

CBSE
Class XI Biology
Sample Paper – 5

Time: 3 hrs

Total marks: 70

General instructions:

1. All questions are compulsory.
2. The question paper consists of four sections A, B, C and D.
3. Internal choice is given in all the sections. A student has to attempt only one of the alternatives in such questions.
4. Section A contains 5 questions of 1 mark each.
5. Section B has 7 questions of 2 marks each.
6. Section C is of 12 questions of 3 marks each.
7. Section D has 3 questions of 5 marks each.
8. Wherever necessary, the diagrams drawn should be neat and properly labelled.

SECTION A

1. What is the grass-green colour of green algae due to? [1]
2. What is the function of the ciliated epithelium in the human body? [1]
3. What are dyads? [1]

OR

If a tissue has at a given time 1024 cells, then how many cycles of mitosis have the original parental single cell undergone?

4. Name the enzyme which catalyses the phosphorylation of glucose. [1]
5. Where are the taste buds located on our tongue? [1]

OR

Name the structure which regulates the opening of the oesophagus into the stomach.

SECTION B

6. Mention any four features present in animals grouped under Phylum Mollusca. [2]
7. Differentiate between the morphology of stem and root. [2]
8. What are kinetochores? What is their function? [2]

9. Describe the 9+2 pattern of organisation in the axoneme of cilia/flagella. [2]

OR

Give the specific scientific terms for the following:

- (a) Cluster of ribosomes found in the cytoplasm.
- (b) Extensive infoldings of the inner membrane of the mitochondria.
- (c) Stacks of closely packed thylakoids.
- (d) Stalked particles on the inner membrane of the mitochondria.

10. In what form do plants absorb magnesium from the soil? List any two magnesium deficiency symptoms observed in leaves. [2]

OR

Name four elements whose deficiency causes necrosis.

11. Why does the colour of a leaf kept in the dark frequently become yellow or pale green? Which pigment do you think is more stable? [2]

12. Mention any two economic uses of agar. [2]

SECTION C

13. Angiosperms and gymnosperms are seed-producing plants. Although what we eat from Pinus plants (Chilgoza) are called dry fruits, they are not fruits. [3]

- (a) Why are fruits not formed in gymnosperms?
- (b) What are the two types of seeds found in Angiosperms with reference to the number of cotyledons? Give one example of each.
- (c) What value do we learn from these differences?

14. Differentiate between brush-bordered epithelium and ciliated epithelium. [3]

15. Mention the special features of the eye in cockroach. [3]

OR

Complete the following statements:

- (a) In cockroach, grinding of food particles is performed by _____.
- (b) Hindgut of cockroach is differentiated into _____, _____ and _____.
- (c) In cockroach, blood vessels open into spaces called _____.

16. How is the study of plant anatomy useful to us? [3]

17. Describe the primary structure of proteins. [3]

18. Write any two characteristics of the mitochondria and draw a labelled diagram of it.

OR

What are nuclear pores? Write their functions.

19. List the main differences between mitosis and meiosis. [3]

20. Explain the apoplastic movement of water in plants. [3]

OR

Describe the role played by protein pumps during active transport in plants.

21. How is ubiquinone reduced in the electron transport system? Where is it located? [3]

22. List the three major forms in which carbon dioxide is transported in our blood. [3]

23. Because of some physiological reasons, the blood glucose level of an otherwise normal person has shot up above normal. How will this condition be returned to normal through hormone action? [3]

24. Give the chemical name of one example of each of the following and mention one function of each of them: [3]

- (a) Natural auxins
- (b) Synthetic auxins
- (c) Gaseous plant hormones

OR

‘All elements that are present in a plant need not be essential for its survival’. Comment.

SECTION D

25. Explain why [5]

- (a) Exogenous application of auxin fails to enhance the growth of intact plants.
- (b) Vitamins are not considered plant growth hormones.
- (c) It is appropriate to call a short-day plant a long-night plant.
- (d) Plants belonging to halophytes and growing in marshy lands face great difficulty in germination.
- (e) Gibberellins do not enhance the growth of isolated plant parts.

OR

- (a) With the help of well-labelled diagrams, describe the process of plasmolysis in plants, giving appropriate examples.
- (b) Explain what will happen to a plant cell if it is kept in a solution with higher water potential.

26. Briefly describe the structure of the eye with the help of a diagram. [5]

OR

- i. What is meant by double circulation? Illustrate with the help of a diagram.
- ii. What is its significance?

27. How does the butter in your food get digested and absorbed in the body?

OR

An Rh-negative woman is carrying an Rh-positive foetus for the second time. Describe the consequences of Rh-incompatibility in this case.