LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

SECOND SEMESTER – APRIL 2017

16UST2MC01- CONTINUOUS DISTRIBUTIONS

Date: 22/04/2017 Dept. No. Max. : 100 Marks
01:00-04:00

Part – A

Answer **ALL** questions: **(10*2=20 Marks)**

1. Define rectangular distribution.
2. State M.G.F. of uniform distribution.
3. Write any two characteristics of normal distribution.
4. Give the mean and variance of exponential distributions.
5. Define Gamma distribution.
6. Give the additive property of Cauchy distribution.
7. Give the uses of t-statistic.
8. Define chi-square distribution.
9. Write down the p.d.f. of a first order statistic.
10. State Lindeberg-Levy theorem.

Part – B

Answer any FIVE Questions **(5*8=40 Marks)**

11. If X is uniformly distributed with mean 1 and variance 4/3, find $P(X) < 0$
12. Derive the M.G.F. of normal distribution.
13. Show that the exponential distribution *lacks memory*.
14. Prove the additive property of Gamma distribution.
15. Bring out the relationship between **t** and **F** distriburion.
16. Derive the joint distribution r^{th} order and s^{th} order statistic.
17. Explain stochastic convergence in detail.
18. Obtain Mean and variance of Gamma Distribution.

Section - C

Answer any **TWO** Questions **(2*20=40 Marks)**

19. Derive the pdf of **t** – distribution.
20. Obtain the M.G.F of bivariate normal distribution.
21. State and prove Lindeberg-Levy Theorem.
22. Define an order statistic. Obtain the density function of range with the density $f(x)$

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