

**PAPER - III**  
**COMPUTATIONAL TECHNIQUES &**  
**OFFICIAL 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**

Statistical Organizations in India Central Statistical Organization, National Sample Survey Organization, their functions and publications, Agricultural Statistics, Area and Yield Statistics, Trade Statistics,

Statistical Organizations in Rajasthan, their functions and publications.

**UNIT - II**

Linear Programming: Definition of Linear Programming Problem (LPP), formulation of LPP, Graphical method (for two variable), Simplex computational procedure and Duality.

**UNIT - III**

Theory of Finite Differences: Operator  $\Delta$ ,  $E$  with their properties, Problems of identities involving  $\Delta$  &  $E$ , Factorial function; Newton-Gregory's forward and backward interpolation formulae, Estimation of missing value in equal intervals.

**UNIT - IV**

Theory of divided differences and its properties, Newton's divided difference & Lagrange's interpolation formulae, inverse interpolation by making use of Lagrange's formula.

**UNIT - V**

Numerical Integration : Trapezoidal rule, Simpson's 1/3rd & 3/8th rule, Weddle's rule and related problems.

**Recommended Books:**

1. Saxena H.C. : Finite Differences and Numerical Analysis, S.Chand & Company Ltd., New Delhi.