



**GOVERNMENT OF MAHARASHTRA**  
**STATE COMMON ENTRANCE TEST CELL, MAHARASHTRA STATE, MUMBAI**

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**Annexure:- B ( Consent Form)**

**TECHNICAL EDUCATION CET 2023 – CONFIDENTIAL WORK**

- 1) Item Writer (MCQ Preparation) 2) Reviewer 3) Question Paper Setter  
4) Moderator 5) Chief Moderator

1) Full Name :- \_\_\_\_\_

2) Designation :- \_\_\_\_\_

3) Qualification :- \_\_\_\_\_

4) Details of the Institution in which working/worked :-

Affix latest  
photo

Name of the Institution in which working/have worked	Affiliated to University/Board	From	To	Nature of appointment

5) Subjects you are/were Teaching : \_\_\_\_\_

6) Details of Course and Post

Course :-	I] MCA II] MBA /MMS III] B.HMCT IV] M.HMCT V] M.Arch VI] B.Design VII] B.Planning.	
Post/s :-	Item Writer (MCQ Preparation) /Reviewer / Question Paper Setter /Moderator / Chief Moderator	
Note :-	Item Writer has to prepare multiple Choice Questions on specified topic	
Sr. No.	Name of Course (Max 5)	Post/s for which submitting the consent (Max 5)
1		
2		
3		
4		
5		

7) E-mail Id. of the Institute: \_\_\_\_\_

8) Phone No. of the College with STD Code: \_\_\_\_\_

9) E-mail Id of the Expert: - \_\_\_\_\_

10) Mobile No. of the Expert: \_\_\_\_\_

**11) Bank Details of the Expert**

Name of the Account Holder	Name of the Bank	Account Type	Account No	IFSC code of the Bank
		Savings		

**12) Have you worked as Expert for Any Agency? YES / NO.**

If Yes , Give details of Work Done:-

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**13) Have you worked for State CET CELL? YES / NO.**

If Yes, Give Details of Work done:-

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**Declaration**

- 1) The Information given above is correct and true to the best of my knowledge.
- 2) I am / was recognized teacher for the Course for which I am submitting the application.
- 3) I am accepting the work with full knowledge and understanding of the fact that the work accepted by me is Confidential and Sensitive.
- 4) I will maintain full confidentiality of the work and will not disclose the work being done and work submitted to anybody.
- 5) I shall be responsible for the correctness of the question, their options and the Final correct answer.
- 6) I will be fully responsible for the content prepared/moderated/finalized by me and answer suggested and justification of the answer given.
- 7) I undertake to use only the Reference Books/ Newspapers/ Journals and standard Resources for preparing the questions as per the Syllabus and its scope and will not copy information, Questions from the Guides or books of Competitive Examinations available in the Market nor from the coaching institutes and material available on internet. I shall verify the fact that there is no sensitive, offensive, unethical words/ language used in the Questions.

Date: - ..../..../ 2023

Signature of the Expert. : \_\_\_\_\_

Full Name of the Expert.: \_\_\_\_\_

# Kindly share the (pdf) filled in form on [higher1.cetcell@gmail.com](mailto:higher1.cetcell@gmail.com) only

# Technical Education Syllabus

**Syllabus and Marking Scheme for Bachelor of Design  
MAH-B Design CET 2023**

**Contents:**

MAH - B Design CET is the test devised to check the inclination and aptitude of the students for their keen observations, analytical ability, creative thinking ability, visualization & hand skills. Designers being interested in various aspect of life should be aware of the things happening around them in various spheres like nature-humanity-technology development. Looking at the things without biases, questioning the status quo, enables designers to think in a different way and bring new perspective towards the solution.

Entrance examination paper will have questions broadly but not limited to the topics mentioned in the two tables below. The test is divided into 2 main parts with total duration of 3 hours.

1. PART A is MCQ based questions, for duration of 90 minutes.
2. PART B is sketching skill based & problem-solving ability, for duration of 90 minutes.

