

The Questions number from 1 to 11 below carries 3 marks each:

Q1. Write note on neural tissue.

Q2. Write a note on the role of lysosomes in cellular metabolism.

Q3. Explain the role of calcium ions in muscle contraction.

Q4. "All vertebrates are chordates but all chordates are not vertebrates". Justify the statement.

Q5. Some symbiotic organisms are very good pollution indicators and composed of a chlorophyllous and a non- chlorophyllous member. Describe them.

Q6. Write a note on the different types of arrangement of vascular bundles. Differentiate between Polyp and Medusa with examples.

Q7. (a) Why is conditioned reflex considered to be lost with time?
(b) Give two advantages of reflex action in animals.

Q8. Describe the biochemical composition of plasma membrane with special emphasis on arrangement of lipid molecules.

Q9. Explain how inhibitors might be important for plant survival.

Q10. Define collenchyma. Describe its role in structure and other function in the plant body of herbaceous angiosperm.

Q11. Write a short note on action spectrum.

The Questions number from 12 to 20 below carries 5 marks each:

Q12. List the characters found in the members of phylum Platyhelminthes.

Q13. We find that Rhizobium forms nodules on the roots of leguminous plants. Also Frankia, another microbe forms nitrogen-fixing nodules on the roots of non-leguminous plant Alnus.

(a) Can we artificially induce the property of nitrogen-fixation in a plant, leguminous or non-leguminous?

(b) What kind of relationship is observed between mycorrhiza and pine trees?

(c) Is it necessary for a microbe to be in close association with a plant to provide mineral nutrition? Explain with the help of an example.

Q14. Write a brief note on the endomembrane system.

Q15. Describe various forms of lipid with a few examples.

Q16. Discuss five different types of leaf modifications.

Q17. Explain briefly secondary growth in dicot stem.

Q18. Write detailed notes on the types of muscle tissue.

Q19. What are protozoan protists? Describe the different types of movement seen in this group.

Q20. Allium sativum belongs to which class, family? Describe the floral characters and floral formula of this family.