B.Sc.. DEGREE EXAMINATION,NOVEMBER 2018
I Year II Semester
Core Major - Paper III
DISTRIBUTION THEORY - I

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

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

Answer any **TEN** questions

1. Define Bernoulli distribution.
2. What is the moment coefficients of skewness of the binomial distribution?
3. Show that, Poisson distribution is a legitimate probability distribution.
4. Write any two examples of Poisson distribution
5. What is the median of geometric distribution?
6. Distinguish, negative binomial distribution and binomial distribution.
7. What is the relation between negative binomial and geometric distribution?
8. Define uniform distribution
9. Define standard normal distribution.
10. Write the skewness and kurtosis of normal distribution
11. Write any two properties of Normal distribution
12. State the Poisson distribution as the limiting form of binomial distribution.

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

Answer any **FIVE** questions

13. Derive the characteristic function of Binomial distribution.
14. Show that, the additive property of Poisson distribution.
15. Derive the cumulant generating function of geometric distribution.
16. State and prove reproductive property of the negative binomial distribution
17. Show that binomial distribution as limiting form of hyper geometric distribution
18. Derive MGF of uniform distribution
19. Derive mode of normal distribution.

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

Answer any **THREE** questions

20. Derive recurrence formula for the central moments of the Binomial distribution and Find the first four moments.
21. Show that, Poisson distribution as the limiting form of binomial distribution.
22. Explain the memoryless property of geometric distribution and its converse.
23. Derive the mean and variance of hypergeometric distribution
24. Derive mean and variance of normal distribution.

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