

Cell The Unit Of Life

Very Short Answer Type Questions

1. What is the significance of vacuole in a plant cell?
2. What does 'S' refer in a 70S & an 80S ribosome?
3. Mention a single membrane bound organelle which is rich in hydrolytic enzymes.
4. What are gas vacuoles? State their functions?
5. What is the function of a polysome?
6. What is the feature of a metacentric chromosome?
7. What is referred to as satellite chromosome?

Short Answer Type Questions

1. Discuss briefly the role of nucleolus in the cells actively involved in protein synthesis.
2. Explain the association of carbohydrate to the plasma membrane and its significance.
3. Comment on the cartwheel structure of centriole.
4. Briefly describe the cell theory.
5. Differentiate between Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER).
6. Give the biochemical composition of plasma membrane. How are lipid molecules arranged in the membrane?
7. What are plasmids? Describe their role in bacteria?
8. What are histones? What are their functions?

Long Answer Type Questions

1. What structural and functional attributes must a cell have to be called a living cell?
2. Briefly give the contributions of the following scientists in formulating the cell theory
 - a. Robert Virchow
 - b. Schleiden and Schwann

3. Is extra genomic DNA present in prokaryotes and eukaryotes? If yes, indicate their location in both the types of organisms.
4. Structure and function are correlatable in living organisms. Can you justify this by taking plasma membrane as an example?
5. Eukaryotic cells have organelles which may
 - a. not be bound by a membrane
 - b. bound by a single membrane
 - c. bound by a double membrane

Group the various sub-cellular organelles into these three categories.

6. The genomic content of the nucleus is constant for a given species where as the extra chromosomal DNA is found to be variable among the members of a population. Explain.
7. Justify the statement, "Mitochondria are power houses of the cell"
8. Is there a species specific or region specific type of plastids? How does one distinguish one from the other?
9. Write the functions of the following
 - a. Centromere
 - b. Cell wall
 - c. Smooth ER
 - d. Golgi Apparatus e. Centrioles
10. Are the different types of plastids interchangeable? If yes, give examples where they are getting converted from one type to another.