

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

B.Sc. Statistics - END SEMESTER EXAMINATIONS APRIL - 2024

SEMESTER - III

**20USTCT3005 - Distribution Theory-II**

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

**Section B**

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Explain Gamma distribution with parameters  $(\lambda, \mu)$  and Beta Distribution of 1<sup>st</sup> kind  $(\mu, v)$ .
2. Explain how will you derive the moment generating function of standard Logistic distribution.
3. Compute additive property of chi-square distribution.
4. State and prove the relationship between  $t$  and  $F$  distribution.
5. Explain how will you derive the distribution function of  $n$ th order statistic.
6. Compute the mean and variance of standard Weibul distribution.
7. Compute the moment generating function of Exponential distribution with the parameter  $\theta$
8. Determine the mean and variance of  $F$  Distribution.

**Section C**

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Explain how will you prove Memory Lacks property of Exponential distribution.
10. Compute mean and variance of Log normal distribution.
11. Determine the moment generating function of Chi-square.
12. Compute the pdf of Fisher's  $t$  distribution.
13. Determine the distribution of range of order statistic.

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