

me: Three E

Maximum: 75 Marks

$$(10 \times 1 = 10)$$

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO																		
1	11.a.	Represent the data in a percentage subdivided bar diagram	K4	CO1																		
		<table><tr><td>Year</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr><tr><td>Production in Branch A</td><td>200</td><td>400</td><td>500</td><td>300</td><td>600</td></tr><tr><td>Production in Branch B</td><td>800</td><td>1200</td><td>400</td><td>1000</td><td>600</td></tr></table>			Year	2010	2011	2012	2013	2014	Production in Branch A	200	400	500	300	600	Production in Branch B	800	1200	400	1000	600
		Year			2010	2011	2012	2013	2014													
Production in Branch A	200	400	500	300	600																	
Production in Branch B	800	1200	400	1000	600																	
(OR)																						
	11.b.	Calculate the average wages using arithmetic mean	K5	CO2																		
		<table><tr><td>Wages</td><td>75</td><td>100</td><td>120</td><td>150</td><td>200</td></tr><tr><td>No. of No. Of Labourers</td><td>5</td><td>12</td><td>20</td><td>14</td><td>9</td></tr></table>			Wages	75	100	120	150	200	No. of No. Of Labourers	5	12	20	14	9						
		Wages			75	100	120	150	200													
No. of No. Of Labourers	5	12	20	14	9																	
(OR)																						
2	12.a.	Explain the types of correlation using scatter diagram.	K5	CO2																		
		(OR)																				
		Compute the Karl Pearson's coefficient of correlation.																				
	12.b.	<table><tr><td>X</td><td>6.9</td><td>8.2</td><td>7.8</td><td>4.8</td><td>9.6</td><td>8.0</td><td>7.7</td></tr><tr><td>Y</td><td>1.9</td><td>3.5</td><td>6.5</td><td>1.3</td><td>5.5</td><td>3.5</td><td>2.2</td></tr></table>	X	6.9	8.2	7.8	4.8	9.6	8.0	7.7	Y	1.9	3.5	6.5	1.3	5.5	3.5	2.2				
		X	6.9	8.2	7.8	4.8	9.6	8.0	7.7													
		Y	1.9	3.5	6.5	1.3	5.5	3.5	2.2													
(OR)																						
3	13.a.	Random samples of weekly child births at the local maternity hospital showed the average number of births on each day of the week as follows.	K3	CO3																		
		<table><tr><td>Day</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td><td>Sun</td></tr><tr><td>No. of births</td><td>65</td><td>53</td><td>35</td><td>38</td><td>62</td><td>54</td><td>43</td></tr></table>			Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun	No. of births	65	53	35	38	62	54	43		
		Day			Mon	Tue	Wed	Thu	Fri	Sat	Sun											
No. of births	65	53	35	38	62	54	43															
(OR)																						
	13.b.	A random sample of 10 boys had the following I.Q.'s: 70, 120, 110, 101, 88, 83, 95, 98, 107, 100. Do these data support the assumption that the IQ of the population is 100?	K4	CO4																		
		(OR)																				
		(OR)																				
4	14.a.	Explain the components of LPP.	K4	CO4																		
		(OR)																				
		A person wants to decide the constituents of a diet which will fulfill his daily requirements of proteins, fats and carbohydrates at the minimum cost. The choice is to be made from three different types of foods. Food A has 3 units of proteins, 2 units of fat and 6 units of carbohydrates. FoodBA has 4 units of proteins, 2 units of fat and 4 units of carbohydrates.																				
	14.b.	Food C has 8 units of proteins, 7 units of fat and 7 units of carbohydrates. The minimum requirement of protein, fat and carbohydrate are 800units, 200 units and 700 units. The minimum cost in rupees per unit of food types A, B and C are 45, 40 and 85 respectively. Formulate the problem as a LPP.																				
		(OR)																				
		(OR)																				

