



Students of Kashmir
www.studentsofkashmir.com



Students of Kashmir

www.studentsofkashmir.com

Job Alerts, Education News and Study Material

Srinagar, J&K

Guess Paper/ Important Questions

Based on updated Syllabus, session 2024-25

12th Class

Biology

(Zoology/Botany)

By: [Students of Kashmir](#)

For Guess papers, Important questions, Previous Year Papers, PDF Notes, Handwritten Notes: [Follow our WhatsApp Channel](#)



Botany:

Unit-I: Reproduction in Flowering Plants (7 Marks)

1. Describe the structure of a flower and its role in reproduction.
2. Explain the development of male and female gametophytes.
3. What are the different types of pollination? Give examples.
4. Define double fertilization. Explain its significance.
5. Discuss special modes of reproduction like apomixis and polyembryony.

Unit-II: Genetics (9 Marks)

Heredity and Variation:

6. Explain Mendelian inheritance with suitable examples.
7. What is incomplete dominance? How does it differ from co-dominance?
8. Describe multiple alleles with reference to the inheritance of blood groups.
9. Explain the chromosomal theory of inheritance.

Molecular Basis of Inheritance:

10. Describe the structure and function of DNA and RNA.
11. What is DNA replication? Explain its process.
12. Define transcription and translation. Explain their role in protein biosynthesis.
13. What is the lac operon? Describe its regulation.

Unit-III: Biology and Human Welfare (7 Marks)

14. Define tissue culture. Discuss its applications.
15. Explain the role of microbes in food processing and industrial production.
16. How do microbes contribute to sewage treatment and biogas production?
17. What are biopesticides and bio-fertilizers? Give examples.
18. Explain the role of biotechnology in agriculture with reference to GMOs and BT crops.

Unit-IV: Ecology and Environment (12 Marks)

Populations:

19. Define population attributes and explain population growth patterns.
20. Differentiate between mutualism, competition, and predation with examples.

Ecosystems:

21. What are ecological pyramids? Describe their types.
22. Explain the concept of energy flow in an ecosystem.

Biodiversity and Conservation:

23. Define biodiversity and explain its importance.
24. What are biodiversity hotspots? Name any two.
25. Discuss different strategies for biodiversity conservation.



26. What are the causes and effects of species extinction?
27. Explain the significance of biosphere reserves, national parks, and wildlife sanctuaries.

Zoology

Unit-I: Reproduction in Animals (11 Marks)

1. Draw and explain the structure of male and female reproductive systems.
2. Describe the process of gametogenesis (spermatogenesis and oogenesis).
3. Explain the menstrual cycle and its hormonal regulation.
4. What is fertilization? Describe the process of embryo development up to blastocyst formation.
5. Discuss the process of implantation and placenta formation.
6. Write a short note on parturition and lactation.
7. What are Sexually Transmitted Diseases (STDs)? Name two bacterial and two viral STDs.
8. Explain different birth control methods and their importance.
9. What is Medical Termination of Pregnancy (MTP)? Discuss its significance.
10. Define assisted reproductive technologies (IVF, ZIFT, GIFT) and their applications.

Unit-II: Genetics and Evolution (12 Marks)

Genetics:

11. What is sex determination? Explain it in humans, birds, and honeybees.
12. Describe linkage and crossing over with suitable examples.
13. What is sex-linked inheritance? Explain with reference to hemophilia and color blindness.
14. Explain any two chromosomal disorders in humans (Thalassemia, Down's Syndrome, Turner's Syndrome, Klinefelter's Syndrome).
15. Write a short note on the Human Genome Project and DNA fingerprinting.

Evolution:

16. What is the origin of life? Explain the major theories of evolution.
17. Discuss Darwin's theory of evolution and its significance.
18. Explain the modern synthetic theory of evolution.
19. Define mutation and recombination. How do they contribute to evolution?
20. Explain the concept of natural selection with suitable examples.
21. What are gene flow and genetic drift? How do they affect evolution?
22. State and explain Hardy-Weinberg's principle.
23. What is adaptive radiation? Explain with examples.
24. Explain the concept of human evolution with supporting evidence.



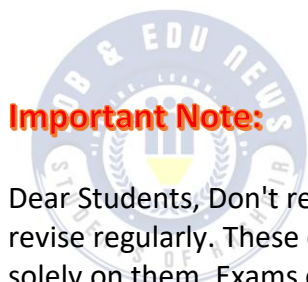
Unit-III: Biology in Human Welfare (7 Marks)

Health and Disease:

25. Define immunity. Explain the basic concepts of immunology and vaccines.
26. What are pathogens? Discuss their role in causing diseases.
27. Write a note on common human diseases: Hepatitis, Malaria, Dengue, Typhoid, Pneumonia, Amoebiasis, and Ringworm.
28. Explain the causes, symptoms, and prevention of HIV/AIDS.
29. How does drug and alcohol abuse affect adolescence?

Unit-IV: Biotechnology and Its Applications (5 Marks)

30. What are the basic principles and processes of biotechnology?
31. Explain the role of genetic engineering and recombinant DNA technology in biotechnology.
32. How is biotechnology applied in human health? Explain gene therapy and stem cell technology.
33. Write a short note on human insulin and vaccine production using biotechnology.
34. What are transgenic animals? Explain their applications.
35. Discuss important bio-safety issues in biotechnology.



Important Note:

Students of Kashmir

Dear Students, Don't rely **only** on these questions! Understand concepts, practice more, and revise regularly. These questions are **most probable** based on past patterns, but **don't rely** solely on them. Exams can be **unpredictable**, so prepare thoroughly **as per Syllabus**. Best of luck!



To get Guess Paper/ Important questions of other Subjects like Science, Social Science etc.

Visit: www.studentsofkashmir.com

For Guess papers, Important questions, Previous Year Papers, PDF Notes, Handwritten Notes: [Follow our WhatsApp Channel](#)