

CBSE SAMPLE QUESTION PAPER

Class – XII BIOLOGY

Time allowed: 3 hours

Maximum Marks: 70

General Instructions:

(i) All questions are compulsory.

(ii) This question paper consists of five Sections A, B, C, D and E. Section A contains 5 questions of one mark each, Section B is of 5 questions of two marks each, Section C is of 12 questions of three marks each. Section D is of 1 questions of four marks each and Section E is of 3 questions of five marks each.

(iii) There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.

(iv) Wherever necessary, the diagrams drawn should be neat and properly labelled.

Section A

1. State that law proposed by Mendel which is acceptable throughout without any exceptions.
2. Which mode of reproduction produces clones and why?
3. Sporopollenin is deposited on the wall of pollens then how does a pollen tube can emerge?
4. Write the mathematical expression of the Hardy Weinberg genetic equilibrium.
5. Which dye is used to stain gel so as to make DNA visible under ultra violet light?

Section B

6. What is meant by biofortification? How is it significant?
7. Why are PMC and MMC so important for gamete production in plants? Explain.
8. When a red flowered Snapdragon plant was hybridized with a white flowered Snapdragon plant all the F₁ plants were found to produce pink flowers. Describe the phenomenon responsible for it.

9. Homologous and analogous organs are evidences of evolution. Justify.
10. How are lactobacilli important to humans other than their role in setting milk into curd?

or

How are methanogens helpful in producing biogas?

Section C

11. The interspecific interactions within a population can be useful, harmful or neutral to the participating species. Explain each of such interactions with suitable examples.
12. Draw diagram of a two celled male gametophyte of an angiosperm. Also write about the functions of its two cells separately.
13. Give a diagrammatic representation of Miller's experiment and write down the purpose for conducting this experiment.

or

In early 1950s, there were hardly any mosquitoes in Delhi. Use of pesticide DDT initially was helpful to check mosquito larvae population but later on they evolved DDT resistance. Explain.

14. Describe that technology which has successfully increased the herd size of cattle in a brief time period to satisfy the ever increasing human demands.
15. What is a PCR? Why is taq polymerase essential for it? Explain its use in DNA fingerprinting.
16. What was the significance of using radioactive sulphur and radioactive phosphorus by Hershey and Chase in their experiment?

or

Name the scientists who proved that DNA replication is semi conservative. Explain DNA replication fork through a labeled diagram only.

17. Explain why father never passes on a haemophilia gene to his sons? Even with this condition haemophilia victims are mostly men while women are rarely affected. Give reasons.
18. "Microbes play a dual role when used for sewage treatment as they not only help to retrieve usable water but also generate fuel". Explain.
19. What is ADA deficiency? Explain any two ways of its treatment with special reference to its permanent treatment.

20. How does *Agrobacterium tumifaciens* works as a natural genetic engineer of plants? Mention contribution of Cohen and Boyer to the field of biotechnology.
21. How are endonucleases different from exonucleases in their functioning? Write name of any restriction endonuclease and describe the conventions followed in the naming of such enzyme.
22. a) Draw the diagram of an H₂L₂ molecule.
b) Differentiate between active and passive immunity with reference to the immunity provided by tetanus vaccine, colostrum, polio vaccine and snake antivenom.

Section D

23. Pankaj a notorious boy often involved in destruction of surrounding plants and killing small animals. You are given a responsibility to make him understand about importance of each and every organism present in world. How can you explain him about it and which hypothesis you will use for it?

Section E

24. a) Explain the different stages of oogenesis in human female starting from foetal life till it is completed.
b) Which hormones are secreted from the placenta of a human female working as endocrine gland.
- or
- a) Describe any three methods which can help any infertile couple become parents.
b) Why is amniocentesis banned these days?
25. Draw a well labeled diagram of a transcription unit and give detailed account of transcriptional gene regulation in a prokaryote.

or

How is 3.3×10^9 bp long DNA is accommodated inside a nucleus with diameter about 10^{-6} m? Explain.

26. a) Define the phenomenon of Ecological succession.
b) Write about various stages of succession in a pond.
c) Differentiate between primary and secondary succession.

or

- a) What is meant by the chemical called polybend? Where is it used?

- b) What are electrostatic precipitators? How do they work?
- c) What is good ozone and bad ozone in the atmosphere? Mention the unit in which ozone thickness is measured.

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