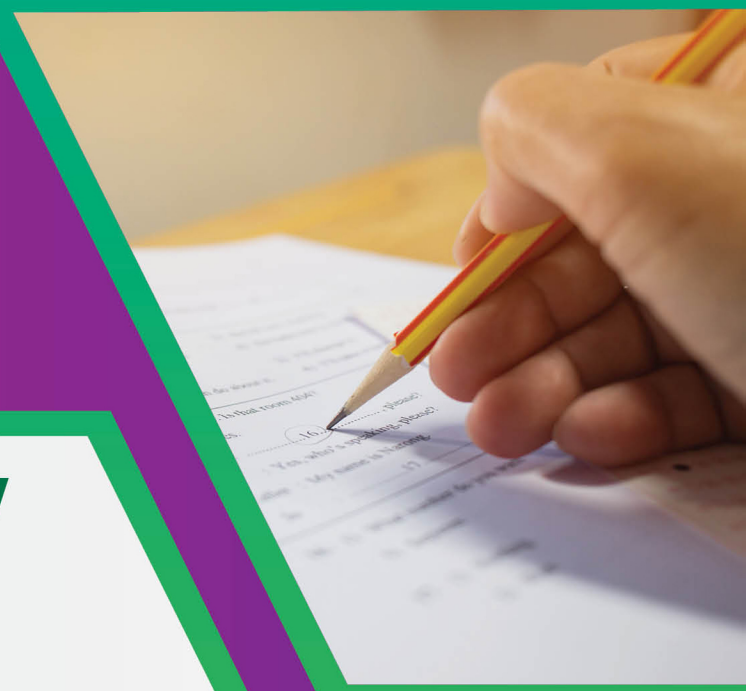
SAMPLE CONTENT

10 PRACTICE PAPER SET

IN ACCORDANCE WITH THE LATEST CUET (UG) PAPER CONDUCTED BY NATIONAL TESTING AGENCY

CUET (UG)

Common University Entrance Test



BIOLOGY

Section - II CODE: 304

Features:

- Based on the notified syllabus prescribed by NTA
- Smart keys provided to crack questions efficiently
- Includes solved CUET (UG) 2022 question paper
- Covers a variety of questions:
  - Passage / Case - Study Based Questions
  - Statement Based Questions
  - Match the Columns

Target Publications® Pvt. Ltd.

10 PRACTICE PAPER SET

CUET (UG)

(Common University Entrance Test)

BIOLOGY

Sample Content

SALIENT FEATURES:

- Created as per the syllabus prescribed by **NTA**
- In accordance with the latest CUET (UG) Paper conducted by **NTA**
- Set of 10 full length Question Papers with Answers and Solutions
- Exhaustive coverage of all types of questions based on the latest CUET (UG) question paper
- **Smart Keys** provided to crack questions efficiently
- Includes **Solved Question Paper** of CUET (UG) 2022–18th August (Slot - 2)

Printed at: **Print to Print,** Mumbai

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PREFACE

The Common University Entrance Test, CUET (UG) is a crucial milestone for students as they progress towards their undergraduate education. It is the sole opportunity for them to gain admission into premier undergraduate institutions and courses after the completion of Class XII.

Target Publications, with more than a decade of experience and expertise in the domain of competitive examination, offers **'CUET (UG) 10 Practice Paper Set'** – Biology for CUET (UG) aspirants, which is a meticulously designed book to assess the threshold of knowledge imbibed by students.

This book charts out a compilation of 10 Practice Papers aimed at students appearing for the CUET (UG) examination. Every question paper in this book has been created in line with syllabus prescribed by NTA for CUET (UG) Biology.

Each paper covers various question types (***Passage/Case-Study Based Questions, Match the Columns, Statement Based Questions***) based on CUET (UG) - 2022 question paper and touches upon all the conceptual nodes of Biology. The questions throughout this book are specifically curated by our expert authors with an astute attention to detail. The core objective of this book is to gauge the student's preparedness to appear for CUET (UG) examination.

