M.Sc DEGREE EXAMINATION,APRIL 2019
I Year I Semester
Statistical Inference - I

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. What is consistency?
2. State unbiassedness.
3. State type II censored Data.
4. Define completeness.
5. Write down any two properties of maximum likelihood estimator.
6. Define type I censored data.
7. What is sufficient statistic?
8. Define fiducial interval.
9. When a prior is said to be conjugate?
10. State Baye's rule.
11. Give two examples for an exponential family.
12. What are the methods of estimation?

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. State and prove Chapman-Robbins inequality.
14. Establish Rao Blackwell theorem.
15. Explain the computational steps of EM algorithm.
16. Describe the method of maximum likelihood estimation in the case of censored data with examples.
17. Explain minimax estimation with an example.
18. Discuss the method of minimum Chi-square estimation
19. Explain Bayesian interval estimation.

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

Answer any **THREE** questions

20. State and prove Cramer –Rao inequality.
21. State and establish Lehmann-Scheffe theorem.
22. Explain method of moments in detail with an example.
23. Obtain confidence interval for the parameters of Normal distribution.
24. Obtain Bayesian posterior estimate for Poisson distribution with parameter θ.

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