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1. What is the basic functional and structural unit of organisms?
a) Nucleus
b) DNA
c) Cell
d) Gene
View Answer

Answer: c
Explanation: Cell is the basic structural and functional unit of life. It is a compartment filled with an aqueous solution along with several organelles which perform the essential function of life and is surrounded by the cell membrane.

2. Viruses are cellular organisms.
a) True
b) False
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Answer: b
Explanation: Viruses are only living organisms which do not follow the cell theory. These are noncellular organisms as they lack cell wall or cell-like structure.

3. Name the Scientists who first discovered the cell in the piece of cork?
a) Louis Pasteur
b) Anton van Leeuwenhoek
c) Robert Hooke
d) Rudolf Virchow
View Answer

Answer: c
Explanation: Robert Hooke was the first scientist who discovered the cells in the piece of cork and also given the term of the cell. He published his work in his famous book, Micrographia.

4. Which of the following is not the part of modern cell theory?
a) All living things are made up of one or more cells
b) The cell is a functional and structural unit of life
c) Energy flow takes place within the cell
d) All cells do not have the same chemical composition
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Answer: d
Explanation: According to modern cell theory all cells are basically the same in chemical composition. The modern theory also states that the hereditary information passed from cell to cell.

5. What is the permeability of the plasma membrane?
a) Selectively permeable

b) Impermeable
c) Single phase flow
d) Highly permeable
View Answer

Answer: a
Explanation: Plasma membrane is selectively permeable as it does not allow every solute to pass through it. Hydrophobic molecules and small molecules can easily traverse the plasma membrane while large molecules and ions cannot cross the membrane without the help of transporters.

6. Which of the following is described by the fluid mosaic model?
a) Nucleus
b) Plasma membrane
c) Endoplasmic reticulum
d) Ribosome
View Answer

Answer: b
Explanation: Jonathan Singer and Garth Nicolson in 1972, proposed a fluid mosaic model for the structure and composition of the plasma membrane. This model is now accepted worldwide for the plasma membrane study.

7. Mark the component which is not the part of lipid bilayer?
a) Glycerol or Sphingosine
b) Fatty acids
c) Tryptophan and methionine
d) Phosphate
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Answer: c
Explanation: Phospholipids are composed of two types of components one is hydrophobic and other is hydrophilic. The fatty acid component is only hydrophobic while rest of the molecules is hydrophilic i.e. glycerol, phosphate, and alcohol attached to phosphate.

8. What is the name of the hollow sphere formed by lipid bilayer?
a) Cholesterol
b) Lipid raft
c) Micelle
d) Liposome
View Answer

Answer: d
Explanation: Liposomes are closed, solvent filled and self-sealing vesicle which is bound only by a single bilayer and forms a hollow sphere.

9. Which of the following is ABC transport protein that transport lipid in opposite direction?
a) ATPase
b) Scramblase
c) Floppases

d) Flippase
View Answer

Answer: c
Explanation: Floppases is ATP dependent ABC transporter protein which transports lipids in an opposite direction while flippase is P-type ATPase which transports glycerophospholipid from outer layer to inner membrane.

10. Out of the following, which is not an ATP dependent transporter of lipid?
a) V-type ATPase
b) Scramblase
c) Flippase
d) Floppases
View Answer

Answer: b
Explanation: Scramblase does not require ATP but it is activated by calcium. It moves phospholipids along its concentration gradient, non-specifically in either direction and ensures the monolayer to be equally populated with phospholipids.