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

PAPER ID: 29104/ 29305 Roll No.

Int. LL.B Examination 2015-2016

(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 : 8×1=8

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

(b) Find out the simple interest on Rs. 1,000 for 5 years at the rate of 4% per annum.

(c) Find the mode of the numbers 4, 10, 7, 15, 7, 3, 5, 3, 7

[P. T. O.

(d) Find the range of the values

5, 8, 10, 7, 12, 11, 13, 4

(e) Write the formula for Karl Pearson's coefficient of correlation.

(f) If the equation of a line is $5y - 8x + 17 = 0$ then find the regression line of y on x.

(g) Write an identity matrix of order 3×3

(h) If $A = \begin{bmatrix} 1 & 3 & 5 \\ 2 & -1 & 7 \end{bmatrix}$, find transpose of matrix A.

SECTION – B

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

(a) Ramesh and Suresh are partners who share profit or loss in the ratio of 3 : 2. They agree to take Subash into partnership on $\frac{1}{4}$th share of profit. Find at certain the new profit sharing ratio.

(b) Find out standard deviation from the following table giving the age distribution of 540 members of parliament.

Age in years	No. of members
30	65
40	130
50	154
60	140
70	51

(c) Calculate the coefficient of correlation from the following data :

x	1	2	3	4	5
y	6	8	11	8	12

(d) Solve the following system of linear equations :

$$x + y + z = 3$$

$$x + 2y + 3z = 4$$

$$x + 4y + 9z = 6$$

by using matrix method.

SECTION – C

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

(a) A garment dealer allows his customers 10% discount on a marked price of the goods and still

gets a profit of 25%. What is the cost price if the marked price of a shirt is Rs. 1250?

(b) Find the compound interest of Rs. 8000 at 10% per annum for 2 years if the interest is calculated half yearly.

(c) The simple interest on a sum of money is 1/16 of the principal and the number of years is equal to the rate percent per annum. What will be the rate percent?

4. (a) Define :

(i) Mean

(ii) Median

(b) Find the mode from the following data :

Age	Frequency
0-6	6
6-12	11
12-18	25
18-24	35
24-30	18
30-36	12
36-42	6

(c) Explain skewness, Kurtosis and their applications to business problems.

5. (a) Find the regression line of y on x for the following data :

X	Y
1	1
3	2
4	4
6	4
8	5
9	7
11	8
14	9

(b) Explain merits and limitations of correlation.

(c) Find the correlation coefficient x and y, when the lines of regression are $2x-9y+6=0$ and $x-2y+1=0$

6. (a) Define matrix and explain various types of matrices with example.

(b) Find the volue of a, b, c, d which satisfy the matrix equation.

[P. T. O.

$$\begin{bmatrix} a+3 & 2b+a \\ c-2 & 4d-8 \end{bmatrix} = \begin{bmatrix} 1 & 4 \\ 2c & 2d \end{bmatrix}.$$

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

Maximize $Z = 3x_1 + 2x_2$

Subject to constraints

$$-2x_1 + x_2 \leq 1$$
$$x_1 \leq 2$$
$$x_1 + x_2 \leq 3$$
$$x_1, x_2 \geq 0$$

⌘⌘⌘