To aid students, ***Solutions*** are provided as deemed necessary. ***Smart Keys*** are provided selectively to encourage cracking a question efficiently by lateral thinking. ***Question paper of CUET (UG) 2022*** [18th August, 2022 (Slot - 2)] is provided along with solution to offer students a glimpse of the complexity of questions asked in entrance examination. The paper has been split topic wise to let the students know which of the topics were more relevant in the latest examination.

Apart from mastery on the subject content, we hope that this book will also help students to achieve objectives such as time-management and develop their ability to utilize the paper-pattern format (choice of questions to attempt) to their advantage in order to maximize their scores.

We hope that the book helps the learners as we have envisioned.

Publisher

Edition: First

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've nearly missed something or want to applaud us for our triumphs, we'd love to hear from you.
Please write to us on: mail@targetpublications.org

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Disclaimer

This reference book is based on the CUET (UG) official syllabus prescribed by National Testing Agency (NTA). We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

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Syllabus for CUET (UG) - Biology

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 polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination– In humans, birds, honey bee; 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 finger printing.

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, gene therapy; Genetically modified organisms- Bt crops; Transgenic Animals; Biosafety issues– Biopiracy and patents.

Sample Content

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.

Sample Content

Broad features of CUET (UG)

Mode of Examination: Computer Based Test (CBT) mode						
Sections	**Subjects/ Tests**	**Questions to be Attempted**	**Marks per Question**	**Total Marks**	**Question Type**	**Duration**
Section IA - Languages	There are 13 different languages. Any of these languages may be chosen.	40 questions out of 50 in each language	5	200	• Language to be tested through Reading Comprehension based on different types of passages–Factual, Literary and Narrative, [Literary Aptitude and Vocabulary] • MCQ Based Questions	45 Minutes for each language
Section IB - Languages	There are 20 Languages. Any other language apart from those offered in Section I A may be chosen.					
Section II - Domain	There are 27 Domains specific Subjects being offered under this Section. A candidate may choose a maximum of Six Domains as desired by the applicable University/ Universities.	40 questions out of 50 in each subject	5	200	• Input text can be used for MCQ Based Questions • MCQs based on syllabus given on NTA website	45 Minutes for each Domain Specific Subjects
Section III General Test	For any such undergraduate programme/ programmes being offered by Universities where a General Test is being used for admission.	60 questions out of 75	5	300	• Input text can be used for MCQ Based Questions • General Knowledge, Current Affairs, General Mental Ability, Numerical Ability, Quantitative Reasoning (Simple application of basic mathematical arithmetic/algebra geometry/mensuration /stat taught till Grade 8), Logical and Analytical Reasoning	60 Minutes
Note: • One mark will be deducted for a wrong answer. • Unanswered/Marked for Review will be given no mark (0).						

Candidates are advised to visit the NTA CUET (UG) official website ***https://cuet.samarth.ac.in/*** *for latest updates regarding the Examination.*

Sample Content

Index

Sample Content

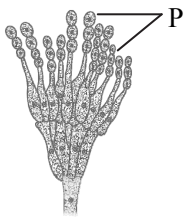
PRACTICE PAPER – 01 BIOLOGY

Time: 45 minutes **Total Marks: 200**

Instructions:

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

1. Identify the asexual reproductive structure 'P' in the given diagram.



(A) Conidia
(B) Gemmules
(C) Buds
(D) Zoospores

2. In angiosperm, triple fusion is necessary for the formation of
(A) seed coat (B) fruit wall
(C) embryo (D) endosperm

3. The genotypes of a Husband and Wife are I^AI^B and I^Ai respectively. Among the blood types of their children, how many different genotypes and phenotypes are possible?
(A) 3 genotypes; 3 phenotypes
(B) 3 genotypes; 4 phenotypes
(C) 4 genotypes; 3 phenotypes
(D) 4 genotypes; 4 phenotypes

4. Which of the following statement is correct with respect to tubectomy?
(A) Small part of the fallopian tube is removed or tied up.
(B) Ovaries are surgically removed .
(C) Small part of vas deferens is removed or tied up.
(D) Uterus is surgically removed.

