

S.No. : 104

BBAL 2104

No. of Printed Pages : 06

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

PAPER ID : 29104

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BBA LLB (Integrated)

Examination 2019-2020

(Odd Semester)

QUANTITATIVE TECHNIQUES

Time : 3 Hours]

[Maximum Marks : 60

Note : Attempt all questions.

SECTION – A

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

(a) What is the ratio of 8 cm to 3m?

(b) Express $16\frac{1}{2}$ into percentage.

(c) What is meant by central tendency?

[P. T. O.

- (d) Write the relation between mean, median and mode.
- (e) If two regression coefficient are -0.1 and -0.9 then find the value of correlation coefficient.
- (f) Explain the term regression.
- (g) Define optimum solution in a linear programming problem.
- (h) Define null matrix.

SECTION – B

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

- (a) Explain the following terms :

Interest, time, rate, principal and amount.

- (b) Compute the coefficient of skewness from the following data :

x	6	7	8	9	10	11	12
f	3	6	9	13	8	5	4

- (c) Calculate the correlation coefficient between the following data :

x	5	9	13	17	21
y	12	20	25	33	35

- (d) Solve the simultaneous equations with the help of matrices :

$$3x + y + 2z = 3$$

$$2x - 37 - z = -3$$

$$x + 2y + z = 4.$$

SECTION – C

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

3. (a) Explain the concept of present value and future value with examples.
- (b) The selling price of 20 articles is equal to the cost price of 25 articles, find the gain or loss percent.

[P. T. O.]

(c) How much will ₹ 25,000 amount to in 2 years at compound interest if the rate for the successive years be 4% and 5% per year?

4. (a) Draw a histogram, frequency polygon and frequency curve from the following data :

<i>Class interval</i>	10–20	20–30	30–40	40–50	50–60	60–70
<i>Frequency</i>	4	6	10	20	12	2

(b) Define mean, median and mode with their merits and demerits.

(c) Calculate mean deviation from median from the following data :

2.

<i>Size x:</i>	10	11	12	13	14
<i>Frequency:</i>	3	12	18	12	3

5. (a) Define the following :

(i) Positive correlation

(ii) Negative correlation

- (iii) Linear correlation
- (iv) Non linear correlation
- (v) Multiple correlation.

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- (b) Find the rank correlation coefficient from the following data :

x	78	89	97	69	59	79	68	57
y	125	137	156	112	107	136	123	108

- (c) Find the coefficient of correlation for the following data :

ks : 60

x	-10	-5	0	5	10
y	5	9	7	11	13

6. (a) Define the following with examples :

 $3 \times 1 = 8$

(i) Orthogonal matrix

(ii) Unitary matrix.

- (b) Evaluate $A^2 - 3A + 9I$ if

$$A = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2 \end{bmatrix}$$

[P. T. O.]

T. O.

(c) Solve the following linear programming problem graphically :

$$\begin{array}{ll}\text{Minimize} & z = 2x_1 - x_2 \\ \text{such that} & x_1 + x_2 \leq 5 \\ & x_1 + 2x_2 \leq 8 \\ \text{and} & x_1, x_2 \geq 0.\end{array}$$
