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NTA CUET (UG)

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Chemistry

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Note : *Free Mock Tests will available only after 1st Nov, 2023*



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 : CHEMISTRY

Unit I: Solid State

Classification of solids based on different binding forces: molecular, ionic covalent, and metallic solids, amorphous and crystalline solids(elementary idea), unit cell in two dimensional and three-dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties, Band theory of metals, conductors, semiconductors and insulators and *n* and *p*-type semiconductors.

Unit II: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, the solubility of gases in liquids, solid solutions, colligative properties – the relative lowering of vapour pressure, Raoult's law, elevation of B.P., depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, vant Hoff factor.

Unit III: Electrochemistry

Redox reactions; conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's law, electrolysis and laws of electrolysis (elementary idea), dry cell – electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells. Relation between Gibbs energy change and EMF of a cell, fuel cells; corrosion.

Unit IV: Chemical Kinetics

Rate of a reaction (average and instantaneous), factors affecting rates of reaction: concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations, and half-life (only for zero and first-order reactions); concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenius equation.

Unit V: Surface Chemistry

Adsorption – physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis: homogenous and heterogeneous, activity and selectivity: enzyme catalysis; colloidal state: the distinction between true solutions, colloids, and suspensions; lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsions – types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements

Principles and methods of extraction – concentration, oxidation, reduction electrolytic method, and refining; occurrence and principles of extraction of aluminum, copper, zinc, and iron.

Unit VII: *p*-Block Elements

Group 15 elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen – preparation, properties, and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorus-allotropic forms; compounds of phosphorus: preparation and properties of phosphine ,halides (PCl_3, PCl_5) and oxoacids (elementary idea only).

Group 16 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen: preparation, properties, and uses; classification of oxides; ozone. Sulphur – allotropic forms; compounds of sulphur: preparation, properties, and uses of sulphur dioxide; sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).

Group 17 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

Group 18 elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.

Unit VIII: *d* and *f* Block Elements

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first-row transition metals – metallic character, ionisation enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation. Preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids – Electronic configuration, oxidation states, chemical reactivity, and lanthanoid contraction and its consequences.

Actinoids –Electronic configuration, oxidation states, and comparison with lanthanoids.

Unit IX: Coordination Compounds

Coordination compounds: Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds, bonding, Werner's theory VBT, CFT; isomerism (structural and stereo) importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

Unit X: Haloalkanes and Haloarenes

Haloalkanes: Nomenclature, nature of *C— X* bond, physical and chemical properties, mechanism of substitution reactions. Optical rotation.

Haloarenes: Nature of *C— X* bond, substitution reactions (directive influence of halogen for monosubstituted compounds only). Use sand environmental effects of–dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols, and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary, and tertiary alcohols; mechanism of dehydration, uses, with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature,methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones, and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, the reactivity of alpha hydrogen in aldehydes; uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic Compounds Containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary secondary, and tertiary amines.

Cyanides and Isocyanides – will be mentioned at relevant places in context.

Diazonium salts: Preparation, chemicalreactions, and importance in synthetic organic chemistry.

Unit XIV: Biomolecules

Carbohydrates – Classification (aldoses and ketoses), monosaccharide (glucose and fructose), D-L configuration, oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen): importance.

Proteins - Elementary idea of α-amino acids, peptide bond, polypeptides, proteins, primary structure, secondary structure, tertiary structure and quaternary structure (qualitative idea only), denaturation of proteins; enzymes.

Hormones –Elementary idea (excluding structure).

Vitamins – Classification and functions.

Nucleic Acids: DNA and RNA

Unit XV: Polymers

Classification – Natural and synthetic, methods of polymerisation (addition and condensation), copolymerisation. Some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.

Unit XVI: Chemistry in Everyday Life

1. Chemicals in medicines – analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
2. Chemicals in food– preservatives, artificial sweetening agents, elementary idea of antioxidants.
3. Cleansing agents – soaps and detergents, cleansing action.

CUET (UG) Section II DOMAIN SCIENCE

SOLVED PAPERS

2023 & 22