

Faculty of Science
B.Sc (Statistics)I-Year, CBCS –II Semester
Regular Examinations –June/July, 2022
PAPER-II: Probability Distributions

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any *eight* of the following (8x4=32 Marks)
1. Define Bernouli Variable with an example
 2. Show that for Binomial distribution mean is greater than variance
 3. Show that the difference between the poissonvariates is not a poissonvariate
 4. Derive the moments of Binomial distribution from Negative binomial distribution
 5. Explain the memoryless property of Geometric distribution
 6. Explain the Mass function of Hypergeometric distribution with an example
 7. Suppose $x \sim U(2,6)$ then find mean and variance
 8. Find the mean deviation from mean of normal distribution
 9. Explain the Area property of normal distribution
 10. Find the MGF of exponential distribution. Hence find mean and Variance
 11. Explain the Reproductive property of Gamma distribution
 12. Define convergence in Law and Almost sure in probability

Section-B

- II. Answer the following (4x12=48 Marks)
13. (a) Define Binomial distribution .Explain the Recurrence relation for its moments also find its moments
(OR)
(b) Stating the assumptions show that poisson distribution is limiting form of Binomial distribution.
 14. (a) Find the PGF of Negative binomial distribution. Hence find μ_3
(OR)
(b) Stating the assumptions show that Hyper geometric distribution is a limiting form of binomial distribution
 15. (a) Define Normal distribution. Show that mean, median and mode are equal.
(OR)
(b) Show that Normal distribution is limiting form of Poisson distribution.
 16. (a) Define Beta distribution of second kind. find its Harmonic Mean
(OR)
(b) Define Cauchy distribution. Find its characteristic function
