

### Recommended Books:

1. Gupta.S.C. & Kapoor, V.K. : Fundamentals of Mathematical and Statistics, Sultan Chand & Sons, New Delhi
2. Kapur J.N. & Saxena H.C. : Mathematical Statistics S. Chand & Company Ltd., New Delhi.

### Reference Books:

- Singh, J. : Statistical Inference (Hindi edition) Madhya Pradesh Hindi Granth Academy, Bhopal.
- Freund J.E. (2001) : Mathematical Statistics Prentice Hall of India
- Goon A.M. : An out lines of Statistical Theory Vol. I & II, World Press, Calcutta
- Gupta, M.K. and Das Gupta B. (1991)

## PAPER - III APPLIED STATISTICS

**Note** The question paper will be divided into three sections A, B and C as follows:

**Section A** In this section, ten questions will be set taking two questions, from each unit. Each question will be of short answer type not exceeding 20 words and will carry 1/2 mark. The candidate will be required to attempt all the questions (aggregating 5 marks).

**Section B:** In this section, ten questions will be set taking two questions from each unit. The answer of each will not exceed 250 words or two and a half page. Each question will be of 5 marks. The candidate will be required to attempt five questions in all taking one question from each unit (aggregating 25 marks).

**Section C:** In this section, four questions will be set covering all the five units and whose answers shall not exceed 500 words or five pages each. Each question may have sub parts in it and will carry 10 marks. The candidate will be required to attempt any two questions (aggregating 20 marks).

### UNIT-I

Theory of curve Fitting: Method of least squares, fitting of straight line, parabola, Kth degree polynomial, exponential and logarithmic curves (reducible to linear forms). Most plausible solution of linear equations.



## UNIT-II

Linear correlation and regression, concept of intraclass correlation, Spearman's rank correlation.

## UNIT-III

Partial Correlation coefficient Multiple correlation coefficient and multiple regression for three variables only.

## UNIT-IV

Time series and its components, methods of determining trend and seasonal components.

## UNIT-V

Index Numbers: Problems involved in the construction of Index numbers, types of index numbers, construction of index numbers by aggregate methods and price relative methods, chain indices.

Requisites of an ideal index number. Uses and limitation of the index numbers. Errors in index numbers. Base shifting, splicing and deflating concepts, cost of living and wholesale price index numbers.

### Recommended Books:

1. Gupta S.C. and Kapoor V.K. : Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.

2. Gupta S.C. and Kapoor V.K. : Fundamentals of Applied Statistics, Sultan Chand & Sons, New Delhi

3. Kapur, J.N. and Saxena H.C. : Mathematical Statistics, S.Chand & Company Ltd., New Delhi.

4. Goon, A.M., Gupta, M.K. and Das Gupta B. (1991) : Fundamentals of Statistics Vol. I & II World Press, Calcutta