

Faculty of Science
B.Sc. (Statistics) I Year, CBCS –I Semester
Regular Examinations, Dec/Jan 2019-20
Paper –I (DISCRIPTIVE STATISTICS AND PROBABILITY)

Time: 3 Hours

Max Marks: 80

Section –AI. Answer **EIGHT** from the following questions (**Two from each part**) (8x4=32 Marks)**PART-A**

1. Write short notes on measures of dispersion.
2. Define Kurtosis .Obtain the limits for Bowleys co-efficient of Skewness.
3. Find Median for the following distribution.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	5	8	7	12	28	20

PART-B

4. Explain the axioms of probability.
5. A bag contains 4-Green , 6-Black and 7-White balls. A ball is drawn at random. What is the probability that it is either a green or black ball.
6. Define Conditional Probability

PART-C

7. Define a random variable and write its properties
8. Define (i) Probability Mass Function (pmf). (ii) Probability Density Function (pdf).
9. A continuous random variable X follows the probability law:

$$f(x) = Ax^2 ; 0 < x < 1$$

Determine A and find the probability that

- (i) X lies between 0.2 and 0.5 (ii) X is less than 0.3

PART-D

10. Define Mathematical Expectation and State and prove multiplication theorem of mathematical expectation.
11. Write the statement of Cauchy-Schwartz's inequality.
12. Define Characteristic function and write it's two properties.

Section-B

II. Answer the following questions. (4 X 12=48)

13. (a) Define Primary and Secondary data Explain the various methods to collect Primary and secondary data.

(OR)

- (b) Define Central Moments and Non-Central Moments. Obtain the relation to express Non-Central Moments in terms of Central and Non-Central Moments.