

Syllabus of S.Y.B.Com (Statistics) Yearly  
VEER NARMAD SOUTH GUJARATA UNI-VERSITY, SURAT  
STATISTICS PAPER – I (PRINCIPAL& SUBSIDIARY)  
(IN FORCE FROM JUNE 2015-2016)

**1. MATRICES:** **(Weightage 15%)**

Definition of matrices, Definition of some special types of matrices (transpose, row, column, zero, unit, square, symmetric, skew-symmetric etc.); Addition, subtraction and multiplication of matrices (upto order 3) and laws related to it; Determinant of a square matrix and its evaluations, laws related to determinants; some examples, Inverse of a matrix; Use of matrices in solving system of linear equations (up to 3x3 matrix).

**2. MATHEMATICAL EXPECTATION:** **(Weightage 15%)**

Definition, Expectation of a function of a random variable; addition and multiplication theorem of Expectation; Expectation of a linear combination of random variables for discrete case only (no proof required); mean, variance and covariance in terms of Expectations (up to two variables only), some exercises related to discrete random variables.

**3. DEMOGRAPHIC METHODS:** **(Weightage 20%)**

**A:** Sources of demographic data: Census, Register, Ad-hoc Survey, Hospital Records, demographic profiles of Census in India. Measurement of Mortality- Crude Death Rate, Infant Mortality Rate, Age-Specific Death Rate, Standardized Death Rate. Life-tables: Complete life table, its main features, assumption, description and construction of life-tables, Mortality rate and Survival rate; some examples.

**B:** Measurements of Fertility & Population growth- Crude Birth rate, General Fertility rate, Specific Fertility Rate, Total Fertility rate. Measurements of Population Growth- Gross Reproduction Rate and Net Reproduction Rate.

**4. MOMENTS AND MOMENT GENERATING FUNCTION (M.G.F.):** **(Weightage 10%)**

Definition, raw & central moments; relation between raw and central moments; measures of central tendency, dispersion, skewness and kurtosis based on moments; some examples. Definition and important properties of m.g.f., m.g.f. of binomial, Poisson distributions (only formula and some examples).

**5. TESTING OF HYPOTHESIS & TESTING OF SIGNIFICANCE:** **(Weightage 20%)**

**A:** Statistical hypothesis (simple & composite), Test of a statistical hypothesis, null and alternative hypothesis, critical region, two types of errors, level of significance and power of the test; some examples.

