No. of Printed Pages : 05 **BBAL 2104**

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

PAPER ID:29104 Roll No.

Int. LL.B. Examination 2016-2017

(First Semester)

QUANTITATIVE TECHNIQUES

Time : 3 Hours] *[Maximum Marks : 60*

Note :– (i) Attempt all sections.

(ii) Section A carries 8 marks. Section B carries 12 marks and section C carries 40 marks.

SECTION - A

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

(a) Find the ratio between $\frac{5}{6}$ and $\frac{7}{12}$.

(b) Find out the simple interest on Rs. 500 for 4 years at the rate of 2% per annum.

(c) Find the range of the values 4, 3, 9, 12, 2, 6, 10

(d) Find the mode of the numbers 3, 5, 1, 3, 1, 3, 7, 2.

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(e) Write the formula for regression line of x on y.

(f) Write one merit of Karl Pearson's coefficient of correlation.

(g) Write an identity matrix of order 2×2.

(h) If $A = \begin{bmatrix} 1 & 2 \\ 4 & -3 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 3 \\ -1 & 5 \end{bmatrix}$ find 2A-B.

SECTION - B

2. Attempt any two parts of the following : 2×6=12

(a) When Sonu is born Rs. 10,000 is placed by his mother in an account that pays interest at the rate of 10% per annum compund interest. What amount will be there tohis credit on Sonu's 18th birthday?

(b) Find out the mode from the given data :

Class	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	5	15	40	32	28	5

(c) Write notes on limitations of statistics.

(d) Solve the following system of linear equations: $x+2y+3z=11, x-2y+3z=3, x+2y-3z=-1$ by using matrix method.

SECTION - C

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

3. (a) Write notes on types of Annuities.

(b) In how many years will simple interest on certain sum is 1/5 of the amount at 4% per annum?

(c) Find the compound interest of Rs. 4,000 at 5% per annum for two years if the interest is calculated half yearly.

4. (a) Define :

(i) Median

(ii) Quartile deviation.

(b) Find the mean from the following distribution :

x	y
0-10	4
10-20	6

20-30	10
30-40	20
40-50	10
50-60	6
60-70	4

(c) Write notes on Kurtosis and their applications to business problems.

5. (a) Explain properties of Regression.

(b) Find the regression equation of y on x from the following data :

X	1	2	3	4	5	6
Y	2	1	4	6	3	5

(c) Calculate the correlation coefficient for the following heights of fathers (x) and their sons (y):

x	65	66	67	67	68	69	70	72
y	67	68	65	68	72	72	69	71

6. (a) Define the following :

(i) Symmetric and Skew symmetric matrix

(ii) Upper and Lower triangular matrix

(b) Find the value of x, y, z and a which satisfies the matrix equation :

$$\begin{bmatrix} x+3 & 2y+x \\ z-1 & 4a-6 \end{bmatrix} = \begin{bmatrix} 10 & -17 \\ 13 & 12a \end{bmatrix}$$

(c) Solve graphically the following L.P.P.:

Maximize $Z = 2x + 5y$

Subject to constraints

$$x + 4y \leq 24$$
$$3x + y \leq 21$$
$$x + y \leq 9$$
$$x \geq, 0, y \geq 0$$

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