MT-331 PROBABILITY & STATISTICS

STATISTICS:

Introduction, Types of data & variables, presentation to data, object, classifications, Tabulation, Frequency distribution, Graphical representation, Simple & Multiple Bar diagrams, Sartorial & Pie-Diagram, Histogram, Frequency Polygon, Frequency Curves & their types.

MEASURES OF CENTRAL TENDENCY AND DISPERSION:

Statistics Averages, Median Mode, Quartiles, Range, Moments, Skew ness & Kurtosis, Quartile Deviation, Mean Deviation, Standard Deviation, Variance & its coefficient, Practical Significance in related problems.

CURVE FITTING:

Introduction, fitting of a first and second degree curve, fitting of exponential and logarithmic curves, related problems. Principle of least squares, Second order Statistics & Time series not in bit detail.

SIMPLE REGRAESSION & CORRELATION

Introduction, Scatter diagrams, Correlation & its Coefficient, Regression lines, Rank Correlation & its Coefficient, Probable Error (P.E), Related problems.

SAMPLING AND SAMPLING DISTRIBUTIONS

Introduction, Population, Parameter & Statistic, Objects of sampling, Sampling distribution of Mean, Standard errors, Sampling & Non-Sampling Errors, Random Sampling, Sampling with & without replacement, Sequential Sampling, Central limit theorem with practical significance in related problems.

STATISTICAL INFERENCE AND TESTING OF HYPOTHESIS

Introduction, Estimation, Types of Estimates, Confidence interval, Tests of Hypothesis, Chi-Square distribution/test, one tails & two tails tests. Application in related problems.

PROBABILITY

Basic concepts, Permutation & Combination, Definitions of probability, Laws of probability. Conditional probability, Baye's nile. Related problems in practical significance.

RANDOM VARIABLES

Introduction, Discrete & Continuous random variables, Random Sequences and transformations. Probability distribution, Probability density function, Distribution function, Mathematical expectations, Moment Generating Function (M.G.F.), Markove random walks chain/ Related problems.

PROBABILITY DISTRIBUTIONS

Introduction, Discrete probability distributions, Binomial Poisson, Hyper geometric & Negative binomial distributions. Continuous probability distribution, Uniform, Exponential & Normal distributions & their practical significance.

Recommended Books

1. Advance Engineering Mathematics — Erwin Kreyszig
2. Mathematical Statistics — Hogg & Craig
3. Introduction to Statistics — Walpole
4. Exploring Statistics — Larry J. Kitchens