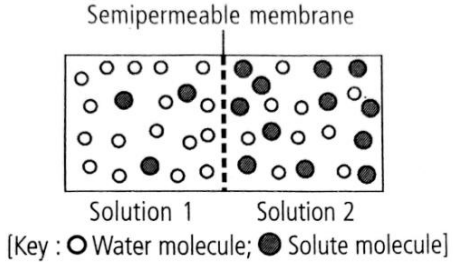
1. Select the correct pair that comprises of only unicellular organisms.
   (a) Amoeba and Rhizopus (b) Paramecium and Chlamydomonas
   (c) Bacteria and fungi (d) Plants and animals
2. Select the odd group from the following.
   (a) Chlamydomonas, Paramecium, bacteria (b) Fungi, Plants, Animals
   (c) Sperm, Neuron, Amoeba (d) Schleiden, Schwann, Virchow
3. Select the incorrect statement.
   (a) Osmosis is a slow process, occurs down the concentration gradient and does not expend energy.
   (b) Electron microscope uses very high voltage electricity. It uses electromagnets instead of glass lenses and beam of electrons instead of light.
   (c) A semipermeable membrane does not allow both solvent and solute molecules to pass through it.
   (d) Active transport of materials is rapid and usually occurs against the concentration gradient involving carrier proteins and energy in the form of ATP.
4. Which of the following statements best defines plasmolysis?
   (a) The shrinkage of contents of a living cell away from the cell wall due to exosmosis caused by a hypertonic solution.
   (b) The shrinkage of protoplast of a non-living cell from the cell wall due to exosmosis caused by a hypertonic solution.
   (c) The process of shrinkage of protoplast from the cell wall due to exosmosis caused by a hypotonic solution.
   (d) The process of swelling of the cytoplasm due to endosmosis caused by a hypertonic solution.
5. Chromosomes are composed of
   (a) DNA and protein (b) DNA and sugar (c) sugar and protein (d) chromatin.
6. Which of the following components of cell are absent in prokaryotes?
   (i) Nucleoid (ii) Plastids (iii) Vesicles (iv) Nuclear membrane
   (v) Chromosomes (vi) Mitochondria
   (a) (i), (ii) and (iii) (b) (ii), (iv) and (v) (c) (ii) (iv) and (vi) (d) (iii), (iv) and (v)
7. Which of the following options are associated with mitochondria?
   (i) These are the sites of cellular respiration.
   (ii) These are the sites of protein synthesis.
   (iii) These are also called powerhouses of the cell.
   (iv) These are double membranous organelles.
   (a) (i) and (ii) (b) (iii) and (iv) (c) (i), (iii) and (iv) (d) Only (ii)
8. Study the given figure carefully. In which direction the net movement of water will take place?



   (a) From solution 1 to solution 2 (b) From solution 2 to solution 1
   (c) Both (a) or (b) (d) No movement will take place

9. A cell is expected to be rich of which organelle when it is
(i) active in protein synthesis? (ii) active in lipid synthesis?
(a) Ribosome & Lysosome (b) RER & SER
(c) SER & RER (d) Lysosome & Ribosome

10. Plant cell does not burst in a hypotonic solution because
(a) its cell sap is more concentrated. (b) its cell wall resists bursting.
(c) its cell sap is rich in cellulose. (d) it does not have lysosomes.

11. P and Q are two cell organelles. They have the following features. Read them carefully.
(i) Both P and Q are double membranous organelles.
(ii) Both P and Q are regarded as semi-autonomous bodies.
(iii) Both P and Q are present in plant cells.
Organelles P and Q represents
(a) Mitochondrion, plastid (b) Ribosome, Golgi apparatus
(c) Plastid, endoplasmic reticulum (d) Ribosome, plastid.

12. Which of these is not related to endoplasmic reticulum?
(a) It behaves as transport channel for proteins between nucleus and cytoplasm.
(b) It transports materials between various regions in cytoplasm.
(c) It can be the site of energy generation.
(d) It can be the site for some biochemical activities of the cell.

13. Which of the following are covered by a single membrane?
(a) Mitochondria (b) Vacuole (c) Lysosome (d) Plastid

14. The cell organelle involved in forming complex sugars from simple sugars are
(a) endoplasmic reticulum (b) ribosomes
(c) plastids (d) Golgi apparatus.

15. Amoeba acquires its food through a process, termed
(a) exocytosis (b) endocytosis
(c) plasmolysis (d) exocytosis and endocytosis both.

16. Silver nitrate solution is used to study
(a) endoplasmic reticulum (b) Golgi apparatus
(c) nucleus (d) mitochondria.

17. Cell theory was given by
(a) Schleiden and Schwann (b) Virchow
(c) Hooke (d) Haeckel.

18. Organelle without a cell membrane is
(a) ribosome (b) Golgi apparatus (c) chloroplast (d) nucleus.

19. 1μm is
(a) 10^{-6} m (b) 10^{-9} m (c) 10^{-10} m (d) 10^{-3} m.

Assertion-Reason Codes:

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) If both Assertion and Reason are true and Reason is not the correct explanation of Assertion.

(c) If Assertion is true but Reason is false.

(d) If both Assertion and Reason are false.

20. Assertion: A cell swells up when present in a hypotonic solution.
Reason: More water molecules enter the cell than they leave.

21. Assertion: The cells that have membrane bound organelles are called eukaryotic.
Reason: The cells that lack membrane bound organelles are called prokaryotic.

22. Assertion: The endoplasmic reticulum which lacks ribosomes is called smooth endoplasmic reticulum (SER).
Reason: SER is mainly involved in protein synthesis.

23. Assertion: A cell membrane shows fluid behaviour.
Reason: A membrane is a mosaic of lipids and proteins.

24 Assertion: Mitochondria and chloroplasts are semiautonomous organelles.
Reason: They are formed by division of pre-existing organelles and contain DNA but lack protein synthesizing machinery.