

F.Y.B.COM. SEM – II (2014 COURSE) : WINTER - 2017
SUBJECT : BUSINESS MATHEMATICS & BUSINESS STATISTICS – II

Day : **Wednesday**
 Date : **01/11/2017**

W-2017-0257

Time : **03.00 PM TO 05.00 PM**
 Max. Marks : 40

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of Logarithmic table and pocket **CALCULATOR** is allowed.

Q.1 Attempt **ANY TWO** of the following: **[10]**

- a) Describe scatter diagram and explain how it is used to measure correlation.
- b) Six entries in a music contest were rated by two judges X and Y as follows:

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

Compute Spearman's rank correlation coefficient between X and Y.

- c) Find coefficient of variation for the data given below:

Size of item	2	4	6	8	10	12
Frequency	6	10	20	24	12	7

- d) Find correlation coefficient between X and Y given the following data:
 $n = 25, \sum X = 75, \sum X^2 = 250, \sum Y = 100, \sum Y^2 = 500, \sum XY = 325$.

Q.2 Attempt **ANY TWO** of the following: **[10]**

- a) Find range and coefficient of range for the following data:
 20, 05, 76, 90, 06, 108, 20, 16.
- b) The regression equations are given by $8x - 10y = -64$ and $40x - 18y = 214$.
 Find : i) Arithmetic mean of X and Y.
 ii) Correlation coefficient between X and Y.
- c) Fit a regression line of X on Y to the following data. Also obtain value of X when Y is 12.

X	1	3	5	7	9
Y	2	4	6	8	10

Q.3 Attempt **ANY TWO** of the following: **[10]**

- a) Given : $A = \begin{bmatrix} 3 & -2 & 1 \\ 4 & 5 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 6 \\ 5 & 3 & -1 \end{bmatrix}$.
 Find $2A + 3B$ and $B - A$
- b) Solve the following equations by using method of determinants
 $2x + y = 4, \quad x + 3y = 6$
- c) A certain sum amounts to ₹ 20,000/- in 8 years at the rate of 10% p.a. simple interest, find the sum.
- d) Define Row matrix and Square matrix.

Q.4 Attempt **ANY TWO** of the following: **[10]**

- a) Find the compound interest on ₹ 20,000/- for 4 years at 10% p.a.
- b) What is the order and type of the following matrices?
 i) $\begin{bmatrix} 6 \\ 5 \\ 0 \end{bmatrix}$ ii) $\begin{bmatrix} 3 & 0 \\ 0 & 2 \end{bmatrix}$
- c) Population of a city in a specific year was 1,90,000. There was rise of 15% for each of the next 3 years. Find the population at the end of 3 years.
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