	<b>PART A ( Duration: 90 mins )</b>	Question types	No. of Questions	Marks/Question	Marks
1	<b>General knowledge/awareness:</b> General knowledge and current affairs	MCQs	20	1	20
2	<b>Art &amp; Design fundamentals:</b> Elements and principles of design, aesthetic sensitivity, colour theory, Basic art history. Indian culture, other prominent cultures. Important crafts.	MCQs	20	1	20
3	<b>Science - technology related knowledge:</b> Basics of physics, geometry, Mathematics. Knowledge of practical and everyday mechanical and scientific concepts. knowledge of materials.	MCQs	15	2	30
4	<b>Analytical and logical reasoning:</b> Ability to look at information, recognize patterns and analyse given data. Sequences or relationships between shapes and imageries.	MCQs	15	2	30
	<b>TOTAL</b>		<b>70 Questions</b>		<b>100 Marks</b>

	<b>PART B ( Duration: 90 mins )</b>	Question types	No of Questions	Marks/Question	Marks
1	<b>Visualization and illustration ability (30 mins):</b> Sketching/illustrating situation, context, event, people with attention to details. With right proportions, good line quality, composition, perspective, and shading.	Sketching	1	40	40
2	<b>Design thinking and problem solving (60 mins):</b> Understanding complex situations, going to root cause, and identifying problems, generate alternative ideas/solutions, evaluating options and developing final solutions.	Sketching	1	60	60
	<b>TOTAL</b>		<b>2 Questions</b>		<b>100 Marks</b>

- The PART A - Duration: 90 minutes - test will comprise of multiple-choice objective type questions, Numerical answer type questions.
- The PART B - Duration: 90 minutes - test will comprise of sketching, illustration, Product/idea using pencils, colour pencils, markers, sketch pens, pens, & any other suitable colouring mediums.
- There is no negative marking System for this test.
- Medium of CET: English
- Mode of Examination – offline (at selected centers)

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## Syllabus and Marking Scheme for Bachelor Planning MAH-B.Plan CET 2023

Contents:-

The On Line test will have 100 questions based on Mathematics (Part-I), Aptitude Test (Part-II) and Planning Based Questions (Part-III) for 200 marks.

Sr. No.	Paper	Topic	No. of Questions	Mark/s per Question	Total Marks	Duration (minutes)
1	Part-I	Mathematics	25	02	50	30
2	Part-II	Aptitude Test	50	02	100	60
3	Part-III	Planning Based Questions	25	02	50	30
TOTAL			100	-	200	120
The test will comprise of multiple choice objective type questions (Four Options)						
There is no negative marking System for this test.						
Test Duration: 120 minutes						
Medium of CET: English						
Mode of Examination – Online						

### SYLLABUS FOR MAH-B.Plan CET 2023

#### Part I - MATHEMATICS

Unit-1: Sets, Relations and Functions:

Sets and their representation: Union, intersection and complement of sets and their algebraic properties; Power set; Relation, Type of relations, equivalence relations, functions; one-one, into and onto functions, the composition of functions.

Unit-2: Complex Numbers and Quadratic Equations:

Complex numbers as ordered pairs of reals, Representation of complex numbers in the form  $a + ib$  and their representation in a plane, Argand diagram, algebra of complex number, modulus and argument (or amplitude) of a complex number, triangle inequality, Quadratic equations in real and complex number system and their solutions, Relations between roots and co-efficient, nature of roots, the formation of quadratic equations with given roots.

Unit-3: Matrices and Determinants:

Matrices, algebra of matrices, type of matrices, determinants and matrices of order two and three, properties of determinants, evaluation of determinants, area of triangles using determinants, Adjoint and evaluation of inverse of a square matrix using determinants and elementary transformations, Test of consistency and solution of simultaneous linear equations in two or three variables using determinants and matrices.

Unit-4: Permutations and Combinations:

The fundamental principle of counting, permutation as an arrangement and combination as section, Meaning of  $P(n,r)$  and  $C(n,r)$ , simple applications.

