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NTA CUET (UG)

Common University Entrance Test for
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15 Mock Tests

Biology

(Section II Science Domain)

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See instructions inside

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Authors
Dr. Parul Goel,
Madhubala

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ARIHANT PUBLICATIONS (INDIA) LIMITED

Administrative & Production Offices

Regd. Office

'Ramchhaya' 4577/15, Agarwal Road, Darya Ganj, New Delhi -110002
Tele: 011- 47630600, 43518550

Head Office

Kalindi, TP Nagar, Meerut (UP) - 250002
Tel: 0121-7156203, 7156204

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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 : BIOLOGY/BIOLOGICAL STUDIES/BIOTECNOLOGY/BIOCHEMISTRY

Unit I: Reproduction

Reproduction in organisms: Reproduction, a characteristic feature of all organisms for continuation of species; Modes of reproduction –Asexual and sexual; Asexual reproduction; Modes- Binary fission, sporulation, budding, gemmule, fragmentation; vegetative propagation in plants.

Sexual reproduction in flowering plants: Flower structure; Development of male and female gametophytes; Pollination–types, agencies and examples; Outbreedings devices; Pollen-Pistil interaction; Double fertilization; Post fertilization events– Development of endosperm and embryo, Development of seed and formation of fruit; Special modes– apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

Human Reproduction: Male and female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis- spermatogenesis & oogenesis; Menstrual cycle; Fertilisation, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (Elementary idea); Parturition (Elementary idea); Lactation (Elementary idea).

Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases(STD); Birth control- Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).

Unit II: Genetics and Evolution

Heredity and variation: Mendelian Inheritance; Deviations from Mendelism– Incomplete dominance, Co-dominance, Multiple alleles and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenicinheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination–In humans, birds, honeybee; Linkage and crossing over; Sex linked inheritance- Haemophilia, Colour blindness; Mendelian disorders in humans– Thalassemia; Chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Molecular Basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation–*Lac* Operon; Genome and human genome project; DNA fingerprinting.

Evolution: Origin of life; Biological evolution and evidences for biological evolution (Paleontological, comparative anatomy, embryology and molecular evidence); Darwin's contribution, Modern Synthetic theory of Evolution; Mechanism of evolution–Variation(Mutation and Recombination) and Natural Selection with examples, types of natural selection; Gene flow and genetic dirft; Hardy-Weinberg's principle; Adaptive Radiation; Human evolution.

Unit III: Biology and Human Welfare

Health and Disease: Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology–vaccines; Cancer, HIV and AIDS; Adolescence, drug and alcohol abuse.

Improvement in food production: Plant breeding, tissue culture, single cell protein, Biofortification; Apiculture and Animal husbandry.

Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers.

Unit IV: Biotechnology and Its Applications

Principles and process of Biotechnology: Genetic engineering (Recombinant DNA technology).

Application of Biotechnology in health and agriculture: Human insulin and vaccine production, genetherapy; Genetically modified organisms-*Bt* crops; Transgenic Animals; Biosafety issues–Biopiracy and patents.

Unit V: Ecology and Environment

Organisms and environment: Habitat and niche; Population and ecological adaptations; Population interactions–mutualism, competition, predation, parasitism; Population attributes–growth, birth rate and death rate, age distribution.

Ecosystems: Patterns, components; productivity and decomposition; Energy flow; Pyramids of number, biomass, energy; Nutrient cycling (carbon and phosphorous); Ecological succession; Ecological Services– Carbon fixation, pollination, oxygen release.

Biodiversity and its conservation: Concept of Biodiversity; Patterns of Biodiversity; Importance of Biodiversity; Loss of Biodiversity; Biodiversity conservation; Hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, National parks and sanctuaries.

Environmental issues: Air pollution and its control; Water pollution and its control; Agrochemicals and their effects; Solid waste management; Radioactive waste management; Greenhouse effect and global warming; Ozone depletion; Deforestation; Any three case studies as success stories addressing environmental issues.

CUET (UG) Section II DOMAIN SCIENCE

SOLVED PAPER

2023-22

SOLVED PAPER 2023*

NTA CUET (UG)
BIOLOGY

Instructions
- Attempt any 40 out of the given 50 questions. No mark will be given to unanswered for review questions.
- Each question carries 5 marks. Negative marking of 1 mark for a wrong answer.

