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Contents

Before preparing for Common Universities Entrance Test (CUET), a strong road map must be prepared, which includes what subject to cover, when, how many hours you should allocate for each subject, etc.

Most of you may not have clarity on your goals while in school, while a few plan it early!

If you have set your goal to get admission to one of the top central universities, you must start preparing early!

1 *Understand the Exam Pattern*

Though the number of questions is the same, the paper pattern differs for each college. Therefore, knowing the paper pattern for the particular college plays a vital role in qualifying for the entrance exam.

As per the CUET Exam Pattern, the entrance exam will include four sections:

- Section 1 A:13 Languages
- Section 1 B:20 Languages
- Section 2: Domain-specific test
- Section 3:General test

Knowing the specific exam pattern for the college you have applied to is also important. Visit the official website of the CUET to know the exam pattern for the respective colleges you have applied to. Only then start with your preparations.

2 *Know your Syllabus*

Once you understand your exam pattern, the second step is to list down the syllabus, so you know what to study. Visit the official website of CUET; it has the respective syllabus for the course and the college.

Note that the syllabus may differ for every college. Therefore, it is important to carefully review and double-check your syllabus before you start your preparations.

3 *Schedule a TimeTable*

Scheduling is something that will give fantastic results if you plan it properly. However, preparing a study plan is one of the most challenging tasks for most.

- Your everyday schedule should have time for CUET exam preparation.
- Initially, you can give 1-2 hours for the entrance exam and the rest for the board exams.
- Once the board exams get over, you can utilize the maximum of your time for the NTA CUET exam prep.

4 *Make a List of Colleges You wish to Target*

- Before starting your preparation, you must make a CUET Colleges and course list.
- Then, understand the previous year's cut-off and position of the counselling for the particular college.
- Doing this will help you understand the marks you must score in the CUET exam to get admission to a particular course in your desired college, thus helping you enhance your preparation levels for the upcoming exam.

5

Newspaper Should Be Your New Friend

- Reading the newspaper will help improve your vocabulary, grammar, and reading comprehension skills.
- To improve your English language, you can refer to the Hindu or the Time of India newspapers.
- You can prefer to read the Dainik Bharat newspaper to improve your Hindi language.
- You must spend at least 30 minutes analyzing and reading the newspaper's editorial page.

6

Practice Mock Tests

- Working on the concepts and writing mock tests based on the exam pattern is essential, as it will help you understand your strengths and weak areas, which can be improved.
- Take up at least one CUET Mock Test every week and try to analyze your performance after completing the mock test.
- Also, try to attempt as many MCQs as possible from your board exam topics. Gradually increase the number of mocks you take.

7

Revision

You should not pick a fresh topic to study at the last minute of preparations. The last days are meant for only revision, so you can revise and remember the topics you have already learned.

Revision is extremely important to have a good score. Studying without revision is "working hard, but without a plan"!

CUET Preparation Tips for the CUET Domain-Specific Test?

The domain specific-test of the CUET entrance exam will have 27 subjects, out of which you have to choose six domains that you wish to pursue in your UG course.

The standard of questions in this section is of class 12 level. Therefore, knowing the fundamental concepts of your chosen subject will help you score well in this section.

Also, you must choose the subjects you feel are very interesting and enjoy studying in the morning. Try to attempt easy, moderate, and challenging level MCQ questions from the NCERT textbooks.

CUET Preparation Tips for NTA CUET 2024 along with Board Exams?

You can succeed in both CUET and board exams if you are good at time management. Also, you can score better if you are consistent throughout your preparation.

A proper study plan and preparation strategies will help you Manage boards and CUET preparation together.

When preparing the timetable, focus on keeping separate time for board preparation, CUET domain-specific preparation, and lastly, allot separate time to solve the aptitude section.

Board exams must be your priority, and you should work on enhancing your domain subject knowledge during your board exam preparation. And do this till the board exams are over.

After completing your board exams, you will have roughly 30-40 days to prepare for the Common Universities Entrance Test. So, utilize this entire month to enhance your preparation levels for CUET.

