B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
I Year II Semester
Distribution Theory - I

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

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

Answer any **TEN** questions

1. Write the M.G.F. of Uniform distribution.
2. Define Binomial distribution.
3. Write down the characteristic function of Binomial distribution.
4. Give the M.G.F of Poisson distribution.
5. What is the probability generating function of poisson distribution?
6. Define Geometric distribution.
7. If Mean $<$ variance, then it follows_____distribution.
8. Give the mean and variance of hyper geometric distribution.
9. Write the recurrence relation for the hyper geometric distribution.
10. Define continuous Uniform distribution.
11. A linear combination of independent normal variate is a _____.
12. Write the skewness and kurtosis of normal distribution.

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

Answer any **FIVE** questions

13. Comment on the following: Mean of a binomial distribution is 3 and variance is 4.
14. Derive the additive property of Binomial distribution.
15. Derive the Mode of Poisson distribution.
16. Prove that the Poisson distribution is a limiting case of Negative Binomial.
17. Explain the factorial moments of hyper geometric distribution.
18. List out the importance of normal distribution.
19. If X is uniformly distributed with mean 1 and variance $\frac{4}{3}$, Find P(X$<$0).

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

Answer any **THREE** questions

20. Derive the moment generating function of Binomial distribution.
21. Derive the recurrence relation for moments of the Poisson distribution.
22. State and prove the Lack of Memory property of Geometric distribution.
23. Obtain moment generating function of multinomial distribution.
24. Derive the M.G.F of normal distribution.

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