5. The transport of which neutrotransmitter is interfered by cocaine?
(A) Acetylcholine (B) Serotonin
(C) GABA (D) Dopamine

6. Which of the following is not an objective of Biofortification in crops?
(A) Improve micronutrient and mineral content
(B) Improve protein content
(C) Improve resistance to diseases
(D) Improve vitamin content

7. If we have to break open the cell to release DNA along with other macromolecules, which of the following enzyme is used to break bacterial cell wall?
(A) Cellulase (B) Lysozyme
(C) Chitinase (D) Protease

8. _____ are removed during primary treatment of sewage.
(A) Dissolved organic impurities
(B) Micro-organisms
(C) Suspended stable particles
(D) Toxic substances

9. Which of the following is TRUE for Allen's rule?
(A) It states that mammals from warmer climates generally have shorter ears and limbs to minimize heat loss.
(B) Mammals in colder climates generally have low basal metabolism rate.
(C) Mammals in warmer climates generally have high basal metabolism rate.
(D) Mammals from colder climates generally have shorter ears and limbs to minimize heat loss.

10. Secondary productivity is regarded as the rate of formation of the new organic matter by
(A) producers (B) parasite
(C) consumers (D) decomposers

11. The Adenosine deaminase deficiency results into
(A) Addison's disease
(B) Dysfunction of Immune system
(C) Parkinson's disease
(D) Digestive disorder

12. Androecium is made up of
(A) stamens (B) ovules
(C) style (D) stigma

13. Select the CORRECT sequence for transport of sperm cells in male reproductive system.
(A) Seminiferous tubules → Vasa efferentia → Epididymis → Inguinal canal → Urethra
(B) Testis → Epididymis → Vasa efferentia → Vas deferens → Ejaculatory duct → Inguinal canal → Urethra → Urethral meatus
(C) Testis → Epididymis → Vasa efferentia → Rete testis → Inguinal canal → Urethra
(D) Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Vas deferens → Ejaculatory duct → Urethra → Urethral meatus

Sample Content

14. Match the term in Column I with their description in Column II and choose the correct option.

	Column I		Column II
i.	Dominance	a.	Many genes govern a single character
ii.	Co-dominance	b.	In a heterozygous organism only one allele expresses itself
iii.	Pleiotropy	c.	In a heterozygous organism both alleles express themselves fully
iv.	Polygenic inheritance	d.	A single gene influences many characters

(A) i – d, ii – c, iii– b, iv – a
(B) i – d, ii – c, iii – a, iv – b
(C) i – b, ii – a, iii – d, iv – c
(D) i – b, ii – c, iii – d, iv – a

15. Evolution means
(A) only the history of race
(B) only the development of race
(C) history and development of race with variations
(D) Development of the race without variations.

16. After entering into the host cell, piece of DNA that is transferred as part of recombinant DNA technique,
(A) starts immediate duplication of itself
(B) destroys original gene
(C) gets incorporated in the genome of the recipient
(D) both (B) and (C)

17. The primary producers of the deep-sea hydrothermal vent ecosystem are
(A) Coral reefs
(B) Green algae
(C) Chemosynthetic bacteria
(D) Blue-green algae

18. The two antibiotic resistance genes on vector pBR322 are for
(A) Tetracycline and Kanamycin
(B) Ampicillin and Tetracycline
(C) Ampicillin and Chloramphenicol
(D) Chloramphenicol and Tetracycline

19. **Assertion:** Inbreeding increases the productivity of inbred population.
Reason: Inbreeding involves accumulation of less desirable genes and elimination of superior genes.
(A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.

