Subject Code : SYS3

FIRST ALLIED PAPER – III – MATHEMATICS – III
(PROBABILITY AND STATISTICS)

UNIT – I

Theory of Probability – different of Probability sample space Probability of an event – independence of events – theorems on Probability – conditional Probability – Baye's Theorem.

UNIT – II

Random variables – distribution functions – Discrete and continuous Random variables – Probability mass and density functions of Random variables – Joint Probability distributions.

UNIT – III

Expectation – Variance – Covariance – Moment generating functions – theorems on moment generating functions – moments, various measures.

UNIT – IV

Correlation and Regression – properties of correlation and regression coefficients – numerical problems for finding the correlation and regression coefficients.

UNIT – V

Theoretical Discrete and Continuous distributions: Binomial, Poisson, Normal distribution – Moment generating functions of these distributions – additive properties of these distribution – recurrence relations for the moments about origin and mean for the binomial, poisson and normal distribution – properties of normal distributions – relation between binomial and poisson and normal distribution.

Text Book:

Fundamentals of Mathematical statistics: Gupta, S.C.& Kapoor, V.K.Sultan Chand & Sons , New Delhi (1994) Chapter 3 : Sec.3.9, Chapter 4 (Omit secs 4,8,4.10) Chapter 5 (Omit secs. 5.6, 5.7) Chapter 6 (Omit all the inequalities and related problems) Chapter 7 (Omit 7.2.8 to 7.2.11, 7.3.9) Chapter 8: The relevant topics connected to Normal distribution.

Reference Book

1. Theory and problems of Probability: Seymour Lipschutz, Schaum's outline series, SI(metriced) McGraw Hill Book Co., Singapore (1987)
2. Problems in the theory of Probability: Sevatyanov. S. Chistyanov. V, Zubkov.A, MIR Publishers Moscow (1985).
3. Practical statistics: Thambidurai. P.Rainbow, Publications, CBE (1991).