

CBSE
Class XI Biology
Sample Paper – 2

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. Name two non-chordate phyla where animals are radially symmetrical. [1]

2. Which type of meristem is a cylindrical meristem? [1]

OR

Arrange the following in the sequence in which you would find them in a plant starting from the periphery:

Pericycle, Epidermis, Pith, Endodermis, Cortex

3. What is the function of GLUT-4? [1]

4. Which part of the human body should one use to demonstrate the stages of mitosis? [1]

5. What is the advantage of synovial fluid? [1]

OR

What is a neuromuscular junction?

SECTION B

6. Describe the phylogenetic classification system. [2]
7. What are inclusion bodies? Give three examples of inclusion bodies found in prokaryotes. [2]

OR

Differentiate between essential and non-essential amino acids.

8. Give two reasons as to why photosynthesis is important for sustaining life on the Earth. [2]
9. Describe the symport and antiport methods of transport. [2]
10. Plants and animals grow by mitotic cell divisions. What differences do they exhibit in their growth? [2]

OR

Where does mitosis take place in plants and animals? What is its significance in multicellular organisms?

11. What is a root cap? What is its function? [2]
12. Name the stage of the cell cycle at which each of the following events occurs: [2]
- (a) Chromosomes are moved to the spindle equator.
 - (b) Centromere splits and chromatids separate.
 - (c) Pairing between homologous chromosomes.
 - (d) Crossing over between homologous chromosomes.

SECTION C

13. Draw a labelled diagram of a Funaria plant showing the sporophyte and gametophyte. [3]
14. Name the types of cells present in the epithelium of gastric glands. Mention their secretions. [3]

OR

Name the three enzymes secreted by the pancreas and their action on proteins, fats and starch.

15. Describe the process of fertilisation and development of an earthworm. [3]

16. [3]
i. Name the tissue which lines the trachea in humans. State any one advantage of this tissue being present there.
ii. Why is mosaic vision also known as nocturnal vision?

17. Who proposed the cell theory? List its main postulates. [3]

OR

What is a mesosome in a prokaryotic cell? Mention its functions.

18. [3]
i. What is the endomembrane system? List its components.
ii. Why are mitochondria called semiautonomous organelles?

19. Define cytokinesis. How is it accomplished in animal cells? [3]

20. How does oxidative phosphorylation differ from photophosphorylation? Explain. [3]

OR

List three internal plant factors which determine the rate of photosynthesis.

21. There are three phases in the growth of a plant. Name them and also mention what each of them corresponds to. [3]

22. How does the liver serve as a digestive as well as a secretory organ? [3]

OR

State the role of pancreatic juice in the digestion of proteins.

23. Describe the three disorders of the skeleton and joints. [3]

24. Give information about the following mineral nutrients in plants as asked against each:
(a) Sulphur: Any one amino acid in which it is present, effect of deficiency on flowering.
(b) Manganese: Chemical form in which it is absorbed from the soil, the best defined function in photosynthesis.
(c) Calcium: Two roles during cell division.

SECTION D

25. What are the steps involved in the formation of a root nodule? [5]

OR

Explain with examples: Macronutrients, micronutrients, beneficial nutrients, toxic elements and essential elements

26. [5]

- i. Where is the pancreas located?
- ii. Why is the pancreas considered an endocrine as well as an exocrine gland?
- iii. Draw a diagram to show the duct system of the pancreas pouring into the duodenum.

OR

How many vertebrae do we have in all? Categorise them on the basis of their location and give the specific number in each category.

27. How is respiration regulated? [5]

OR

Explain the autoregulatory mechanism of GFR.