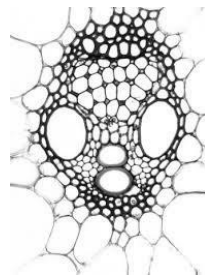


General Instructions:

- i) This Question paper contains 4 sections - A, B, C, D and E.
- ii) Section - A contains 5 questions of 1 mark each.
- iii) Section - B contains 5 questions of 2 marks each.
- iv) Section - C contains 12 questions of 3 marks each.
- v) Section - D contains 1 question of 4 marks.
- vi) Section - E contains 3 questions of 5 marks each.
- vii) All the questions are compulsory. However, an internal choice is provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks.

SECTION – A

- 1. How do archaebacterial cells tolerate the extremes of heat and pH? (1)
- 2. Name the main function of skeletal muscles. (1)
- 3. Identify the given structure and label it. (1)



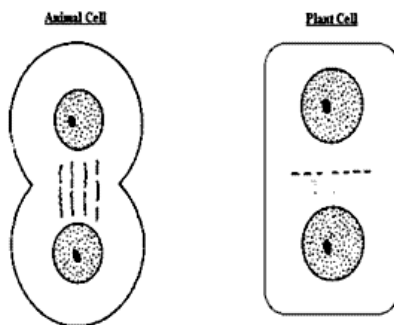
- 4. What is the process depicted in the diagram below. Define the process and label the diagram. (1)



- 5. What are the major components of a cell wall? (1)

SECTION – B

- 6. What is inflorescence? What is the basic difference between racemose and cymose inflorescence? (2)
- 7. What is phyllotaxy? Explain different types of phyllotaxy with the help of diagrams. Give one example each. (2)
- 8. "Cell is the basic unit of life." Justify this statement. (2)
- 9. How does competitive inhibitor inhibits the activity of an enzyme? (2)
- (OR)
- Explain the process of enzyme action. (2)
- 10. Trace the differences between the given processes. (2)



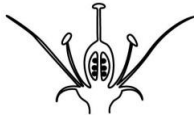
SECTION – C

- 11. Apply scientific words for each of the following statements: (3)
 - i) Water cavity found in sponge.
 - ii) Phylum whose animals have jointed appendages.
 - iii) Cold blooded animals.
 - iv) Egg laying animal.
 - v) Animals having false coelom.
 - vi) Repeated body segmentation.

12. Compare the life cycle of Gymnosperms with the life cycle of Pteridophytes.
(OR)
Describe briefly the structure of bacteriophage with the help of a diagram. (3)
13. Briefly describe the structure of monocotyledonous seed. (3)
14. Compare the three types of muscles on the basis of their structure, function, location and diagrams. (3)
15. Observe the diagrams and explain the position of floral parts with respect to ovary. Give one example of each. Give the correct scientific terms to explain each position. (3)



(A)



(B)



(C)

16. Justify the following statements on the basis of the external features only :- (3)
- Potato is a modified stem and sweet potato is a root.
 - Leaf of China rose is simple and leaf of Rose is compound.
 - A flower is a modified structure having whorls of appendages.
17. How will you distinguish between Monocot and Dicot roots and stems? (3)
18. What are the main events of a cell cycle? Draw and explain. (3)
19. Who proposed the fluid mosaic model of plasma membrane? Describe the model with the help of a labelled diagram. (3)
20.
 - Why is Meiosis called as reductional division? What is its significance?
 - Differentiate between the Anaphase of Mitosis and Anaphase I of Meiosis. (3)
21. Describe the controlling centre of the cell. (3)
22. Explain the following :- (3)
- Centriole
 - Cell Theory
 - Biocatalysts

SECTION – D

23. During an excursion to a botanical garden, the teacher shows an old tree which was on the verge of extinction. As soon as the teacher advanced with the students, some enthusiastic students climbed up the tree and started cutting the branches, collecting its leaves as precious collection. Rajesh instead took photographs of the tree from various angles. The boys mocked at Rajesh while the teacher appreciated him.
- What values did Rajesh possess?
 - Why should we conserve biodiversity?
 - How can be biodiversity be conserved? (1+2+1)

SECTION – E

24. What are the modifications observed in birds that help them in flying?
(OR)
What is binomial nomenclature? Write four rules of writing a scientific name. Who proposed this system and how is it continued till today?
Is it worth making so much efforts just to name the organisms? (5)
25.
 - Explain two modifications each of root and stem.
 - Draw and describe briefly the various regions of a root tip. (OR)
 - Draw and explain the structure of a leaf. Explain its various functions.
 - What is called as placentation? Explain any two types of placentation with sketches and examples. (5)
26. Draw a well labelled diagram of a plant cell.
(OR)
Explain the equational division in detail with the help of adequate diagrams. (5)