



**DELHI PUBLIC SCHOOL SURAT
BIOLOGY**

Roll No:

Class: XI

Marks: 70

Time Allowed: 3 Hrs.

Instructions:

- a) All questions are compulsory.
- b) The question paper consists of five sections A, B, C, D and E. Section A contains 5 questions of 1 marks each, Section B contains 5 questions of 2 marks each, Section C contains 12 questions of 3 marks each, Section D contains 1 question of 4 marks and Section E contains 3 questions of 5 marks each.
- c) Wherever necessary, the diagrams drawn should be neat and properly labeled.
- d) This question paper contains 2 pages.

SECTION A

1. State the components of chromatin. [1]
2. Write the two functions of large intestine. [1]
3. Which specific receptors of vestibular apparatus maintain the balance of the body and posture? [1]
4. Give the specific function of rods and cones. [1]
5. State two function of oxytocin. [1]

SECTION B

6. Biology students visited a botanical garden. The guide explained the importance of trees especially in pollution. [2]
 - (a) Name a symbiotic association, which is considered as a very good pollution indicator.
 - (b) Write the components of the same.
 - (c) How do they help each other?
7. Give the function of the following: [2]
 - (a) Radula
 - (b) Nephridia
 - (c) Malpighian tubules
 - (d) Comb plates
8. What is sexual dimorphism? Give one major feature of the same in cockroach. [2]
9. Rama has a kitchen garden in her house. While playing, her son uprooted a pulse plant and observed spherical outgrowths on the roots. When cut he found pink coloured tissue inside. [2]
 - (a) What are these spherical outgrowths?
 - (b) Why did the cut part of these outgrowths show pink colour?
 - (c) Name the enzyme responsible for fixing nitrogen in root.
 - (d) Name the microbe, which produces such outgrowths in non-leguminous plants.
10. (a) Expand RuBisCO and OAA. [2]
 - (b) What is meant by Z-scheme?

SECTION C

11. What is alteration of generation in plants? Which type of life cycle is present in gymnosperms and angiosperm? Draw a diagram to show the diplontic life cycle. [3]
12. Explain the following in brief: [3]
(a) Phyllotaxy (b) venation (c) Aestivation
13. Draw a neat-labeled diagram to show T.S. of monocot leaf. [3]
14. (a) Name the scientist who proposed Fluid Mosaic Model. [3]
(b) Which cells are preferred to study cell membrane?
(c) Draw a neat -labeled diagram of fluid Mosaic model of plasma membrane.
15. Give structural representation of the following: [3]
(a) A portion of glycogen
(b) Peptide bond in amino acid chain
(c) Portion of B DNA
16. Explain in brief the cell cycle. Give two significance of meiosis. [3]
17. Differentiate between the following: [3]
(a) Apoplast and symplast pathway
(b) Symport and antiport
(c) Xylem and phloem
18. Explain TCA cycle in brief. [3]
19. (a) Discuss vernalisation. [3]
(b) Physiological effect of Auxin.
20. (a) Define Tidal volume [3]
(b) State the components of diffusion membrane of alveoli
(c) Why the role of CO₂ is significant in regulation of respiratory rhythm.
21. Discuss in brief the counter current mechanism of urine formation. [3]
22. Draw a neat labeled diagram of the following: [3]
(a) Stages of muscle contraction
(b) Structure of contractile protein

SECTION D

23. Differentiate between the following: [4]
(a) Exarch and endarch
(b) Closed and open vascular bundle
(c) Stele and periderm
(d) Lenticles and stomata

SECTION E

24. Explain the various events of prophase I. Draw suitable diagrams for the same. [5]
25. Describe the photosynthesis pathway present in Maize. [5]
26. Give reasons: [5]
(a) Neutrophils are the most abundant cells.
(b) A person with AB blood group is universal acceptor and the person with O blood group is a universal donor.
(c) Lub and dub sounds are of clinical diagnostic significance.
(d) Human heart is myogenic.
(e) Spleen is termed as graveyard of RBCs.

END OF EXAMINATION