VEER NARMAD SOUTH GUJARAT UNIVERSITY,

F.Y.B.COM.

MATHEMATICS FOR STATISTICS

(With Effect From Academic Year 2006-2007)

(1) CALCULUS (30%)

I) Limit and continuity :

Limit of function, meaning of $x \to \acute{\alpha}$, $x \to \infty$, $x \to 0$ and definition of $\lim_{x \to \acute{\alpha}} f(x) = I$

Proof of standard forms and illustrations, continuity of a function where f(x) is a polynomial of x and a ratio of two polynomials in x, D hospital rule for finding a limit of a function.

II) Differentiation

Definition of derivative of a function, Rule of derivative. Derivative of a function such as, x^n, a^x, e^x logx etc. Condition for existence of maxima and minima of function and its applications to problems related to business, commerce and economic. Chains rule of differentiation. Derivative of parametric function, composit function. partial differentiation.

III) Integration

Meaning, Different standard forms Integration by parts, Method of substitution integration by parts, definite integral, Rules for evaluation of definite integrats

(2) Progression (10%)

Sequence, arithmetic, geometric and harmonic progressions. Definition of n^{th} term and the sum of the first n terms. Determination of sum of squares, Cubes the first n terms. Relation between A.M., G.M., and H.M.

(3) Co-ordinate Geometry (10%)

i) Point

Distance between two points, Division of a line segment, Co-ordinates of the points which devid is the line joining two given points P (x_1, y_1,) and Q (x_2, y_2) internally and externally in the ratio m_1, m_2

ii) Straight Line

Slope of a straight line, intercepts of a line procedure of obtaining different from of Straight Line.

(4) Probability (10%)

Definition, Classical and relative frequency approach to probability, laws of probability, conditional probability and Bayes theorem with prof for two mutually exclusive probability and its application.

(5) Expectation and Moments (10%)

Definition of descrete random variable, Continuous random variable, Expectation of a random variable and its properties, Moments, co-efficient kurtosis M.G.F. and it's properties.

(6) Standard univariate distribution (30%)

Binomial, Poisson and normal distributions and their properties, M.G.F. and obtaining mean and variance.

Books :

Pavale & Bhagwat : The Element at Calculus
: popular Prakasan, Bombay

Patel A.G. & Patel G.C. : Business Mathematics
: Atul Praksan, Ahd.,

Gupta S.P. : Statistical Method
: S. chand & Co., New Delhi.

Gupta S.C. : Fundamental of mathematical statistics
: sultan chand & sons.

Shah H.D. : Ganitik Ankada shastra
: Granth Nirman Board, Ahd.,

Lewis J.P. : An Introduction to mathematics : Mac millon