

**B.C.A. (2010 Course Sem- II : SUMMER - 2019**  
**SUBJECT : MATHEMATICS – II**  
**(NUMERICAL & STATISTICAL METHODS)**

Day : Saturday  
Date : 27/04/2019

**S-2019-2092**

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 70

**N.B.:**

- 1) **Q.No.1 is COMPULSORY.**
- 2) Attempt **ANY FOUR** questions from **Q.No.2 to Q.No.7.**
- 3) Figures to the right indicate **FULL** marks.
- 4) Use of non-programmable **CALCULATOR** is allowed.

**Q.1** What do you mean by classification of data? Discuss in brief the modes of classification. [14]

**Q.2 a)** “Statistics is the Science of human welfare”. Justify. [07]

**b)** Two judges in beauty competition rank the 12 entries as follows: [07]

X	1	2	3	4	5	6	7	8	9	10	11	12
Y	12	9	6	10	3	5	4	7	8	2	11	1

Estimate Rank Correlation Coefficient.

**Q.3** Obtain the equation of two lines of regression for the data given below: [14]

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

**Q.4 a)** Construct less than ogive curve for the data given below: [07]

Class Interval	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25
Frequency	5	10	15	8	7

**b)** Find the square root of 12 by Newton-Raphson method (correct up to 4 decimal places). [07]

**Q.5** Write short notes on **ANY TWO** of the following: [14]

- a) Characteristics of Numerical computing
- b) Scatter diagram
- c) Lagrange’s Interpolation

**Q.6** What are the properties of median? Following are the marks obtained by a batch of 10 students in a certain class test in statistics (x) and Accountancy (y). [14]

Roll No.	1	2	3	4	5	6	7	8	9	10
X	63	64	62	32	30	80	47	46	35	28
Y	68	66	35	42	26	85	44	80	33	72

Estimate the median value of the subjects.

**Q.7** Describe algorithm to find root of the nonlinear equations by Bisection method and then find a real root of the equation  $x^3 - 4x - 9 = 0$  using bisection method. [14]

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