CUET Preparation Tips 2024: Best Books

Opting for the right book is very important to understand the concepts in-depth and score good marks in the upcoming exam.

The following are some of the best CUET Preparation Books you can include during your preparation.

- Arihant's English Grammar & Composition by S.C. Gupta
- Arihant's Test of Arithmetic & General Knowledge by Manohar Pandey
- Arihant's CUET (UG) Self Study Guides

Is It Useful To Solve Mock Tests for CUET Exam 2024?

According to the CUET preparation tips 2024, attempting mock tests is one of the best methods to improve your speed and accuracy in the final exam.

- With the help of mock tests, you can know the difficulty level of the paper and the type of questions asked in the exam.
- You can test your preparation levels for the upcoming exam.
- Most importantly, it can help improve your confidence levels.

Conclusion

"Kya CUET bohot tough hai?", nahi bilkul bhi nahi. If you know and follow the right preparation strategy, there is nothing called as tough. In fact, CUET is in a nurturing phase, so it's not a very tough exam to crack. If you are willing and determined, you can easily crack the CUET 2024 exam. These CUET Preparation Tips are specially curated for CUET 2024 aspirants to help you use the right strategies for the exam.

Syllabus

SECTION B1 : MATHEMATICS

UNIT I: RELATIONS AND FUNCTIONS

1. ***Relations and Functions***

   Types of relations: Reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

2. ***Inverse Trigonometric Functions***

   Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

UNIT II: ALGEBRA

1. ***Matrices***

   Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2. ***Determinants***

   Determinant of a square matrix (up to 3×3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

UNIT III: CALCULUS

1. ***Continuity and Differentiability***

   Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function. Concepts of exponential, logarithmic functions. Derivatives of $\log x$ and e^x. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second-order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

2. ***Applications of Derivatives***

   Applications of derivatives: Rate of change, increasing/decreasing functions, tangents and normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations). Tangent and Normal.

3. ***Integrals***

   Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type

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

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

   $$\int \sqrt{a^2 + x^2}\, dx \text{ and } \int \sqrt{x^2 - a^2}\, dx, \int \sqrt{ax^2 + bx + c}\, dx$$

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

   to be evaluated.

   Definite integrals as a limit of a sum. Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. ***Applications of the Integrals***

   Applications in finding the area under simple curves, especially lines, arcs of circles/parabolas/ellipses (in standard form only), area between the two above said curves (the region should be cleraly identifiable).

5. ***Differential Equations***

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type –

$\frac{dy}{dx} + py = Q$, where P and Q are functions of x or constant

$\frac{dx}{dy} + px = Q$, where P and Q are functions of y or constant

UNIT IV: VECTORS AND THREE-DIMENSIONAL GEOMETRY

1. ***Vectors***

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors, scalar triple product.

2. ***Three-dimensional Geometry***

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.

UNIT V: LINEAR PROGRAMMING

Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

UNIT VI: PROBABILITY

Multiplications theorem on probability. Conditional probability, independent events, total probability, Baye's theorem. Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (Bernoulli) trials and Binomial distribution.

SECTION B2 : APPLIED MATHEMATICS

UNIT I: NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS

A. ***Modulo Arithmetic***

- Define modulus of an integer
- Apply arithmetic operations using modular arithmetic rules

B. ***Congruence Modulo***

- Define congruence modulo
- Apply the definition in various problems

C. ***Allegation and Mixture***

- Understand the rule of allegation to produce a mixture at a given price
- Determine the mean price of a mixture
- Apply rule of allegation

D. ***Numerical Problems***

- Solve real life problems mathematically

E. ***Boats and Streams***

- Distinguish between upstream and downstream
- Express the problem in the form of an equation

F. ***Pipes and Cisterns***

- Determine the time taken by two or more pipes to fill

G. ***Races and Games***

- Compare the performance of two players w.r.t. time
- Distance taken/distance covered/ Work done from the given data