20. ____(i)____ is a outermost wall layer of microsporangium and ____(ii)____ is a innermost wall layer of microsporangium in an anther.
(A) i- Endothecium , ii- tapetum
(B) i- Epidermis, ii- endodermis
(C) i- Epidermis , ii- middle layer
(D) i- Epidermis, ii- tapetum

21. Practice of mating of superior males of one breed with superior females of another breed is
(A) Inbreeding (B) Outbreeding
(C) Cross breeding (D) Both (B) and (C)

22. Golden rice is genetically modified crop plant where the incorporated gene is meant for biosynthesis of
(A) Vitamin C (B) Vitamin B
(C) Vitamin A (D) Omega 3

23. In the restriction enzyme *Eco*R I the letter 'R' refers to the name of the
(A) species (B) genus
(C) variety (D) strain

24. In human beings, usually the gestation period lasts for about _____ days, from beginning of the last menstrual cycle.
(A) 280 (B) 266
(C) 256 (D) 243

25. Which blood cells can engulf bacteria by phagocytosis?
(A) Eosinophil and Basophil
(B) Basophil and Lymphocyte
(C) Neutrophil and Monocyte
(D) Neutrophil and Lymphocyte

26. Choose the CORRECT sequence of events occur in human reproduction.
(A) Gametogenesis → insemination → fertilization → implantation → parturition
(B) Gametogenesis → fertilization → insemination → implantation → parturition
(C) Gestation → gametogenesis → insemination → implantation → fertilization → parturition
(D) Gametogenesis → insemination → gestation → implantation → fertilization → parturition

Sample Content

27. In which of the following interactions both partners can be adversely affected?
(A) Mutualism (B) Competition
(C) Predation (D) Parasitism

28. Bt toxin is produced by
(A) *Clostridium butylicum*
(B) *Bacillus thuringiensis*
(C) *Saccharomyces cerevisiae*
(D) *Thermus aquaticus*

29. Conversion of milk to curd improves its nutritional value by increasing the amount of
(A) Vitamin B_{12} (B) Vitamin A
(C) Vitamin D (D) Vitamin E

30. A true breeding plant is
(A) always homozygous recessive in its genetic constitution
(B) one that is able to bred on its own
(C) produced due to cross pollination among unrelated plants
(D) near homozygous and produces offsprings of its kind

31. Capacitation occurs in
(A) Rete testis
(B) Epididymis
(C) Vas deferens
(D) Female Reproductive tract

32. Niche is
(A) the range of temperature that the organism needs to live
(B) the physical space where an organism lives
(C) all the biological factors in the organism's environment
(D) the functional role played by the organism where it lives.

33. Which organism is common in breaking of cellulose in rumen of cattle and in digestion of anaerobic sludge?
(A) LAB
(B) *Streptococcus*
(C) *Methanobacterium*
(D) *Staphylococci*

34. Industrial melanism is an example of
(A) Neo Lamarckism (B) Neo Darwinism
(C) Natural selection (D) Mutation

35. Which of the following factor is responsible for declining ratio of female: male?
(A) Periodic abstinence
(B) Female foeticide
(C) Contraceptives
(D) Coitus interruptus

36. ZZ/ZW type of sex determination is seen in
(A) platypus (B) snails
(C) cockroach (D) peacock

37. **Statement I:** Due to HIV, the number of T_H cells progressively decrease in an infected person.
Statement II: Thymus gland of mammals is a secondary lymphoid organ.
(A) Both statement I and statement II are true
(B) Both statement I and statement II are false
(C) Statement I is true. But statement II is false
(D) Statement I is false. But Statement II is true

38. In India, the organization responsible for assessing the safety of introducing genetically modified organisms for public use is
(A) Research Committee on Genetic Manipulation (RCGM)
(B) Council for Scientific and Industrial Research (CSIR)
(C) Indian Council of Medical Research (ICMR)
(D) Genetic Engineering Appraisal Committee (GEAC)

39. Match List-I with List-II.

List – I		List – II	
(a)	Filariasis	(i)	*Haemophilus influenzae*
(b)	Amoebiasis	(ii)	*Trichophyton*
(c)	Pneumonia	(iii)	*Wuchereria bancrofti*
(d)	Ringworm	(iv)	*Entamoeba histolytica*

Choose the correct answer from the options given below

	(a)	(b)	(c)	(d)
(A)	(ii)	(iii)	(i)	(iv)
(B)	(iv)	(i)	(iii)	(ii)
(C)	(iii)	(iv)	(i)	(ii)
(D)	(i)	(ii)	(iv)	(iii)

40. GIFT stands for _____.
(A) Gamete intra fallopian transfer
(B) Gamete inter fallopian transfer
(C) Gamete intra follicle transfer
(D) Gamete inter follicle transfer

Read the following passage and answer the questions from 41 to 45.

