ST 4501 DISTRIBUTION THEORY – APRIL 2019

Max Marks 100

Part – A

Answer any Four Questions (4 x 10 =40)

1. Define Binomial distribution and obtain the mean and variance.
2. Define poisson distribution and obtain the mean variance.
3. Show that exponential distribution satisfies the lack of memory property.
4. State and prove the additive property of poisson distribution.
5. Obtain the mean and variance of Beta distribution of first kind.
6. Obtain the MGF of Normal distribution.
7. Obtain the mean and variance of Uniform distribution of the continuous type.
8. Show that binomial tends to poisson under some conditions.

Part – B

Answer any Three questions (3 x 20 = 60)

9. Obtain the recurrence relation for the central moments of Binomial distribution.
10. Derive the MGF of Gamma distribution. Hence obtain the mean and variance.
11. State and prove central limit theorem for *i.i.d.* random variables.
12. Show that for normal distribution

    Mean = Median = Mode
13. Derive the *pdf* of t – distribution.
14. Obtain the mean and variance of hyper Geometric distribution.