

S.No. : 138

BBAL 2104

No. of Printed Pages : 06

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

**PAPER ID : 29104**

Roll  
No.

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## Int. LLB Examination - 2019

(Special Carry Over Paper)

### QUANTITATIVE TECHNIQUES

*Time : Three Hours]*

*[Maximum Marks : 60*

**Note :-** Attempt each question.,

#### 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) Expression 16.5% as a fraction.

(c) Find the arithmetic mean of the following :

5, 9, 12, 17, 14, 10, 16

*[P. T. O.*

- (d) What is the relation between Mean, Median and Mode.
- (e) Define the term regression.
- (f) If two regression coefficients are  $-0.1$  and  $-0.9$  then find the coefficient of correlation.
- (g) Define identity matrix.
- (h) What is optimum solution in linear programming problem?

## SECTION - B

2. Attempt any two parts of the following :  $2 \times 6 = 12$
- (a) Write a short note on annuity.
- (b) During the medical checkup of 35 students of a class their weights were recorded as follows :

Weight in (kg)	No. of students
38 - 40	3
40 - 42	2
42 - 44	4
44 - 46	5
46 - 48	14
48 - 50	4
50 - 52	3

Draw a less than type and a more than type ogive from the given data.

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

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

- (d) Solve the simultaneous equation

$$x + 2y + 3z = 11$$

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

$$x + 2y - 3z = -1$$

using inverse of coefficient matrix.

## SECTION - C

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

3. (a) Define with example :

(i) Simple interest

(ii) Compound interest

- (b) A candidate secures 25% in an examination but fails by 30 marks while the other candidate who secures 50% marks get 20 marks more than the minimum passing marks. Find the minimum passing marks.
- (c) By selling a tyre for ₹ 240 the seller gains 1/3rd of its cost price find cost price and gain percent.

4. (a) Write short notes on the following :

- (i) Histogram  
(ii) Frequency curve

(b) Obtain mode of the following distributions :

Classes	Frequency
10 – 20	8
20 – 30	12
30 – 40	25
40 – 50	45
50 – 60	11
60 – 70	9

(c) Define standard deviation and explain its merits and demerits.

5. (a) Explain the following :

- (i) Correlation  
(ii) Positive correlation  
(iii) Negative correlation  
(iv) Linear correlation  
(v) Perfect correlation

(b) Calculate Karl Pearson's coefficient of correlation for the following data :

x	3	7	5	4	6	8	2	7
y	7	12	8	8	10	13	5	10

(c) The following regression equations were obtained from a correlation table :

$$y = 0.516x + 33.73$$

$$x = 0.512y + 32.52$$

Find the value of :

- (i) The mean of  $x$ 's  
(ii) The mean of  $y$ 's  
(iii) The correlation coefficient

/P. T. O.

6. (a) Define with example :

(i) Hermitian and skew Hermitian matrix

(ii) Unitary matrix

(b) If

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 3 & 1 \\ 4 & 5 \end{bmatrix}, \text{ and } C = \begin{bmatrix} 1 & 1 \\ 2 & 2 \end{bmatrix}$$

prove that

$$A(B + C) = AB + AC$$

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

Maximize  $z = 3x + 4y$

Such that  $x + y \leq 1$

$$-x + y \leq 0$$

and  $x, y \geq 0$

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