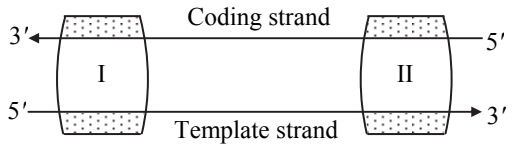
At the Initiation phase, the RNA polymerase holoenzyme assembles at the promoter region. The dissociation of *sigma factor* allows the core enzyme to proceed along the DNA template. It synthesizes mRNA by adding RNA nucleotides according to the base pairing rules. Only one of the two DNA strands is transcribed. The transcribed strand of DNA is called the template strand because it is the template for mRNA production.

Sample Content

The mRNA produced is complementary to the template strand and is almost identical to the other DNA strand with the exception that RNA contains a uracil (U) in place of the thymine (T) found in DNA. RNA polymerase adds up new nucleotides onto the 3′-OH group of the previous nucleotide. The growing mRNA strand is being synthesized in the 5′ to 3′ direction.

41. The mRNA produced during transcription is
(A) Complementary to the template strand
(B) Complementary to the non-template strand
(C) Identical with the template strand
(D) 100 percent identical with the non-template strand

42. In the given transcription unit, identify the regions I and II respectively.



(A) Promoter and Terminator
(B) Rho factor and Sigma factor
(C) Terminator and Promoter
(D) Operator and Inhibitor

43. Non template strand is also termed as
(A) Coding strand
(B) Non coding strand
(C) Complimentary strand
(D) Okazaki strand

44. If the template strand is having a sequence as 3'-ATGGCTATAGTCA-5', what will be the sequence of primary mRNA produced during transcription?
(A) 3'- UACCGAUAUCAGU-5'
(B) 5'-TACCGATATCAGT-3'
(C) 5'-UACCGAUAUCAGU-3'
(D) 3'- TACCGATATCAGT-5'

45. DNA strands are
(A) Convergent (B) Divergent
(C) Semi parallel (D) Anti parallel

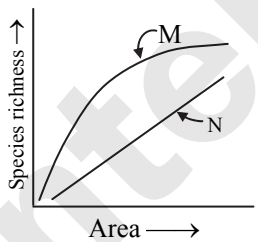
Read the following passage and answer the questions from 46 to 50.

German naturalist Alexander Von Humboldt observed that species richness increases with the increase in area but up to a certain limit. The relation between species richness and area for variety of taxa like angiosperm plants, birds, bats and freshwater fishes is a rectangular hyperbola. On logarithmic scale, the relationship becomes linear. If the species-area relationships are analyzed, in large areas for e.g. continents, the slope of the line (Z value) would lie in the range of 0.6 to 1.2 which indicates much steeper slope.

46. 'Species – Area relationships' was given by which scientist?
(A) Allen
(B) Alexander von Humboldt
(C) Paul Ehrlick
(D) Gause

47. The graph of species area relationship is a
(A) parabola
(B) rectangular hyperbola
(C) ellipse
(D) straight line

48. Match for M and N with species-area relationship shown in the graphic representation below and choose the correct option.



