

CBSE
Class XI Biology
Sample Paper – 9

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.
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SECTION A

1. Name an alga which is used in laboratory culture media. [1]
2. Why is a leaf of silk cotton called palmately compound? [1]
3. Which stage of cell division will you select to study the morphology of chromosomes and why? [1]

OR

Which is the longest phase of the cell cycle?

4. What does the variegated leaf experiment of photosynthesis prove? [1]
5. What is serum? [1]

OR

Name the enzyme which facilitates the conversion of fibrinogen to fibrin.

SECTION B

6. What is meant by haemocoel? Name the phylum which shows this feature. [2]
7. Differentiate between saturated and unsaturated fats. [2]

OR

What are nucleic acids? Name the two types of nucleic acids.

8. Differentiate between tidal volume and residual volume. [2]

9. [2]

(a) What is hypertension?

(b) Name two vital organs affected by high blood pressure or hypertension.

10. Differentiate between syngamy and triple fusion. [2]

11. List any four functions of bones. [2]

OR

Which pairs of ribs are called false ribs? Why?

12. Why is the mitochondrion called the powerhouse of the cell? [2]

SECTION C

13. Describe the three common steps in the sexual reproduction of fungi. [3]

OR

A virus is considered a living organism and an obligate parasite when inside a host cell. However, a virus is not classified along with bacteria or fungi. What are the characters of a virus which are similar to non-living objects?

14. Enumerate three points to show the interaction of cockroach with mankind. [3]

15. Describe any three modified forms of tap root for storage with one example of each. [3]

16. [3]

(a) What are spermathecal pores? Mention their location and function in earthworm.

(b) How many times do nymphs moult to reach the adult form of cockroach?

17. What is the significance of mitosis? [3]

18. [3]

(a) Differentiate between the primary and secondary wall.

(b) What is the significance of a vacuole in a plant cell?

19. [3]

(a) What is chromatin? Describe its chemical composition.

(b) What does 'S' refer to in a 70S and 80S ribosome?

OR

Represent diagrammatically the internal structure of a cilium/flagellum.

20. [3]
(a) What are the chemical changes in a pyruvic acid molecule before it enters the mitochondria?
(b) What is the function of phosphofructokinase in glycolysis?
(c) Photorespiration is a wasteful process. Give two reasons.

21. [3]
(a) What is imbibition pressure?
(b) What is the usefulness of imbibition pressure to seed germination?
(c) How is nitrate assimilated by plants?

OR

- (a) What is complex III in ETS of mitochondria? Describe its function.
(b) Draw a diagram of the light harvesting complex.

22. Give the location and function of the following in the human eye: [3]
(a) Cornea
(b) Iris

23. Draw a well-labelled diagram of the human respiratory system. [3]

OR

Name the structures which constitute the thoracic chamber. What is the significance of the closed thoracic chamber?

24. Give the schematic representation of the pathway for anaerobic respiration. [3]

SECTION D

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

OR

What are the conditions necessary for fixation of atmospheric nitrogen by *Rhizobium*?
What is its role in N_2 fixation?

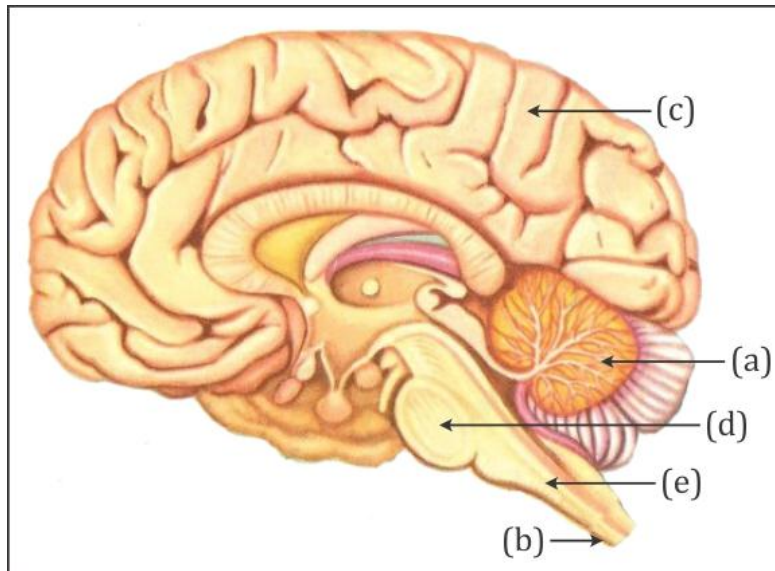
26. Discuss the main steps in the digestion of proteins as food passes through the alimentary canal of human beings. [5]

OR

What is meant by double circulation? State its significance.

27. Study the given figure carefully and answer the following questions:

[5]



(a) Label the parts marked (a), (b), (c), (d) and (e).

(b) Give one major function of each.

OR

(a) Study the given figure carefully and label the parts (a), (b), (c), (d) and (e).

(b) Give one major function of each of these.

