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SARDAR PATEL UNIVERSITY

SY BBA (IV SEM.) (ITM) (CBCS) EXAMINATION

Saturday, 16th April 2016

10:30 am to 12:30 pm

UM04CBBI01: Quantitative Techniques for Management - II

Total Marks: 60

Q1 A Differentiate between correlation and regression. **[04]**

B Form the following information, find the two regression equations. **[05]**

$n = 10, \sum x = 130, \sum y = 220, \sum x^2 = 2288, \sum y^2 = 4944, \sum xy = 3467.$

C For the following, determine the two equations of regression lines. **[06]**

X	21	22	23	24	25	26	27	28	29	30
Y	17	19	19	20	23	24	27	26	28	27

OR

Q1 A Define correlation. Discuss types of correlations. **[04]**

B From the following estimate y when x is 50 and estimate x when y is 30. **[05]**

	x	y
Average	39.5	47.5
Standard deviation	10.8	16.8
Correlation coefficient	0.42	

C $2x + 3y - 8 = 0$ is the regression line of x on y and $x + 2y - 5 = 0$ is the regression line of y on x and $S_x^2 = 12$, then find $\bar{x}, \bar{y}, S_y^2$ and r. **[06]**

Q2 A Describe the transportation problem with its general form. **[05]**

B Solve the following TP by north-west corner Method & Matrix minima method. **[10]**

	D	E	F	G	supply
A	15	10	17	18	2
B	16	13	12	13	6
C	12	17	20	11	7
demand	3	3	4	5	15

OR

Q2 A Discuss the Hungarian method to solve the assignment problem. **[05]**

B Solve the following Assignment problem to maximize the total profit. **[10]**

		Jobs				
		I	II	III	IV	V
	A	32	38	40	28	40
	B	40	24	28	21	36
workers	C	41	27	33	30	37
	D	22	38	41	36	36
	E	29	33	40	35	39

(P.T.O.)

Q3 A Write the rules of drawing network diagram. [05]

B A project schedule has the following characteristics:

activity	1-2	1-3	1-4	2-5	3-5	3-6	3-7	4-6	5-7	6-8	7-8
Time	2	7	8	3	6	10	4	6	2	5	6

1. Draw the network diagram. [04]
2. Calculate EST, EFT, LST and LFT for each activity. [04]
3. Determine the critical path. [02]

OR

Q3 A Discuss errors in drawing network diagram. [05]

B A project schedule has the following characteristics:

activity	A	B	C	D	E	F	G	H	I
Predecessor activity	-	-	A	A	D	B, C	B, C	E, F	G
Time	4	2	1	4	5	2	1	3	4

1. Draw the network diagram. [04]
2. Calculate EST, EFT, LST and LFT for each activity. [04]
3. Determine the critical path. [02]

Q4 A Write in brief notes on VED analysis and XYZ analysis. [05]

B A particular item has a demand of 250 units per month. The ordering cost is Rs. 100 per order and the unit holding cost is Rs. 2.40 per unit per year. then Determine:

1. The economic lot size [03]
2. Total inventory cost per year [03]
3. The time between orders [02]
4. The number of orders per year [02]

OR

Q4 A State all costs associated with inventory and discuss any one in detail. [05]

B Shree supplies 100 units of an item on every Monday at Rs. 60 per unit. The cost of ordering and transportation is Rs. 150 per order. The cost of carrying inventory is estimated per year at 155 of the cost of the product. Determine:

1. The economic lot size [03]
2. The optimal cost [04]
3. The time between orders [03]