary} \left(₹12,75,000 \times \frac{3}{10} \right)$$

(**) ₹12,75,000 – Share to Machine Maintenance $\left(₹12,75,000 \times \frac{3}{10} \right)$

The next stage is to identify the cost drivers for each activity and establish cost driver rates by dividing the activity costs by a measure of cost driver usage for the period.

Computation of Activities Cost Driver Rate

Overhead Costs	Activity Cost Driver rate
Receiving Supplies $\left[\frac{₹ 10,81,500}{3,920} \right]$	₹275.89 per consignment
Performing Setups $\left[\frac{₹ 27,36,000}{4,080} \right]$	₹670.59 per setup
Quality Inspection $\left[\frac{₹ 3,82,500}{2,560} \right]$	₹149.41 per quality inspection

Finally, costs are assigned to components based on their cost driver usage. The assignments are as follows-

Statement of Determination of the Cost of Product P & Q using Activity Based Costing System

Particulars of Costs	P (₹)	Q (₹)
Direct Materials	12,000	8,000
Direct Labour @ ₹12 per hour	11,520	1,200
Receiving Supplies	13,243 (₹275.89 × 48 Con.)	14,346 (₹275.89 × 52 Con.)
Performing Setups	24,141 (₹670.59 × 36 Set-ups)	16,094 (₹670.59 × 24 Set-ups)
Quality Inspections	4,482 (₹149.41 × 30 QI)	1,494 (₹149.41 × 10 QI)
Total Costs	65,386	41,134
No of Units Produced	15,000	5,000
Cost per unit	4.36	8.23

(iii) Computation of Sales Value per Quarter of Component 'R' (using ABC)

Particulars of Costs	Amount (₹)
Direct Materials	12,000

Direct Labour(@ ₹12 per hour)	3,600 (₹12 × 300 Hr.)
Initial Design Cost (₹60,000 ÷ 8 Quarter)	7,500
Receiving Supplies	5,518 (₹275.89 × 20 Con.)
Performing Setups	4,024 (₹670.59 × 6 Set-ups)
Quality Inspections	3,586 (₹149.41 × 24 QI)
Total Costs	36,228
Add: Margin 25% of ₹36,228	9,057
Total Sales Value	45,285

(b) Preparation of Production Cost Budget for 50,000 units for the year 2014

Particulars	Cost Per Unit	Total Amount (₹)
Materials (W.N.-1)	1.645	82,237.50
Wages (W.N.-2)	1.43	71,500.00
Variable Overhead	0.50	25,000.00
Fixed Overhead (₹35,000 × 110%)	0.77	38,500.00
Total Cost	4.345 (Approx.)	2,17,237.50



Fixed Overhead can also be calculated on the basis of previous year's budgeted figure. **Variable Overhead** may also be calculated by taking ₹ 1 per unit. This question can also be solve by taking 50,000 hrs. as 90% of total hrs. required to produce the 50,000 units.

Working Notes**1. Material Cost-**

(a) Increase in Material Price in the Year 2013-

$$= \frac{\text{Actual Cost per unit in 2013} - \text{Budgeted Cost per unit in 2013}}{\text{Budgeted Cost per unit in 2013}} \times 100$$

$$= \frac{\left(\frac{\text{₹ 53,750}}{43,000 \text{ units}} \right) - \text{₹ 1}}{\text{₹ 1}} \times 100$$

$$= 25\%$$

(b) Material Required to Produce 50,000 units-

$$= \frac{42,000 \text{ units}}{39,900 \text{ units}} \times 50,000 \text{ units}$$

$$= 52,632 \text{ units (rounded)}$$

(c) Increased Cost for 50,000 units in the Year 2014-

$$= \frac{₹53,750}{43,000 \text{ units}} \times 125\% \times 52,632 \text{ units}$$

$$= ₹82,237.50$$

2. Wages-

(a) Rate *per hour* in 2014-

$$= \frac{\text{Wages Paid in the Year 2013}}{\text{Actual Units Produced}} + ₹0.20$$

$$= \frac{₹44,660}{40,600 \text{ units}} + ₹0.20$$

$$= ₹1.30$$

(b) Wages to be paid for 50,000 units i.e. for 50,000 hours (1 hour per unit). When the labour efficiency is 90% only, then Total Wages will be-

$$= \left(50,000 \text{ hours} \times \frac{110}{100} \right) \times ₹1.30$$

$$= ₹71,500$$

Question7

Answer any **four** out of the following **five** questions:

