B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
Core Major - Paper
DISTRIBUTION THEORY

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define Geometric distribution.
2. Find the mean of Poisson distribution.
3. Show that the difference of two independent Poisson variates is not a Poisson variate.
4. Define exponential distribution.
5. Obtain the m.g.f. of Gamma distribution.
6. What is standardized Weibull distribution?
7. Define Convergence in probability.
8. Write the characteristic function of Normal distribution.
9. Define order statistic.
10. State the conditions for the existence of a binomial variate.
11. Define Weak law of large numbers.
12. Define Laplace distribution.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. State and prove the additive property of Cauchy distribution.
14. Find the moment generating function of Geometric distribution and hence find its mean.
15. Find the marginal distribution of x from bivariate normal distribution.
16. Derive the probability density function of a single order statistic.
17. State and prove any two properties of moment generating function.
18. Find the distribution of median in order statistic.
19. Derive Poisson distribution as a limiting case of Binomial distribution.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Obtain the recurrence formulae for the moments of Binomial distribution and hence find the variance.

21. Define Beta distribution of first kind. Also obtain its mean and variance.

22. Derive DeMoiver's Laplace Theorem.

23. Obtain Mean, Median and Mode of a Normal distribution.

24. State and prove Linderberg-Levy central limit theorem for i.i.d random variable.

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