15152

M.Sc. DEGREE EXAMINATION, NOVEMBER 2016.

FIRST SEMESTER

STATISTICS

Paper II — ESTIMATION THEORY

Time : Three hours | Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. Explain the point estimation.
2. Explain the concept of consistency.
3. Explain the concept of sufficiency in single parameter case.
4. State Fisher-Neyman factorization theorem.
5. State Cramer-Huzurbazar theorem.
6. Discuss the solution of likelihood equations.
7. Explain the concept of censoring and truncation.
8. Define censored distribution.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. State and prove Cramer-Rao inequality.

Or

10. Explain the Chapman-Robin's inequality.

11. Discuss distributions admitting sufficient statistics.

Or

12. State and preve Rao-Blackwell theorem.

13. Discuss the method of maximum likelihood.

Or

14. Explain the connection between MLEs and efficient estimators.

15. Explain type I and type II censoring with examples.

Or

16. Obtain MLE's of normal distribution from a censored distribution.
