

15151

M.Sc. DEGREE EXAMINATION, OCTOBER/NOVEMBER 2018.

FIRST SEMESTER

Statistics

Paper I — PROBABILITY AND DISTRIBUTIONS

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. Describe minimal sigma field with example.
2. Explain Borel function.
3. Explain almost sure function.
4. Explain about characteristic function and its properties.
5. Derive Law of large numbers.
6. Discuss about compound Poisson distribution.
7. Write about partial correlation.
8. Deduce C.F. of multivariate normal distribution.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

UNIT I

9. Describe Lebesgue-Stieltjes measures and their properties.

Or

10. Discuss about induced sigma field and explain its applications.

UNIT II

11. State and prove inversion theorem.

Or

12. State and prove central limit theorem.

UNIT III

13. Derive Kolmogorov's sun.

Or

14. Explain Laplace distribution and derive its m.g.f.

UNIT IV

15. Derive non-central t -distribution.

Or

16. Explain distribution of order statistics from exponential distribution.

