

UNIT - V

theory of Attributes: Class frequencies and their order (upto three attributes only), consistency of data, association and independence of attributes. Yule's coefficient of association and coefficient of colligation.

Recommended Books :

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

Reference Books

1. Gokhroo, D.C. : Mathematical Statistics (Hindi
& Saini, S.R. edition), Navkar Prakashan,
Ajmer
2. Gupta, S.P. : Statistical Methods, Sultan
Chand & Sons, New Delhi.
3. Rao N.S., Suthar : Business Statistics (Hindi
S.P. and Gupta edition), Alka Publication,
S.L. Ajmer

PAPER - II PROBABILITY THEORY

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 not 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

Random experiment, sample space, events, elements of an event, union and intersection of events, mutually exclusive, exhaustive, independent and equally likely events. Classical and Statistical definitions of probability and simple problems, Axiomatic approach

to probability. Addition law of probability for two or more events.

UNIT - II

Conditional probability, Multiplication law of probability, Statistical independence of events, Baye's theorem and its simple applications.

UNIT - III

Random Variable Discrete and continuous random variables, Probability mass and density functions, joint, marginal and conditional probability functions, Distribution functions.

UNIT - IV

Mathematical Expectation Definition of expectation, Addition and Multiplication laws of expectation, Moments in terms of expectation, variance and covariance for the linear combination of random variables. Elementary idea of conditional expectation. Schwartz's inequality.

UNIT - V

Moment generating and Cumulants generating functions with properties, Characteristic function with properties (without proof).

Recommended Books:

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

2. Kapur J.N. and Saxena H.C. : Mathematical Statistics S.Chand & Company Ltd., New Delhi.
3. Goon A.M., Gupta M., K. Dasgupta B (1999) : Fundamentals of Statistics, Vol.II, World Press Calcutta

Reference Books :

1. Gokharoo D.C. and Saini, S.R. : Mathematical Statistics (Hindi edition), Navkar Prakashan, Ajmer.
2. Bhargava, S.L. & Agarwal, S.M. : Mathematical Statistics (Hindi edition), Jaipur Publishing House, Jaipur.
3. David, R. (1996) : Elementary Probability, Oxford Press.
4. Bhat B.R., Sri-venkatramana T & Rao Madhava, K.S. (1977) : A Beginner's Text, Vol II New Age International (P) Ltd