

(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. Give a note on random variables.
2. What is multivariate distribution?
3. Describe the importance of sampling.
4. What is the purpose of antithetic variables?
5. Write about re-sampling paradigms.
6. List the standards errors of bootstrap.
7. What is cross validation?
8. Describe the advantages and disadvantages of jackknife in sample surveys.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. Discuss the concept of Stochastic Simulation on Multivariate distribution of variables with an example.

Or

10. Explain the process of stochastic simulation as simple queues.

11. What are Monte Carlo simulation methods? Explain with an example.

Or

12. Give an introduction to Gibbs sampling and explain its implementation, variations and extensions.

13. Explain about the various methods bootstrapping.

Or

14. Discuss the advantages and disadvantages and applications of bootstrapping.

15. Give an introduction to jackknife re-sampling technique and explain with an example.

Or

16. What is the Purpose of cross-validation? Discuss the Common types of cross-validation with its Applications.

