

Faculty of Science**B.Sc (Statistics) I- Year, CBCS-II Semester Backlog Examinations, Dec/Jan 2019-20****PAPER: Probability Distributions**

Time: 3 hours

Max Marks: 80

Section-A

- I. Answer any FIVE of the following questions. (5x4 = 20 Marks)
1. Obtain mean and variance of Poisson distribution.
 2. Obtain the Probability generating function of Negative Binomial distribution.
 3. Write a short note on Lack of memory of Geometric distribution.
 4. Define Hyper geometric distribution.
 5. Define Gamma distribution.
 6. Define Beta distributions of first kind and second kind.
 7. Discuss real life applications of cauchy distributions.
 8. Write a short note on Weak law of large numbers and Central limit theorem.

Section-B

- II. Answer the following questions . (4x15 = 60 Marks)
9. (a) Derive the Recurrence relation for moments of Poisson distribution and hence find the Moments?
(OR)
(b) Obtain the mean and variance of Hypergeometric distribution.
- 10.(a) Obtain the Cumulant generating function of Binomial distribution and hence find first four cumulants.
(OR)
(b) Obtain the Moment generating function of Geometric distribution and hence find its mean and variance.
11. (a) Obtain the mean and variance of Normal distribution.
(OR)
(b) Obtain the mean and variance of Gamma distribution.
12. (a) Define Exponential distribution. Obtain the MGF of Exponential distribution and hence find its mean and variance.
(OR)
(b) Define Rectangular distribution and obtain moments of Rectangular distribution. Derive it's M.G.F and Characteristic function.
