Dr. Babasaheb Ambedkar Open University

Term-End Examination July-2016

Corse	**: APGDBA**		
Subject Code	**: APGDBA - 108**	**Max. Marks**	**: 70**
Subject Name	**: Quantitative Techniques**	**Duration**	**: 03 hours**
Date	**:**	**Time**	**:**

Section A

Answer the following (any three) **(30)**

1. The distribution of fortnight wages of 280 employee of a company is given below:

Fortnight wages in Rs.	**Frequency**
Less than 200	12
200 – 400	16
200 – 400	16
200 – 400	16
200 – 400	16
200 – 400	16
200 – 400	16
Above 1400	07

Find Q_1 *and* D_6

2. Calculate the Karl Pearson's method of correlation for the following data.
(1,2), (2,4), (3,8), (4,7), (5,10), (6,5), (7,14), (8,16), (9,2), (10,20)

3. Solve the following LPP

$$\text{Maximize}: Z = X_1 + 2X_2 + 3X_3 - X_4$$

$$Subjet\ to,$$

$$X_1 + 2X_2 + 3X_3 = 15$$

$$2X_1 + X_2 + 5X_3 = 20$$

$$X_1 + 2X_2 + X_3 + X_4 = 10$$

$$and \quad X_1, X_2, X_3, X_4 \geq 0$$

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4. Using the following cost matrix determine the cost of assignment

Job	1	2	3	4	5
A	10	3	3	2	8
B	9	7	8	2	8
C	7	5	6	2	4
D	3	5	8	2	4
E	9	10	9	6	10

5. State and prove Bayes theorem

Section B

Answer the following (any four) **(20)**

1. Construct a frequency distribution table and find mean.
151,147,145,153,156,152,159,153,157,152,144,151,157,147,150,
157,153,151,149,147,151,147,155,156,151,158,149,147,153,152,
149,151,153,150,152,154,150,152,149,151,151,154,155,152,154,
152,156,155,154,150.
2. Find the standard deviation of the following data.
48,43,65,57,31,60,37,48,59,78.
3. From the following data

	X	Y
Mean	36	85
Standard deviation	11	8

Correlation Coefficient between X and Y is 0.66, find the regression equation X and Y.

4. Calculate the Coefficient of Correlation by concurrent deviation method of the following data.

Price:	1	4	3	5	5	8	10	10	11	15
Demnd:	100	80	80	60	58	50	40	40	35	30

5. Find the initial solution for the following problem using NWCM of the following data.

	A	B	C	D	S
P	190	300	500	100	70
Q	700	300	400	600	90
R	400	100	400	200	180
D	50	80	70	140	340

6. Check if there is a saddle point of the following game or not.

	A	B
P	8	-7
Q	-6	4

Section C

A. MCQ **(10)**

1. Which one is not a part of Measure of Central Tendency?
(a) Mean (b) Median (c) Mode (d) Percentile

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2. True or false: Mean = Q_2 .

3. In a LPP if the constrain is less than type then problem can be converted into the standard form by adding_____ variables.
   (a) Slack (b) Surplus (c) Artificial (d) Other

4. Any set of non-negative allocation which satisfies the row and column sum is called _____ solution.
   (a) Basic feasible (b) feasible (c) degenerate (d) Percentile

5. If Saddle point is not the same, then the value of the game is _____.
   (a) Smaller one (b) Larger one (c) Between these two values
   (d) Other

B. Do as Directed **(10)**

1. How many percentile are their?
2. Write formula for Spearman's Rank Correlation.
3. In a LPP if the constrain is greater than type then problem can be converted into the standard form by adding_____ variables.
4. Write full form of VAM.
5. Define mixed strategies.

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