प्री.एम.सी.ए. परीक्षा– 2025 हेतु पाठ्यक्रम

SYLLABUS FOR PRE. M.C.A.

The question paper will comprise of 150 objective type questions, which are to be answered in 03 hours. All questions will have 04 response (alternatives), out of which only one will be the correct answer. The candidate has to choose the response, which in his/her opinion is the correct answer and should mark in the OMR answer sheet to score full marks. Each correct answer will be awarded one mark.

The syllabus may be comprise of follwing board areas –

Mathematics (10+2) level	-	75 questions
Computer Awareness	-	30 questions
Analytical Ability & Logical Reasoning	-	30 questions
General Awareness	-	15 questions
Total		150 **questions**

The detailed Syllabus is as follows –

Mathematics –

- Algebra – Fundamental operations in Algebra Expansion, factorization, simultaneous linear quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations, surds,{p determinats, matrices and application to solution of simultaneous linear equations.
- Co-ordinate Geometry – Rectangular Cartesian co-ordinates equations of a line, mid point, intersection etc. equations of a circle, distance formula, pair of straight lines, parabola, ellipse and hyperbola, simple geometric transformations such as translation, rotation, scaling.
- Calculus – Limit of functions, continuous fuctions, differentiation of functions (s),Tangents and Normal, simple example of maxima and minima, integration of function by parts by substitution and by partial fraction, definite integral application to volumes and surfaces of frustums of sphere, cone cylinder, Taylor Series.
- Differential Equations – Differential equations of first order and their solutions, linear differential equations with constant coefficients, homogenous linear differential equations.
- Vector – Position vector 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, height and distance, inverse fuctions.
- **Probability and Statistics** – Basic concepts of probatility theory. Averages Dependet and independent events, frequency distributions and measures of dispersions, Binomial Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regressions.
- **Linear programming** – Formulations of simple linear programming problems, basic concepts of graphical and simplex methods.

Computer Awareness –

- **Computer Basics** – Organization of computer, Central Processing Unit (CPU), Structure of instructions in CPU, input output devices computer memory, memory organization, back-up devices.
- **Data Representation** – Representation of characters, integers, and fraction. Binary and hexadecimal representations, Binary Airthmetic: floating point representation of numbers, normalized floating point representation, Boolean algebra, truth tables, Venn diagrams.
- **Computer Architecture** – Block structure of computers, communication between processor and Input/Output devices interrupts.
- **Computer Language** – Assembly language and high level language, Multiprogramming and time sharing operating systems. Computer Programming in C.
- **Flow chart and Algorithms.**

Analytical Ability and Logical Reasoning -

- The questions in this section will cover reasoning visuo spatial reasoning.

General Awareness –

- This section will over questions to test the general awareness about business. Finance, industry, transportation, scientific,inventions, governace, healthcare and cultural dimensions etc.
