# NIMCET Syllabus

**Mathematics:** (40 Questions)

**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, 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.

**Vectors :** Position vector, 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.

**Analytical Ability and Logical Reasoning :** (55 Questions)

The questions in this section will cover logical situations and questions based on the facts given in the passage.

**Computer Awareness :** (10 questions)

**Computer Basics :** Organization of a Computer, Central Processing Unit (CPU), Structure of instructions in CPU, input/output devices, computer memory, back-up devices.

**Data Representation :** Representation of characters, integers and fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, multiplication, division, simple arithmetic and two's complement arithmetic, floating point representation of numbers, Boolean algebra, truth tables, Venn diagrams.

**General English :** (15 questions)

Questions in this section will be designed to test the candidate's general understanding of English language.

**There will be questions on the following topics :** Comprehension, Vocabulary, Basic English Grammar (like usage of correct forms of verbs, prepositions and articles), word power, synonyms and antonyms, meaning of words and phrases, technical writing