Syllabus

PANJAB UNIVERSITY, CHANDIGARH

B.A./B.Sc. Sem. V

Paper III : PROBABILITY THEORY

Max. Marks : 30

Time : 3 Hrs.

Note : 1. The syllabus has been split into two Units : Unit-I and Unit-II. Four questions will be set from each Unit.

2. A student will be asked to attempt five questions selecting at least two questions from each Unit. Each question will carry 6 marks.
3. The teaching time shall be five periods (45 minutes each) per paper per week including tutorial.
4. If internal assessment is to be conducted in the form of written examinations, then there will be only one written examination in a Semester.

SECTION - A

Review of notion of Probability, conditional Probability and independence, Bayes' Theorem.

Random Variables : Concept, probability density function, cumulative distribution function, discrete and continuous random variables, expectations, mean, variance, moment generating function, skewness and kurtosis.

Discrete Random Variable : Bernoulli random variable, binomial random variable, negative binomial random variable, geometric random variable, Poisson random variable.

SECTION - B

Continuous Random Variables : Uniform random variable, exponential random variable, Beta random variable, Gamma random variable, Chi-square random variable, normal random variable.

Bivariate Random Variables : Joint distribution, Joint and conditional distributions, Conditional Expectations, Independent random variables, the correlation coefficient, Bivariate normal distribution.