



GOVERNMENT OF MAHARASHTRA

STATE COMMON ENTRANCE TEST CELL, MAHARASHTRA STATE, MUMBAI

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MCA-CET 2021

Online Computer Based Test (CBT)  
Syllabus and Marking Scheme

Reference: - Letter from Directorate, Technical Education, Mumbai vide Letter No.2A/ADM/2020/316, Dated 05/11/2020.

2. Syllabus & Marking Scheme for Master of Computer Applications MAH-MCA-CET 2021

The Online CET would comprise 4 sections viz. Mathematics & Statistics, Logical / Abstract Reasoning, English comprehension and verbal ability and Computer Concepts of total 200 marks, with composite time of 90 minutes duration.

Syllabus :-

- Mathematics & Statistics:** The questions will cover the following topics of high school mathematics (up to the 12th standard)
  - Algebra : Fundamental operations in Algebra, Expansion, factorization, Quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations.
  - Co-ordinate Geometry : Rectangular Cartesian co-ordinates, equations of a line, mid point, intersections etc., equations of a circle, distance formulae, pair of straight lines, parabola, ellipse and hyperbola, simple geometric transformations such as translation, rotation, scaling.
  - Differential Equations: Differential equations of first order and their solutions, linear differential equations with constant coefficients, homogeneous linear differential equations.
  - Trigonometry: Simple identities, trigonometric equations, properties of triangles, solution of triangles, height and distance, inverse function.
  - Probability and Statistics : Basic concepts of probability theory, Averages, Dependent and independent events, frequency distributions, and measures of dispersions, skewness and kurtosis, random variable and distribution functions, mathematical expectations, Binomial, Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regression.
  - Arithmetic: Ratios and proportions, problems on time-work, distance-speed, percentage, etc.
  - Basic Set Theory and Functions: Set, relations and mappings.
  - Mensuration: areas, triangles and quadrilaterals, area and circumference of circles, volumes and surface areas of simple solids such as cubes, spheres, cylinders and cones.
- Logical / Abstract Reasoning:** This shall include the questions to measure how quickly and logically you can think. This section will cover logical situations and questions based on the facts given in the passage. This test shall check the problem solving capability of the candidate.
- English comprehension and verbal ability:** Questions in this section will be designed to test the candidate's general understanding of the English language. There will be questions on the topics such as Basic English grammar, vocabulary, comprehension, synonyms, antonyms, sentence correction, word & phrases, jumbled paragraphs.
- Computer Concepts**

Computer Basics : Organization of a 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 fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, division, multiplication, signed arithmetic and two's complement arithmetic, floating point representation of numbers, normalized floating point representation, Boolean algebra, truth tables, Venn diagrams.
  - Computer Architecture: Basics of Digital Logic, Block structure of computers, communication between processor and I / O devices, interrupts.
  - Computer Language: Fundamentals of Data & File Structures and high level language, Computer Programming in C, advanced concepts in programming.
  - Operating System basics

Marking Scheme and duration

Section	No of Questions	Marks per Question	Maximum Marks	Total Marks
Mathematics & Statistics	30	2	60	200
Logical / Abstract Reasoning	30	2	60	
English comprehension and verbal ability	20	2	40	
Computer Concepts	20	2	40	
The test will comprise of multiple choice objective type questions (Four Options)				
There is a negative marking system for this CET. Each correct answer will carry 2 marks. Each wrong answer will carry 0.5 negative marks. Unanswered questions will carry zero marks.				
Test Duration: 90 minutes				
Medium of CET: English				
Mode of Examination - Online				