(A) $M \rightarrow S = CA^Z$, $N \rightarrow \log S = \log C + Z \log A$
(B) $M \rightarrow S = CZ^A$, $N \rightarrow \log C = \log S + Z \log A$
(C) $M \rightarrow S = CA^Z$, $N \rightarrow \log S = \log C + A \log Z$
(D) $M \rightarrow S = AZ^C$, $N \rightarrow \log ZA = \log C + \log S$

49. The correct equation depicting species–area relationship is
(A) $\log S = \log C + Z \log A$
(B) $\log C = \log S + Z \log A$
(C) $\log A = \log C + Z \log S$
(D) $\log Z = \log C + S \log A$

50. What will be the slope of line, if we analyse species area relationship among different continents?
(A) 0.1 to 0.2 (B) 0 to 2
(C) 0.6 to 1.2 (D) 1 to 2

Sample Content

Practice Paper – 01

1. **(A)** **2.** **(D)**

3. **(C)**

Husband $I^A\ I^B$ × Wife $I^A\ i$

Gametes: $(I^A)\ (I^B)$ $(I^A)\ (i)$

Offsprings:

	I^A	i
I^A	$I^A\ I^A$ 'A' blood group	I^A i 'A' blood group
I^B	$I^A\ I^B$ 'AB' blood group	I^B i 'B' blood group

Thus, number of genotypes : 4
number of phenotypes : 3

4. **(A)** **5.** **(D)**

6. **(C)**

7. **(B)**
Lysozyme acts on the peptidoglycan present in the bacterial cell wall.

8. **(C)** **9.** **(D)**

10. **(C)** **11.** **(B)**

12. **(A)**
Androecium is the male reproductive whorl consisting of stamens. Each stamen is made of a filament and anther.

13. **(D)**

Smart Key - 13
The passage of sperm in human male reproductive system:

Swati, **R**eema and **V**asanti, had an **Ep**ic **Va**cation and ate **E**xotic **U**nsweetened **P**ie

S – **S**eminiferous Tubules, **R** – **R**ete Testis, V**as** – **Vas**a efferentia, **Ep** — **Ep**ididymis, **Va** – **Va**s deferens, **E** – **E**jaculatory duct, **U** – **U**rethra, **P** - **P**enis

14. **(D)**

Smart Key - 14
In a heterozygous organism, only one allele expresses itself i.e. dominant allele. Thus (i-b). Hence option (A) and (B) are eliminated.
In co-dominance, both alleles express themselves fully in a heterozygous organism. Thus (ii-c).
Hence option (C) is eliminated and the correct option is (D).

15. **(C)** **16.** **(C)**

17. **(C)** **18.** **(B)**

19. **(C)**
Inbreeding involves accumulation of superior genes and elimination of less desirable genes.

20. **(D)**

Smart Key - 20
Wall layers of microsporangium (from outer side to inner side):
Epidermis → Endothecium → Middle layers → Tapetum
(Outermost) (Innermost)

21. **(D)** **22.** **(C)**

23. **(D)** **24.** **(B)**

25. **(C)**
Neutrophil and monocyte are major phagocytic cells of immune system.

26. **(A)** **27.** **(B)**

28. **(B)**

29. **(A)**
Lactic acid produced by LAB (Lactic acid bacteria) coagulate and partly digest milk proteins to produce curd.

30. **(D)**

31. **(D)**
Capacitation is the process in which the sperm undergoes functional changes that enables fertilization of oocyte. It is believed to be triggered by chemical and hormonal signals released by the pre-ovulatory follicle and thus occurs in the female reproductive tract (generally ampullary region of the fallopian tube).

32. **(D)** **33.** **(C)**

34. **(C)** **35.** **(B)**

36. **(D)**

37. **(C)**
Thymus gland of mammals is a primary lymphoid organ.

38. **(D)** **39.** **(C)**

40. **(A)** **41.** **(A)**

42. **(C)**

43. **(A)**

Smart Key - 43
Coding strand (5′ → 3′) does not code for anything.