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5	15.a.	Write the mathematical model of a Transportation problem. When will you say that it is balanced?					K3	CO5																											
	(OR)																																		
	15.b.	Obtain the initial basic feasible solution using North West Corner rule. <table><tr><td>Origin/Destination→</td><td>D1</td><td>D2</td><td>D3</td><td>Supply</td></tr><tr><td>O1</td><td>2</td><td>7</td><td>4</td><td>5</td></tr><tr><td>O2</td><td>3</td><td>3</td><td>1</td><td>8</td></tr><tr><td>O3</td><td>5</td><td>4</td><td>7</td><td>7</td></tr><tr><td>O4</td><td>1</td><td>6</td><td>2</td><td>14</td></tr><tr><td>Demand</td><td>7</td><td>9</td><td>18</td><td>34</td></tr></table>							Origin/Destination→	D1	D2	D3	Supply	O1	2	7	4	5	O2	3	3	1	8	O3	5	4	7	7	O4	1	6	2	14	Demand	7
Origin/Destination→	D1	D2	D3	Supply																															
O1	2	7	4	5																															
O2	3	3	1	8																															
O3	5	4	7	7																															
O4	1	6	2	14																															
Demand	7	9	18	34																															

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO																																
1	16	From the following prices of gold in a week in two cities, identify the city in which the prices are stable. <table><tr><td>Day</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr><tr><td>City A</td><td>498</td><td>500</td><td>505</td><td>504</td><td>502</td><td>509</td></tr><tr><td>City B</td><td>500</td><td>505</td><td>502</td><td>498</td><td>496</td><td>505</td></tr></table>	Day	Mon	Tue	Wed	Thu	Fri	Sat	City A	498	500	505	504	502	509	City B	500	505	502	498	496	505	K4	CO1											
Day	Mon	Tue	Wed	Thu	Fri	Sat																														
City A	498	500	505	504	502	509																														
City B	500	505	502	498	496	505																														
2	17	In a random sample of 1000 persons from city A, 400 are found to be consumers of wheat. In a sample of 800 from city B, 400 are found to be wheat consumers. Do these data reveal a significant difference between the two cities as far as the proportion of wheat consumers are concerned?	K3	CO3																																
3	18	The following table gives the weights of 8 pigs before and after introducing a particular food variety. Test whether there is any significant difference in weights at 5% level of significance. <table><tr><td>Food A</td><td>49</td><td>53</td><td>51</td><td>52</td><td>47</td><td>50</td><td>52</td><td>53</td></tr><tr><td>Food B</td><td>52</td><td>55</td><td>52</td><td>53</td><td>50</td><td>54</td><td>53</td><td>54</td></tr></table>	Food A	49	53	51	52	47	50	52	53	Food B	52	55	52	53	50	54	53	54	K3	CO3														
Food A	49	53	51	52	47	50	52	53																												
Food B	52	55	52	53	50	54	53	54																												
4	19	Use Simplex method to solve LPP Max $Z = 4X_1 + 10X_2$ Subject to $2X_1 + X_2 \leq 50$ $2X_1 + 5X_2 \leq 100$ $2X_1 + 2X_2 \leq 90$ and $X_1, X_2 \geq 0$	K4	CO4																																
5	20	Using the data given below, find the critical path. <table><tr><td>Act</td><td>1-2</td><td>1-3</td><td>2-4</td><td>2-5</td><td>3-5</td><td>4-6</td><td>5-6</td></tr><tr><td>t_o</td><td>1</td><td>1</td><td>2</td><td>1</td><td>2</td><td>2</td><td>3</td></tr><tr><td>t_m</td><td>1</td><td>4</td><td>2</td><td>1</td><td>5</td><td>5</td><td>6</td></tr><tr><td>t_p</td><td>7</td><td>7</td><td>8</td><td>1</td><td>14</td><td>8</td><td>15</td></tr></table>	Act	1-2	1-3	2-4	2-5	3-5	4-6	5-6	t_o	1	1	2	1	2	2	3	t_m	1	4	2	1	5	5	6	t_p	7	7	8	1	14	8	15	K3	CO5
Act	1-2	1-3	2-4	2-5	3-5	4-6	5-6																													
t_o	1	1	2	1	2	2	3																													
t_m	1	4	2	1	5	5	6																													
t_p	7	7	8	1	14	8	15																													