Unit-5: Mathematical Inductions:

Principle of Mathematical Induction and its simple applications

Unit-6: Binomial Theorem and its Simple Applications:

Binomial theorem for a positive integral index, general term and middle term, properties of Binomial coefficients and simple applications

Unit-7: Sequence and Series:

Arithmetic and Geometric progressions, insertion of arithmetic, geometric means between two given numbers, Relation between A.M and G.M sum up to  $n$  terms of special series;  $S_n$ ,  $S_{n^2}$ ,  $S_{n^3}$ . Arithmetico-Geometric progression.

Unit-8: Limit, Continuity and Differentiability:

Real-valued functions, algebra of functions, polynomials, rational, trigonometric, logarithmic and exponential functions, inverse function. Graphs of simple functions. Limits, continuity and differentiability. Differentiation of the sum, difference, product and quotient of two functions. Differentiation of trigonometric, inverse trigonometric, logarithmic, exponential, composite and implicit functions; derivatives of order up to two, Rolle's and Lagrange's Mean Value Theorems, Applications of derivatives: Rate of change of quantities, monotonic-Increasing and decreasing functions, Maxima and minima of functions of one variable, tangents and normal.

#### Unit- 9: Integral Calculus:

Integral as an anti-derivative, Fundamental Integrals involving algebraic, trigonometric, exponential and logarithms functions. Integrations by substitution, by parts and by partial functions, Integration using trigonometric identities.

Evaluation of simple integrals of the type

$$\int \frac{dx}{x^2+a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{a^2-x^2}, \int \frac{dx}{\sqrt{a^2-x^2}}$$

$$\int \frac{dx}{ax^2+bx+c}, \int \frac{dx}{\sqrt{ax^2+bx+c}}, \int \frac{(px+q)dx}{ax^2+bx+c},$$

$$\int \frac{(px+q)dx}{\sqrt{ax^2+bx+c}}, \int \sqrt{a^2 \pm x^2} dx,$$

$$\int \sqrt{x^2 - a^2} dx$$

Integral as limit of a sum. The fundamental theorem of calculus, properties of definite integrals. Evaluation of definite integrals, determining areas of the regions bounded by simple curves in standard form.

#### Unit-10: Differential Equations

Ordinary differential equations, their order and degree, the formation of differential equations, solution of differential equation by the method of separation of variables, solution of a homogeneous and linear differential equation of the type.

$$\frac{dy}{dx} + p(x)y = q(x)$$

#### Unit-11: Co-Ordinate Geometry

Cartesian system of rectangular co-ordinates, 10 in a plane, distance formula, sections formula, locus and its equation, translation of axis, slop of a line, parallel and perpendicular lines, intercept of a line on the co-ordinate axes.

Straight line - Various forms of equations of a line, intersection of lines, angles between two lines, conditions for concurrence of three lines, the distance of a point from a line, equations of internal and external bisectors of angles between two lines co-ordinate of the centroid, orthocentre and circumcentre of a triangle, equation of the family of lines passing through the point of intersection of two lines.

Circle, conic sections - A standard form of equations of a circle, the general form of the equation of a circle, its radius and central, equation of a circle when the endpoints of a diameter are given, points of intersection of a line and a circle with the centre at the origin and condition for a line to be tangent to a circle, equation of the tangent, sections of conics, equations of conic sections (parabola, ellipse and hyperbola) in standard forms, condition for  $Y = mx + c$  to be a tangent and point (s) of tangency.

#### Unit-12: Three Dimensional Geometry

Coordinates of a point in space, the distance between two points, section formula, directions ratios and direction cosines, the angle between two intersecting lines. Skew lines, the shortest distance between them and its equation. Equations of a line and a plane in different forms, the intersection of a line and a plane, coplanar lines.

#### Unit-13: Vector Algebra

Vectors and scalars, the addition of vectors, components of a vector in two dimensions and three-dimensional space, scalar and vector products, scalar and vector triple product.