Sample Content

CUET UG - 2022 Question Paper

18th August 2022 (Slot - 2)

Reproduction in organisms

1. Under dry condition *Amoeba* withdraws its pseudopodia and secretes a three layered hard covering around itself. This phenomenon is termed as:
   (A) Binary fission (B) Encystation
   (C) Sporulation (D) Multiple fission

Sexual Reproduction in Flowering Plants

2. Match List - I with List - II.

	List - I		List - II
i.	Perisperm	a.	Production of seeds without fertilization
ii.	Parthenocarpy	b.	The wall of fruit
iii.	Pericarp	c.	Development of fruits without fertilization
iv.	Apomixis	d.	Residual persistent nucellus present in some seeds

   Choose the correct answer from the options given below:
   (A) i – b, ii – a, iii – d, iv – c
   (B) i – c, ii – d, iii – a, iv – b
   (C) i – a, ii – b, iii – d, iv – c
   (D) i – d, ii – c, iii – b, iv – a

3. Which one of the following statement is incorrect?
   (A) When pollen is shed at 2-cell stage, double fertilisation doesn't take place.
   (B) Vegetative cell is larger than generative cell.
   (C) Pollen grain in some plants remain viable for months.
   (D) Intine is made up of cellulose and pectin.

4. The pollen tube enters the embryo sac through _____ located towards micropylar end.
   (A) antipodals (B) egg cell
   (C) secondary cells (D) synergids

Human Reproduction

5. Which among the following hormones is not produced by placenta?
   (A) Human Chorionic Gonadotropin
   (B) Human Placental lactogen
   (C) Estrogens
   (D) Relaxin

6. A primary spermatocyte after first meiotic division leads to the formation of _____ secondary spermatocyte.
   (A) two equal haploid cells
   (B) two unequal haploid cells
   (C) two diploid cells
   (D) four diploid cells

7. In humans, fertilization takes place in _____ region.
   (A) Ovary (B) Ampulla
   (C) Isthmus (D) Uterus

8. A pregnant female was admitted to the labour room. The mild uterine contractions started, but further strong uterine contractions were not taking place. Which of these could a doctor inject to induce delivery?
   (A) Oxytocin (B) Vasopressin
   (C) Relaxin (D) Prolactin

Reproductive Health

9. The most suitable method for a human female who cannot produce gamete, but can provide suitable environment for fertilisation, and further develops into foetus would be:
   (A) Intracytoplasmic sperm Injection
   (B) Zygote Intrafallopian Transfer
   (C) In-Vivo Fertilization
   (D) Gamete Intrafallopian Transfer

10. The technique in which the semen collected from the donor is artificially introduced either into the vagina or into the uterus is called _____.
   (A) IUT (B) IUI
   (C) GIFT (D) IVF

11. Which of the following disease is not transmitted sexually?
   (A) Hepatitis B (B) Typhoid
   (C) Gonorrhoea (D) Syphilis

Principles of Inheritance and Variation

12. Which of the following appropriately describes colour blindness?
   (A) Chromosomal disorder
   (B) Recessive autosomal disorder
   (C) X-linked recessive disorder
   (D) Dominant disorder

13. In F_2 generation of a Mendelian dihybrid cross the number of phenotypes and genotypes are:
   (A) 4 phenotypes and 16 genotypes
   (B) 9 phenotypes and 4 genotypes
   (C) 4 phenotypes and 9 genotypes
   (D) 4 phenotypes and 8 genotypes

14. Given below are two statements:
   Statement I: Thomas Hunt Morgan and his colleagues experimentally verified the chromosomal theory of inheritance.
   Statement II: Morgan worked with tiny fruit flies which could be grown in the laboratory by simple synthetic medium.
   In the light of the above statements, choose the correct answer from the options given below:
   (A) Both Statement I and Statement II are true
   (B) Both Statement I and Statement II are false
   (C) Statement I is correct but Statement II is false
   (D) Statement I is incorrect but Statement II is true

Sample Content

Solutions

1. (B)

2. (D)

3. (A)
When pollen grain is shed at 2-cell stage, the generative cell of the pollen grain divides by mitosis and forms two haploid gametes in the pollen tube (after pollination).
One male gamete fuses with the egg and the other fuses with two polar nuclei, and the double fertilization takes place.

4. (D)
Pollen tube enters the ovule through the micropyle and then enters one of the synergids through the filiform apparatus.

5. (*)
All the given hormones are produced by placenta.

6. (A)
After meiosis two equal haploid secondary spermatocytes are formed from a diploid primary spermatocyte.

