

Model Question Paper - 2 (unsolved)

XI

BIOLOGY (Theory)

Time : 3 Hrs.]

[M.M : 70

General Instruction :

- (i) All questions are compulsory.
 - (ii) The questions paper consist of four section A, B, C and D. Section 'A' Contain 8 questions of 1 mark each. Section 'B' is of 10 questions of 2 marks each. Section 'C' has 9 questions of 3 marks each. Section 'D' is of 3 question of 5 marks each.
 - (iii) There is no overall choice. However, and intornal choice has been provided in one question of 2 marks. One question of 3 marks and all the three questions of 5 marks.
 - (vi) Wherever necessary, the diagram draw should be neat and properly cabelled.
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Section 'A'

1. What is the function of epiglottis in human ?
2. At which stage of cell division, the morphology of chromosomes can be distinctly studied ?
3. What is the function of gizzard ?
4. Name the phyllotaxy in Asltonia.
5. Name the algal and fungal components of Lichens respectively.
6. Which has more number of series, a genus or a family ?
7. Name the functional unit of a skeletal muscle.
8. Select the ammonotelic animals from the following :
Mammals, bony fishes, birds, reptiles, aquatic insects.

Section 'B'

9. "Cell is the basic unit of life." Justify this statement.
10. How does competitive inhibitor inhibits the activity of an enzyme ? Explain with an example.
11. Mammals are the most successful and dominant animals. Provide any four evidences in favour of this statement.

12. Describe the role of various enzymes in the digestion of protiens in our alimentary canal.
13. What will happen to a plant cell, if it is kept in (a) hypertonic solution (b) hypotonic solution.
14. What is (a) ultra filtration (b) tubular secretion in relation to urine formation.
15. Slides of T.S. of monocot stem and T.S. of dicot stem are provided to you. How would you differentiate them anatomically ?
16. Where does electron transport system occur in mitochondria ? State the role of oxygen in ETS.
17. Describe the role of red blood cells in the transport of carbon dioxide in blood.

OR

Where are calcium ions stored in a muscle fibre ? How do calcium ions affect the process of muscle contraction ?

18. In the given table, showing name of some harmones and their functions, some gaps are blank ; Full in the blanks 'a' to 'd'

Name of hormone	Function
(i) Glucagon	(a)
(ii) (b)	controls the metabolism of protein, fats and carbohydrates
(iii) Thymosin	(c)
(iv) (d)	Stimulates reabsorption of water and electrobytes by the distal tubules.

Section 'C'

19. What happens to Acetyl CoA that enters the Tricarboxylic Cycle ? Explain.
20. (a) How is the process of vernalisation advantageous to plants ?
(b) Name the plant growth regulators used for each of the following:
 - (i) quick ripening of fruit
 - (ii) delay in leaf senescence
 - (iii) induce rooting in a twig
 - (vi) increase length of a dwarf plant.
21. A transverse section of root nodule of Soyabean plant appears pink.
 - (a) What makes nodule pink ?
 - (b) What type of condition does this pigment create in the nodule ?
 - (c) Explain the process of root nodule formation in Soyabean.
22. Describe various steps of secondary growth in dicotyledonous stem. Why does not secondary growth occur in monocotyledonous plants ?
23. What are lipids? Explain the composition of triglyceride with its structural formula.
24. What is resting membrane potential ? Give the role of sodium- potassium pumps in maintaining it. How does resting potential change into action potential ?
25. Justify the following statements on the basis of external features only.
 - (a) Potato is a modified stem and sweet potato is a root.
 - (b) Leaf of Hibiscus is simple and leaf of rose is compound.
 - (c) Flower is a modified shoot

OR

Compare the life cycle of gymnosperms with the life cycle of pteridophytes.

26. Why is meiosis called reductional division ? differentiate anaphase of mitosis from anaphase I of meiosis. What is the significance of meiosis ?
27. (a) Draw a labelled diagram of alimentary canal of cockroach.
(b) State the functions of the following parts in cockroach.
Malpighian tubules, Gizzard.

Section 'D'

28. (a) Why is human heart called myogenic ?
(b) Draw a diagram of human heart and label the following parts -
Aorta, vena cava, atrioventricular node, interventricular septum.
(c) Explain the events occurring in one cardiac cycle.

OR

- (a) Where is Sino-atrial node (SAN) located ? Why is SAN called pacemaker of the heart ?
(b) What is electrocardiogram ? What represents P waves, QRS complex and T wave in a standard ECG.
(c) What are the causes of angina and coronary Artery Diseases ?
29. (a) Name three types of leucoplasts and mention the function of each.
(b) Give any two similarities between mitochondria and chloroplast.

OR

Who proposed the 'Fluid Mosaic Model' of plasma membrane. Describe the structure of plasma membrane with a labelled diagram.

30. (a) Which pathway of photosynthesis is more efficient - C_3 or C_4 ?
Give reasons.
(b) Describe briefly the three stages - carboxylation, reduction and regeneration of RUBP

OR

- (a) Explain noncyclic photophosphorylation in plants. Why is this process called noncyclic ?
(b) State the 'Law of Limiting Factors'. How would the rate of photosynthesis be affected if CO_2 becomes limited ?