

# NIMCET Syllabus 2023

Subject	List of Topics
General English	Basic English Grammar
	Word Power
	Comprehension
	Vocabulary
	Meaning of words and phrases
	Technical Writing
	Synonyms and Antonyms
Analytical Ability and Logical Reasoning	Logical situation and questions based on the facts given in the passage
Mathematics	Trigonometry <ul style="list-style-type: none"><li>• Heights and distances</li><li>• Solution of triangles</li><li>• Simple identities</li><li>• General solutions of trigonometric equations</li><li>• Trigonometric equations properties of triangles</li></ul>
	Calculus <ul style="list-style-type: none"><li>• Simple examples of maxima and minima</li></ul>

	<ul style="list-style-type: none"><li>• Differentiation of function</li><li>• Definite integrals</li><li>• Limit of functions</li><li>• Tangents and normals</li><li>• Applications of definite integrals to areas</li><li>• Continuous function</li><li>• Integration of functions by parts, by substitution and by partial fraction</li></ul>
	<p>Vectors</p> <ul style="list-style-type: none"><li>• Scalar and vector products and their applications to simple geometrical problems and mechanics</li><li>• Position Vector</li><li>• Addition and subtraction of vectors</li></ul>
	<p>Algebra</p> <ul style="list-style-type: none"><li>• Fundamental operations in algebra</li><li>• Geometric and harmonic progressions</li><li>• Expansions</li><li>• Logarithms</li><li>• Simultaneous linear /quadratic equations</li><li>• Determinants and matrices</li><li>• Factorization</li><li>• Indices</li><li>• Arithmetic</li></ul>
	<p>Set Theory</p>

	<ul style="list-style-type: none"> <li>• Concept of sets – Union, Intersection, Cardinality, Element counting</li> <li>• Permutations and combinations</li> </ul>
	<p>Coordinate Geometry</p> <ul style="list-style-type: none"> <li>• Equations of a circle</li> <li>• Ellipse</li> <li>• Equation of a line</li> <li>• Rectangular Cartesian coordinates</li> <li>• Parabola</li> <li>• Hyperbola</li> <li>• Distance formulae</li> <li>• Intersection of lines</li> <li>• Pair of straight lines</li> </ul>
	<p>Probability and Statistics</p> <ul style="list-style-type: none"> <li>• Basic concepts of probability theory</li> <li>• Averages</li> <li>• Frequency distributions</li> <li>• Dispersions</li> <li>• Dependent and independent events</li> <li>• Measures of central tendencies</li> </ul>
Computer Awareness	<p>Data Representation</p> <ul style="list-style-type: none"> <li>• Venn diagrams</li> <li>• Binary and hexadecimal representations</li> <li>• Simple arithmetic and two's complement arithmetic</li> <li>• Representation of characters</li> </ul>

	<ul style="list-style-type: none"><li>• Truth tables</li><li>• Integers and fractions</li><li>• Boolean algebra</li><li>• Binary arithmetic: addition, subtraction, multiplication, division</li><li>• Floating-point representation of numbers</li></ul>
	<p>Computer Basics</p> <ul style="list-style-type: none"><li>• Central Processing Unit (CPU)</li><li>• Input/output devices</li><li>• Organization of a computer</li><li>• Back-up devices</li><li>• Structure of instructions in CPU</li><li>• Computer memory</li></ul>