7. (B)

8. (A)

9. (D)
Intra Cytoplasmic Sperm Injection (ICSI): Suggested when infertility is due to impairments in sperm motility or when spermatids fail to form spermatozoa.
Zygote Intrafallopian Transfer (ZIFT): Zygote or embryo up to 8 blastomeres is transferred into fallopian tube.
In-Vivo Fertilization: Ova from the wife / donor (female) and sperms from the husband / donor (male) are collected and are induced to form zygote.

10. (B)
IUI: Intra-uterine insemination

11. (B)
Typhoid is transmitted through contaminated food or water.

12. (C)

13. (D)
Phenotypic ratio of dihybrid cross: 9 : 3 : 3 : 1
Genotypic ratio of dihybrid cross: 1 :2 :1: 2: 4: 2: 1: 2 : 1

14. (A)

15. (D)
Polygenic Inheritance: Traits that are controlled by three or more genes.

16. (B)

17. (C)

18. (D)

19. (C)

20. (D)

21. (C)

22. (B)

23. (A)

24. (D)
Mucus coating: Physical barrier
Monocytes and macrophages: Cellular barriers
Saliva: Physiological barriers

25. (B)

26. (D)

27. (D)
Mule is offspring of male donkey and a female horse.

28. (B)
Spirulina can be grown on waste water from potato processing plants (containing starch), straw, molasses, animal manure and even sewage.

29. (A)
IR-8 is a semi-dwarf variety of rice developed at Taiwan and Philippines.

30. (B)

31. (B)

32. (B)

33. (C)

34. (*)
Option (A) and (C) both are correct options. If we ligate a foreign DNA at the *Bam* H I site of tetracycline resistance gene in it, the recombinant plasmid will lose tetracycline resistance and the recombinants will not grow in tetracycline containing medium.

35. (C)

36. (A)

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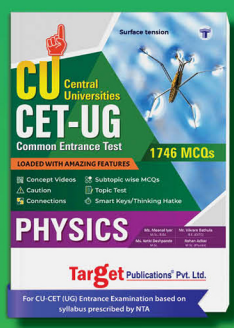

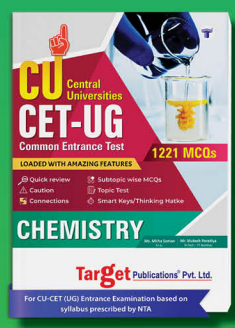

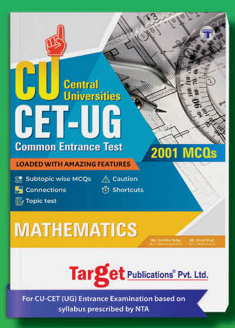

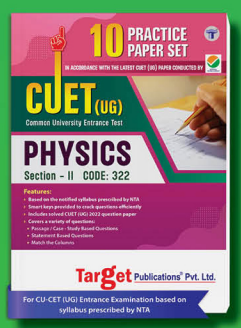

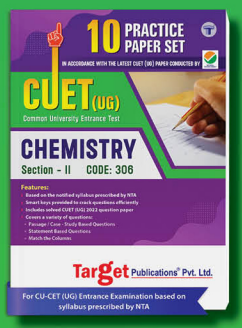

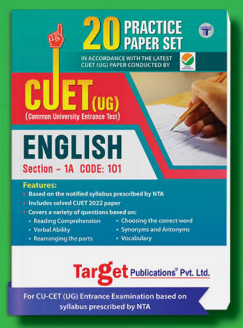

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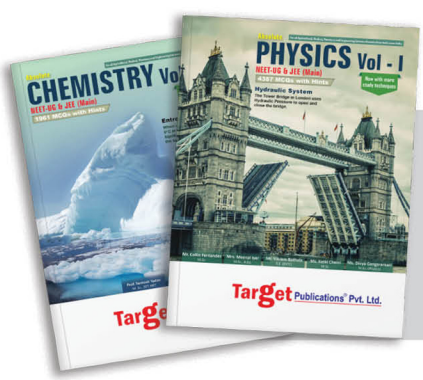

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