

# COMPETENCE IN SOFTWARE TECHNOLOGY (CST)

## MASTER OF COMPUTER APPLICATIONS (MCA)

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### Eligibility for Admission :

A Bachelor's degree in any subject or a diploma in engineering involving at least three years of study after the 10th standard or two years after the 12th standard. These diplomas should be recognised by a state government or the central government as engineering diplomas or other qualifications recognised by a state government or the central government as equivalent to a Bachelor's degree. In such cases the candidate concerned should provide proof of the Government recognition.

### Examination Centre :

Allahabad, Bangalore, Calcutta, Chennai, Coimbatore, Delhi, Goa, Hyderabad, Mumbai, Nagpur, Pune, Thiruvananthapuram, Visakhapatnam.

### Date of Examination :

January - February

### List of Institutions :

- (1) Goa University
- (2) Mumbai University at VJIT
- (3) SNDT Womens University

### SYLLABUS :

#### 1. General Aptitude (GA)

The main objective of this part is to assess the general aptitude of the candidate to pursue a technical profession.

#### TOPICS

**The questions in this part will cover :** logical reasoning, quantitative reasoning, visuo-spatial reasoning, high school mathematics, vocabulary, English comprehension and verbal ability. The text looks for a sound understanding of concepts and their applications rather than for rote memory and routine arithmetic skills. A good grasp of the following topics of high school mathematics (up to the 12th standard) will be useful :

**Arithmetic :** Ratios and Proportions, problems on time-work/distance-speed, percentage, etc.

**Basic Set Theory and Functions :** Set, relations and mappings.

**Algebra :** Fundamental operations in algebra, expansion, factorization, simultaneous linear/quadratic equations, indices, logarithms, permutation and combinations.

**Geometry :** Angles at a point and parallel lines, triangles, polygons of n sides, circles, geometric transformations : particularly similarity, rotation and reflection, areas.

**Trigonometry :** Trigonometric ratios, problems on heights and distances.

**Coordinate Geometry** : Rectangular Cartesian coordinates, equations of a line, mid-point, intersections etc., equations of a circle, distance formula, simple geometric transformations such as translation, rotation, scalling.

**Mensuration** : Areas, Triangle and Quadrilaterals, area and circumference o circles, volume and surface areas of simple solids such as cubesm spheres, cylinders and cones.

## **2. Computer Concept (CC)**

### **TOPICS :**

**Computer Basics** : Organization of a computer, characteristics of a computer, Central Processing Unit (CPU), structure of instructions in CPU, input/output devices, computer memory, primary memory and secondary memory, memory organization backup devices.

**Data Representation** : Representation of characters, integers and fractions, binary and hexadecimal representations.

**Binary Arithmetic** : Addition, subtraction, division, multiplication, signed arithmetic and twos complement arithmetic, floating point representation of numbers, normalized floating point representations.

**Foundations** : Boolean algebra, truth tables and Venn diagrams.  
Computer architecture, block structure of computers, communication between processor and memory, communication between processor and I/O devices, interrupts, multiprogramming, and virtual memory.

**Computer Languages** : Assembly language and characteristics of high level languages.

**Operating System Basics** : Multiprogramming and timesharing operating systems.

**Programming Using A Subset of C** : The candidate will not be required to write programs and there will not be any questions on syntax. But candidates should be able to read and understand programs.

involving the following : the assignment statement, blocks, the input-output statements (scanf and printf), relation and arithmetic operators, conditional statements and iterations.

**NIMS**  
**KANPUR**

**M.C.A. Entrance by RAM GOPAL SINGH**

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