Time : 45 Min
MM : 200

1. The plant part which consists of two generations, one within the other
I. Pollen grains inside the anther.
II. Germinated pollen grain with two male gametes.
III. Seed inside the fruit.
IV. Embryo sac inside the ovule.
(a) I, II and III (b) III and IV
(c) I and IV (d) Only I

2. Meiotic division of the secondary oocyte is completed
(a) at the time of copulation
(b) after zygote formation
(c) at the time of fusion of a sperm with an ovum
(d) prior to ovulation

3. Lippes loop is a type of contraceptive used as
(a) vault barrier
(b) non-medicated IUD
(c) copper releasing IUD
(d) cervical barrier

4. The best example for pleiotropy is
(a) skin colour
(b) phenylketonuria
(c) colour blindness
(d) ABO blood group

5. The number of contrasting characters studied by Mendel for his experiments was
(a) 14 (b) 4
(c) 2 (d) 7

6. Match the list I with list II.

	List I		List II
A.	Filariasis	1.	*Haemophilus influenzae*
B.	Amoebiasis	2.	*Trichophyton*
C.	Pneumonia	3.	*Wuchereria bancrofti*
D.	Ringworm	4.	*Entamoeba histolytica*

Choose the correct answer from the options given below.

	A	B	C	D
(a)	4	1	3	2
(b)	3	4	1	2
(c)	1	2	4	3
(d)	2	3	1	4

7. Embryological support for evolution was proposed by
(a) Ernst Haeckel
(b) Karl Ernst von Baer
(c) Charles Darwin
(d) Alfred Wallace

8. Which of the following RNAs is not required for the synthesis of protein ?
(a) *m*RNA (b) *t*RNA
(c) *r*RNA (d) *si*RNA

*Memory based

9. Which of the following is not a step in Multiple Ovulation Embryo Transfer Technology (MOET)?
(a) Cow is administered hormone having LH like activity for super ovulation
(b) Cow yields about 6-8 eggs at a time
(c) Cow is fertilised by artificial insemination
(d) Fertilised eggs are transferred to surrogate mothers at 8-32 cell stage

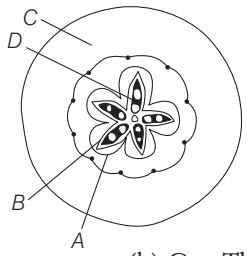
10. Identify the microorganism which is responsible for the production of an immunosuppressive molecule cyclosporin-A.
(a) *Clostridium butylicum*
(b) *Aspergillus niger*
(c) *Streptococcus cerevisiae*
(d) *Trichoderma polysporum*

11. DNA strands on a gel stained with ethidium bromide when viewed under UV radiation, appear as
(a) yellow bands
(b) bright orange bands
(c) dark red bands
(d) bright blue bands

12. In a mixture, DNA fragments are separated by
(a) bioprocess engineering
(b) restriction digestion
(c) electrophoresis
(d) polymerase chain reaction

13. With regard to insulin choose the correct options.
I. *C*-peptide is not present in mature insulin.
II. The insulin produced by *r*DNA technology has *C*-peptide.
III. The pro-insulin has *C*-peptide.
IV. *A*-peptide and *B*-peptide of insulin are interconnected by disulphide bridges.
Choose the correct answer from the options given below.
(a) II and IV (b) II and III
(c) I, III and IV (d) I and IV

14. Which part of the fruit, labelled in the given figure makes it a false fruit?



(a) *B* → Endocarp (b) *C* → Thalamus
(c) *D* → Seed (d) *A* → Mesocarp

15. Amensalism can be represented as
(a) species A (–) : species B (0)
(b) species A (+) : species B (+)
(c) species A (–) : species B (–)
(d) species A (+) : species B (0)

16. Which of the following statement is not correct?
(a) Pyramid of biomass in sea is generally inverted
(b) Pyramid of biomass in sea is generally upright
(c) Pyramid of energy is always upright
(d) Pyramid of numbers in a grassland ecosystem is upright

17. In the following in each set a conservation approach and an example of method of conservation are given
(1) *In situ* conservation–Biosphere reserve
(2) *Ex situ* conservation–Sacred groves
(3) *In situ* conservation–Seed bank
(4) *Ex situ* conservation–Cryopreservation
Select the option with correct match of approach and method.
(a) (1) and (3) (b) (1) and (4)
(c) (2) and (4) (d) (1) and (2)

18. *In situ* conservation refers to ..... .
(a) conserve only high risk species
(b) conserve only endangered species
(c) conserve only extinct species
(d) protect and conserve the whole ecosystem

19. Montreal protocol was signed in 1987 for control of
(a) emission of ozone depleting substances
(b) release of green house gases
(c) disposal of *e*-wastes
(d) transport of genetically modified organisms from one country to another

20. Snow blindness in Antarctic region is due to
(a) inflammation of cornea due to high dose of UV-B radiation
(b) high reflection of light from snow
(c) damage to retina caused by infrared rays
(d) freezing of fluids in the eye by low temperature

21. Match the list I with list II.

	List I		**List II**
A.	Fourth trophic level	1.	Crow
B.	Second trophic level	2.	Vulture
C.	First trophic level	3.	Rabbit
D.	Third trophic level	4.	Grass