B.Sc. DEGREE EXAMINATION,APRIL 2019
II Year III Semester
Distribution Theory-II

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

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

Answer any **TEN** questions

1. Define random variable?
2. Define probability distribution function?
3. Define geometric distribution?
4. Define multinomial distribution?
5. State the properties of normal distribution?
6. Define Gamma distribution?
7. State the sampling distribution of student's t?
8. Define F distribution?
9. State central limit theory?
10. State the relationship between F and chi-square distribution?
11. Define Student t statistics.
12. Define Hypergeometric distribution.

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

Answer any **FIVE** questions

13. Explain the transformation of two dimensional random variable?
14. Explain in detail about probability function of discrete or continuous random variable?
15. Define MGF for binomial distribution?
16. Derive first four moments of negative binomial distribution?
17. State and prove additive property of Gamma distribution?
18. Derive the constant of t distribution?
19. Derive the Poisson distribution as a limiting case of binomial distribution?

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

Answer any **THREE** questions

20. Derive lack of memory property?
21. Derive moment are MGF of Geometric distribution?
22. Derive median and mode of Normal distribution?
23. Define Beta distribution and also derive the constant of Beta distribution?
24. Derive the relationship between F and chi-square distribution?

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