VEER NARMAD SOUTH GUJRAT UNIVERSITY

S.Y. B.B.A. Programme - semester - III

Paper – XII - Quantitative Techniques – II

(Effective from June-2011)

OBJECTIVE:

The course is designed to impart the basic knowledge of Statistics, to acquaint the students with the practical utility of the subject with special reference to Business and Commerce and equip them with those statistical tools and techniques which shall provide them the necessary background for the applications of these techniques in different areas of management.

1. (20%)

(A) PROBABILITY:

Mathematical (classical) and axiomatic (modern) definition of probability of an event, law of addition and law of multiplication of probability (w/o proof), independent events, conditional probability, simple examples.

(B) ELEMENTARY PROBABILITY DISTRIBUTIONS :

Defination of a random variable (discrete & continuous); Mathematical expectations; Theorems of addition & multiplication of expectation (w/o proof),simple examples; Defination of probability distribution of a random variable, Binomial, Poisson and Normal

2 (20%)

(A) CORRELATION (FOR TWO VARIABLES ONLY) :

Meaning, definition 7 properties of product moment correlation coefficient, Its computation from ungrouped data, Spearman's Rank correlation coefficient including tie ranking,its computation and interpretation.

(B) REGRESSION (FOR TWO VARIABLES ONLY) :

Lines of regression, Fitting of regression lines by the method of least squares (w/0 proof), Regression coefficients and their properties, their computation and interpretation.

3 TEST OF HYPOTHESIS : (30%)

(A) Simple & composite hypothesis, two types of errors, critical region, level of significance.

(B) LARGE SAMPLE TESTS :

Testing the significance of (i) single mean, (ii) difference between two means, (iii) single proportion, (iv) difference between two proportions.

(C) ALL SAMPLE TESTS:

T-test for (i) single mean and (ii) difference between two means (including paired t-test); f-test; x^2-test for (i) population variance, (ii) goodness of fit, (iii) independence of attributes; Yate's correction for continuity of x^2-test.

(D) ANALYSIS OF VARIANCE:

Analysis of variance – one-way and two-way classifications with one observation per cell (w/o rigorous mathematical treatment), simple examples.

4 APPLIED STATISTICS: (30%)

(A) TIME SERIES ANALYSIS:

Definition, components of time series, estimation of trend by (i) moving average method, (ii) method of least squares, estimation of seasonal component by(i) simple average method (ii) ratio to moving average method.

(B) ELEMENTRY DECISION (THEORY):

Meaning and scope , decision framework, decision tree, decision under uncertainty, expected opportunity loss, expected monetary value, expected value of perfect information, maximin & minimax criteria.

(C STATISTICAL QUALITY CONTROL :

Concept of quality and statistical quality control, x & r charts for variables, pandnp-chart for fraction defectives, c-chart for no. of defects per unit.

(D SAMPLING METHODS:

Sample survey & its advantages over survey; Basic concept of simple random sampling and statified random sampling. Drawing a simple random sample (with or w/o replacement) and estimating its mean and variance.

REFERENCES :

1. Business Statistics : Gupta S P & Gupta M P , S Chand & Co.
2. Business Statistics : R S Bhardwaj , Excel Books
3. Fundamentals Of Mathematical Statistics : S C Gupta & V K Kapoor, Sultan Chand & Sons.
4. Fundamentals Of Applied Statistics : S C Gupta & V K Kapoor, Sultan Chand & Sons.
5. Statistical Methods In Managerial Decision :Mustafi , Mcmillan
6. Basic Statistics : B L Agrawal, New Age International Publishers
7. Statistical Methods In Business & Social Sciences : G V Shenoy & Madan Pant, Mcmillan
8. Statistics For Business & Economics : Honda, Mcmillan