#### Unit-14: Statistics and Probability

Measures of discretion; calculation of mean, median, mode of grouped and ungrouped data calculation of standard deviation, variance and mean deviation for grouped and ungrouped data.

Probability: Probability of an event, addition and multiplication theorems of probability, Baye's theorem, probability distribution of a random variate, Bernoulli trials and binomial distribution.

#### Unit-15: Trigonometry

Trigonometrical identities and equations, trigonometrical functions, inverse trigonometrical functions and their properties, heights and distance.

#### Unit -16: Mathematical Reasoning

Statement logical operations and, or, implies, implied by, if and only if, understanding of tautology, contradiction, converse and contrapositive.

### Part II - APTITUDE

#### Unit-1

Awareness of persons. Buildings, Materials. Objects, Texture related to Architecture and Build-environment, Visualising three dimensional objects from two-dimensional drawings. Visualising. Different sides of three-dimensional objects. Analytical Reasoning Mental Ability (Visual, Numerical and Verbal)

#### Unit- 2: Three Dimensional- Perception:

Understanding and appreciation of scale and proportions of objects, building forms and elements, colour texture harmony and contrast Design and drawing of geometrical or abstract shapes and patterns in pencil.

Transformation of forms both 2D and 3D union, subtraction rotation, development of surfaces and volumes, Generation of Plan, elevations and 3D views of objects, Creating two dimensional and three-dimensional compositions using given shapes and forms.

### Part III – PLANNING

#### Unit-1: General Awareness

General knowledge questions and knowledge about prominent cities, development issues, government programmes etc.

#### Unit-2: Social Sciences

The idea of nationalism, nationalism in India, pre-modern world, 19th-century global economy, colonialism and colonial cities, industrialisation, resources and development, types of resources, agriculture, water, mineral resources, industries, national economy; Human Settlements.

Power-sharing, federalism, political parties, democracy, the constitution of India.

Economic development- economic sectors, globalisation, the concept of development, poverty; Population structure, social exclusion and inequality, urbanisation, rural development, colonial cities.

#### Unit-3: Thinking Skills

Comprehension (unseen passage); map reading skills, scale, distance, direction, area etc.; critical reasoning; understanding of charts, graphs and tables; basic concepts of statistics and quantitative reasoning.

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**Syllabus and Marking Scheme for Bachelor of Hotel Management and Catering Technology MAH-  
B.HMCT CET 2023**

**Contents :-**

The OnLine test will have 100 Questions based on Reasoning (Verbal as well as Arithmetic), English Language & General Awareness including questions on culture, current national, international affairs, trade & commerce, sports, scientific inventions and discoveries, travel/tourism etc.

<b>Topics</b>	<b>No of Questions</b>	<b>Mark/s per Question</b>	<b>Maximum Marks</b>	<b>Total Marks</b>
English Language	40	1	40	100
Reasoning (Verbal and Arithmetic)	30	1	30	
General Knowledge & Awareness including questions on current national, international affairs, culture, trade & commerce, sports, scientific inventions and discoveries, travel/ tourism etc.	30	1	30	
The test will comprise of multiple choice objective type questions (Four Options)				
There is no negative marking System for this test.				
Test Duration: 90 minutes				
Medium of CET: English				
Mode of Examination - Online				

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**Syllabus and Marking Scheme for Master of Architecture MAH-M. Arch CET 2023**

