



**GOA UNIVERSITY**  
Taleigao Plateau

**SYLLABUS FOR GOA UNIVERSITY ADMISSIONS RANKING TEST (GU-ART) IN  
MASTER OF COMPUTER APPLICATIONS (MCA)**

**Section I (least difficult) and Section II (medium difficulty)** will consist of GENERAL ENGLISH (6 Questions)

Basic English Grammar, sentence structure, synonyms and antonyms, idioms and phrases, detecting misspelled words, comprehension

**ANALYTICAL ABILITY AND LOGICAL REASONING (24 questions)**

Series, Analogies, Relationships, Classification, Coding, Permutations and Combinations, Inference, Statement Analysis, Blood Relationships, Direction Sense, Profit and Loss, Averages, Percentages, Calendar, Clock, Time and Work, Speed and Distance, Assertions, Rule Detection, Reasoning and Decision Making.

**Section III (Most Difficult)**

**MATHEMATICS (20 questions)**

Data Representation and Manipulation in Computers: binary and hexadecimal representations, binary arithmetic: addition, subtraction, multiplication, division, simple arithmetic and two's complement arithmetic, Boolean algebra, Truth tables,

Set Theory: Concepts of sets – Union, Intersection, Cardinality, Elementary counting; permutations and combinations.

Probability and Statistics: Basic concepts of probability theory, Averages, Dependent and independent events, frequency distributions, measures of central tendencies and dispersions.

Algebra: Fundamental operations in algebra, expansions, factorization, simultaneous linear /quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, determinants and matrices.

Coordinate Geometry: Rectangular Cartesian coordinates, distance formulae, equation of a line, and intersection of lines, pair of straight lines, equations of a circle, parabola, ellipse, and hyperbola.

Calculus: Limit of functions, continuous function, differentiation of function, tangents and normals, simple examples of maxima and minima. Integration of function by parts, by substitution and by partial fraction; definite integrals, applications of definite integrals to areas.

Matrices and Vectors: Matrix Operations and Inverses, Position vectors, addition and subtraction of vectors, scalar and vector products and their applications to simple geometrical problems and mechanics.

Trigonometry: Simple identities, trigonometric equations properties of triangles, solution of triangles, heights and distances, general solutions of trigonometric Equations.