- In a transport problem for cost minimization, there are 4 rows indicating quantities demanded and these totals up to 1800 units. There are 4 columns giving quantities supplied and these totals up to 2,100 units. What is the condition for a solution to be degenerate?
- Explain the concept of relevancy of cost by citing three examples each of relevant costs and non-relevant costs.
- How does the JIT approach help in improving an organization's Profitability?
- Briefly explain the phases in the life cycle of a product.

- (e) *How customer costing is applied in service sector? Explain with example from any service sector area.* (4 x 4 = 16 Marks)

Answer

- (a) The condition for degeneracy is that the number of allocations in a solution is less than $m+n-1$.

The given problem is an unbalanced situation and hence a dummy row is to be added, since the column quantity is greater than that of the row quantity. The total number of rows and columns will be 9 i.e. (5 rows and 4 columns). Therefore, $m+n-1 = 8$, i.e. if the number of allocations is less than 8, then degeneracy would occur.

- (b) Relevant costs are those costs which are pertinent to a decision. In other words, these are the costs which are influenced by a decision. Those costs which are not affected by the decision are not relevant costs.

Examples of Relevant Costs are-

- (1) All variable costs are relevant costs.
- (2) Fixed Costs which vary with the decision are relevant costs.
- (3) Incremental costs are relevant costs.

Examples of Non-Relevant Costs are-

- (1) All fixed costs are generally non-relevant.
- (2) Variable costs which do not vary with the decision are not relevant costs.
- (3) Book value of the asset is not relevant.

- (c) JIT approach helps in the reduction of costs/increase in prices as follows:

- (i) Immediate detection of defective goods being manufactured so that early correction is ensured with least scrapping.
- (ii) Eliminates / reduces WIP between machines within working cell.
- (iii) Overhead costs in the form of rentals for inventory, insurance, maintenance costs etc. are reduced.
- (iv) Higher product quality ensured by the JIT approach leads to higher premium in the selling price.

Detection of problem areas due to better production / scrap reporting / labour tracing and inventory accuracy lead to reduction in costs by improvement.

- (d) **Phases in Life Cycle of a Product-**

Phase	Characteristics
Introduction	Product is launched. Profits are almost nonexistent. Competition is almost negligible.

Growth	Sales/ Profits rise rapidly. Competition enters.
Maturity	Sales increases but at a declining rate. Some firms extend their product lines with new models.
Saturation and Decline	Drop in sales volume, need for product demand disappears. Better and cheaper substitutes are available in the market.

- (e) **Customer Costing in the Service Sector-** The customer costing is a new approach to management. The central theme of this approach is customer satisfaction. In some service industries, such as public relations, the specific output of industry may be difficult to identify and even more difficult to quantify. Further there are multiple customers, identifying support activities i.e. common costs with particular customer may be more problematic. In such cases it is important to cost customer. An ABC analysis of customers profitability provides valuable information to help management in pricing customer. Consider a banking sector. A bank's activities for customer will include the following types of activities. These are:

- (i) Stopping a Cheque
- (ii) Withdrawal of Cash
- (iii) Updation of Pass Book
- (iv) Issue of Duplicate Pass Book
- (v) Returning a Cheque because of Insufficient Funds
- (vi) Clearing of a Customer Cheque

Different customers or categories of customers use different amount of these activities and so customer profiles can be built up and customer can be charged according to the cost to serve them.

Customer Profile is important in analyzing cost under the following categories-

- (i) **Customer Specific Costs-** These are the direct and indirect cost of providing service to customer plus customer related cost assigned to each customer. For example: cost of express courier service to a client who requests over-night delivery of some agreement.
- (ii) **Customer – Line Categories-** These are the costs which are broken into broad categories of customers and not individual customers.
- (iii) **Company Costs-** These are those costs which are not allocated to either customer line or individual customers but charge to company. The example is the cost of advertisement to promote sale of service.