

**1. PROBABILITY AND DISTRIBUTION****9**

Axioms of probability – Conditional probability – Total Probability – Random variables – Binomial, Poisson and Normal distributions with moment generating functions – Correlation – Regression.

**2. SAMPLING DISTRIBUTIONS AND ESTIMATION****9**

Sampling distributions – Estimation of parameters – Method of moments – Principle of least squares – Method of maximum likelihood.

**3. TESTING OF HYPOTHESIS****9**

Basic definitions of statistical hypothesis – Tests based on Normal, t, chi-square and F distributions for mean, variance and proportion.

**4. DESIGN OF EXPERIMENTS****9**

Analysis of variance – One way and two way classifications – Completely randomized design – Randomized block design – Latin square design –  $2^2$  factorial design

**5. TIME SERIES ANALYSIS****9**

Characteristics and representation – Moving averages – Exponential smoothing – Auto regressive processes

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