

Sl. No. 489

BBAL 2104

No. of Printed Pages : 5

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 29104

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BBA LLB Examination 2018-2019

(First Semester)

QUANTITATIVE TECHNIQUES

Time : Three Hours]

[Maximum Marks : 60

Note :- (i) Attempt all questions.

(ii) Answer should be precise and complete.

Section-A

1. Attempt all parts of the following : $8 \times 1 = 8$

(a) Find the ratio between $\frac{7}{8}$ and $\frac{11}{12}$

(b) Express $37\frac{1}{2}\%$ as a fraction.

(c) Define the term dispersion.

(d) Determine the mode from the following data :

25, 15, 23, 40, 27, 25, 23, 25, 20

[P. T. O.

- (e) write the property by which correlation coefficient can be obtained by both the regression coefficients.
- (f) What is spearman's rank correlation coefficient?
- (g) What is objective function in a linear programming problem?
- (h) Define unit matrix.

Section-B

2. Attempt any two parts of the following : $2 \times 6 = 12$

- (a) What do you understand by simple interest and compound interest? Explain with examples
- (b) Find the standard deviation from the following data :

Size :	0-10	10-20	20-30	30-40
f:	1	2	4	3

- (c) Find the regression line of y on x for the following data :

x	1	3	4	6	8	9	11	14
y	1	2	4	4	5	7	8	9

- (d) Solve the simultaneous equations by using inverse of coefficient matrix :

$$x + y + z = 6$$

$$x - y + 2z = 5$$

$$3x + y + z = 8$$

Section-C

Note :- Attempt all questions. Attempt any two parts from each question. $8 \times 5 = 40$

3. (a) Explain various kinds of annuity.
- (b) An almirah is sold at Rs. 5225 after allowing a discount of 5%. Find its marked price.
- (c) In what time will the simple interest on Rs. 500 at 6% be equal to the interest on Rs. 540 for 8 years at 5%?
4. (a) Write short notes on the following :
- (i) Histogram
- (ii) Frequency curve

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(b) Following data relate to the no. of Patients stay in the hospital. Find the value of mode.

No. of days admitted	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
No. of patients	29	195	241	117	52	10	6	3	2

(c) What is mean deviation. Describe its merits and demerits.

5. (a) Calculate the coefficient of correlation for the following data :

x	1	2	3	4	5
y	5	4	3	2	6

(b) Define correlation. Discuss different types of correlation.

(c) The ranks of the same batch of 10 students in two subjects A and B are given below, the first number x in a bracket is the rank in A and the other y that in B. Find the rank correlation coefficient

(1,6), (2,7), (3,5), (4,10), (5,3), (6,9), (7,4), (8,1), (9,8), (10,2).

6. (a) Define with examples :

(i) Hermitian Matrix

(ii) Skew Hermitian Matrix

(b) If $A = \begin{bmatrix} 1 & 2 \\ -2 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 1 \\ 2 & 3 \end{bmatrix}$, $C = \begin{bmatrix} -3 & 1 \\ 2 & 0 \end{bmatrix}$,

Verify $(AB)C = A(BC)$.

(c) Solve the following linear programming problem by graphical method :

Maximize $z = 3x + 5y$

Such that $x + 2y \leq 20$

$$x + y \leq 15$$

$$y \leq 6$$

and $x \geq 0, y \geq 0$.

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