VEER NARMAD SOUTH GUJARAT UNIVERSITY

B.C.A. Semester - III

Effective from year 2010-11

Paper – 301

Numerical and Statistical Methods

1. Numerical Methods

1.1 Introduction

1.2 Errors in numerical calculations

1.3 Solution of algebraic and transcendental equations

1.4 Methods like bisection, iteration, false position, Newton Rapson

1.5 Interpolation for equal and unequally spaced points

1.6 Numerical differentiation and integration

1.7 Solution of linear system of equations by gauss elimination gauss serial methods

2. Statistical Methods

2.1 Introduction

2.2 Presentation of statistical data
- 2.2.1 Types of variables
- 2.2.2 Univariate, bivariate and multivariate data
- 2.2.3 Univariate and bivariate frequency distributions

2.3 Measure of central tendency-mean, median and mode

2.4 Measures of dispersion (absolute as well as relative)
- 2.4.1 Mean deviation
- 2.4.2 Standard deviation
- 2.4.3 Coefficient of mean deviation and coefficient of variation

2.5 Correlation
- 2.5.1 Introduction
- 2.5.2 Types of correlation and scatter diagrams
- 2.5.3 Rank correlation coefficient

2.6 Regression
- 2.6.1 Concept of dependent and independent variables
- 2.6.2 Introduction to liner regression
- 2.6.3 Line of regression (with one independent variable)

- Methods should be explained conceptually and corresponding examples should be given.
- No proof should be given to any of the methods

Reference Books :

1. S.S.Sastry, Introductory methods of Numerical Analysis – PHI
2. Introduction to mathematical statistics – Hogg RV &Cralg AL Tata McGraw Hill
3. An introduction to the theory of statistics – Yule UG & Kendall MG – Chailes Griffin & Co.