**Contents:-**

<b>Sr.</b>	<b>Topics</b>	<b>No of Questions</b>	<b>Mark/s per Question</b>	<b>Maximum Marks</b>	<b>Total Marks</b>
1	<b>Building Technology</b> Building systems, Building Science and services, concept of green building, construction materials.	10	2 marks	20 Marks	100
2	<b>Environment</b> Concept and Ecology and landscape design, Environment laws and regulations, Environment design strategies w.r.t site.	10	2 marks	20 Marks	
3	<b>Architecture History and humanities</b> Awareness of Art and culture and architectural theory, major architecture movements in the world and in India.	10	2 marks	20 Marks	
4	<b>Settlement, design and planning</b> Urbanization, Urbanism, Urban and rural system, Infrastructure planning theory and history.	10	2 marks	20 Marks	
5	<b>Current Architecture Practice</b> Awareness of National building code. Town planning laws and development control regulation, knowledge of Regulatory and professional bodies on architecture.	10	2 marks	20 Marks	
The test will comprise of multiple choice objective type questions(Four Options)					
There is no negative marking System for this test.					
Test Duration: 60 minutes					
Medium of CET: English					
Mode of Examination - Online or Offline as the case may be					

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## Syllabus and Marking Scheme for MAH-MBA/ MMS CET 2023

### Contents:-

#### A) Logical / Abstract Reasoning.

This shall include the questions to measure how quickly and accurately you can think. This test may have questions based on figures and diagrams and also questions on verbal reasoning.

#### B) Quantitative Aptitude.

This shall include the questions to know how fast and accurate you can work with numbers, do numerical calculations understand various arithmetic problems involving ratio and proportion, percentage, etc. This test also helps to measure your power of quantitative reasoning, interpretation of tables, common graphs and charts.

#### C) Verbal Ability and Reading Comprehension

This shall include passages with questions based on their contents to test your comprehension. Your English Language ability would be tested through questions on grammar, vocabulary, sentence completion, synonyms, antonyms, comprehension of passages etc. Your English language ability would be tested through questions on (1) understanding of the contents of the passage and (2) choice of appropriate words, phrases, expressions and similar language skills.

Sr.	Topics	No of Questions	Mark per Question	Maximum Marks	Total Marks
1	Logical Reasoning	75	1	75	200
2	Abstract Reasoning	25	1	25	
3	Quantitative Aptitude	50	1	50	
4	Verbal Ability / Reading Comprehension	50	1	50	
The test will comprise of multiple choice objective type questions (Five Options)					
There is no negative marking System for this test.					
Test Duration: <b>150 Minutes</b>					
Medium of CET: English					
Mode of Examination - Online					

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## Syllabus & Marking Scheme for Master of Computer Applications MAH-MCA-CET 2023

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 :-**

- a) 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.
- b) 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.
- c) 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.
- d) 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 no negative marking System for this test.				
Test Duration: 90 minutes				
Medium of CET: English				
Mode of Examination - Online				

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**Syllabus and Marking Scheme for Master of Hotel Management and Catering Technology  
MAH-M.HMCT CET 2023**

**Contents:-**

Sr.	Topics	No of Questions	Mark per Question	Maximum Marks	Total Marks
1	<b>Food and Beverage Operation</b> Food and Beverage Service Operations, related terminology, Inventory control, Food & Beverage equipment and infrastructure & Food and Beverage Operation Management.	10	02	20	100
2	<b>Food Production</b> Food Production operations, Indian & International cuisines and related terminology, Bakery and Confectionary, Hygiene and Safety standards, Kitchen equipment and Infrastructure & Food Production Management.	10	02	20	
3	<b>Rooms division</b> Housekeeping and front office operations and related terminology, Planning & designing of hospitality organisations, Laundry operations and procedures & Rooms division Management.	10	02	20	
4	<b>English</b> Word meaning , comprehension, autonyms and synonyms, idioms and phrases, word spellings	10	02	20	
5	<b>Hospitality &amp; Tourism Industry</b> Types of tourism, hotel and restaurant brands and segments , Airlines, hospitality terms, hospitality related organizations and regulatory bodies, Global trends & Hospitality & Tourism Management. Use of Technology in hotels.	10	02	20	
The test will comprise of multiple choice objective type questions (Four Options)					
There is no negative marking System for this test.					
Test Duration: 60 minutes					
Medium of CET: English					
Mode of Examination - Online or Offline as the case may be					

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