H. ***Partnership***

- Differentiate between active partner and sleeping partner
- Determine the gain or loss to be divided among the partners in the ratio of their investment with due
- Consideration of the time volume/ surface area for solid formed using two or more shapes

I. ***Numerical Inequalities***

- Describe the basic concepts of numerical inequalities
- Understand and write numerical inequalities

UNIT II: ALGEBRA

A. ***Matrices and types of matrices***

- Define matrix
- Identify different kinds of matrices

B. ***Equality of matrices, Transpose of a matrix, Symmetric and Skew symmetric matrix***

- Determine equality of two matrices
- Write transpose of given matrix
- Define symmetric and skew symmetric matrix

UNIT III: CALCULUS

A. ***Higher Order Derivatives***

- Determine second and higher order derivatives
- Understand differentiation of parametric functions and implicit functions Identify dependent and independent variables

B. ***Marginal Cost and Marginal Revenue using derivatives***

- Define marginal cost and marginal revenue
- Find marginal cost and marginal revenue

C. ***Maxima and Minima***

- Determine critical points of the function
- Find the point(s) of local maxima and local minima and corresponding local maximum and local minimum values
- Find the absolute maximum and absolute minimum value of a function

UNIT IV: PROBABILITY DISTRIBUTIONS

A. ***Probability Distribution***

- Understand the concept of Random Variables and its Probability Distributions
- Find probability distribution of discrete random variable

B. ***Mathematical Expectation***

- Apply arithmetic mean of frequency distribution to find the expected value of a random variable

C. ***Variance***

- Calculate the Variance and S.D. of a random variable

UNIT V: INDEX NUMBERS AND TIME BASED DATA

A. ***Index Numbers***

- Define Index numbers as a special type of average

B. ***Construction of Index numbers***

- Construct different type of index numbers

C. ***Test of Adequacy of Index Numbers***

- Apply time reversal test

UNIT VI: INTERENTIAL STATISTICS

A. ***Population and Sample***

- Define Population and Sample
- Differentiate between population and sample
- Define a representative sample from a population

B. ***Parameter and Statistics and Statistical Interferences***

- Define Parameter with reference to Population
- Define Statistics with reference to Sample
- Explain the relation between Parameter and Statistic
- Explain the limitation of Statistic to generalize the estimation for population
- Interpret the concept of Statistical Significance and Statistical Inferences
- State Central Limit Theorem
- Explain the relation between Population-Sampling Distribution-Sample

UNIT VII: TIME SERIES

A. ***Time Series***

- Identify time series as chronological data

B. ***Components of Time Series***

- Distinguish between different components of time series

C. ***Time Series analysis for univariate data***

- Solve practical problems based on statistical data and Interpret

UNIT VIII: FINANCIAL MATHEMATICS

A. ***Perpetuity, Sinking Funds***

- Explain the concept of perpetuity and sinking fund
- Calculate perpetuity
- Differentiate between sinking fund and saving account

B. ***Valuation of Bonds***

- Define the concept of valuation of bond and related terms
- Calculate value of bond using present value approach

C. ***Calculation of EMI***

- Explain the concept of EMI
- Calculate EMI using various methods

D. ***Linear method of Depreciation***

- Define the concept of linear method of Depreciation
- Interpret cost, residual value and useful life of an asset from the given information
- Calculate depreciation

UNIT IX: LINEAR PROGRAMMING

A. ***Introduction and related terminology***

- Familiarize with terms related to Linear Programming Problem

B. ***Mathematical formulation of Linear Programming Problem***

- Formulate Linear Programming Problem

C. ***Different types of Linear Programming Problems***

- Identify and formulate different types of LPP

D. ***Graphical Method of Solution for problems in two Variables***

- Draw the Graph for a system of linear inequalities involving two variables and to find its solution graphically

E. ***Feasible and Infeasible Regions***

- Identify feasible, infeasible and bounded regions

F. ***Feasible and infeasible solutions, optimal feasible solution***

- Understand feasible and infeasible solutions
- Find optimal feasible solution

CUET (UG) Section II DOMAIN SCIENCE

SOLVED PAPER

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