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Solution SAQ - 1:
Prokaryotic Cell:
1. Cell size is generally small.
2. Only a single chromosome is present.
3. Nucleolus is absent.
4. Cell division takes place by fission or budding.
Eukaryotic Cell:
1. Cell is generally large.
2. More than one chromosome is present.
3. Nucleolus is present.
4. Cell division takes place by mitotic or meiotic.
Solution SAQ - 2:
Organs:
1. They are found in multicellular organisms.
2. They are large sized.
3. They may be external or internal to the body of organisms.
4. Organs coordinate to form organ systems, while organ systems form the body of an organism.
Organelles:
1. They are found in all eukaryotic cells.
2. They are very small sized.
3. They are mostly internal.
4. Organelles coordinate to produce the cell.
Solution SAQ - 4:
Light microscope:
1. It uses glass lenses.
2. It uses a beam of light to illuminate the object.
3. Internal vacuum is not required.
Electron microscope:
1. It uses electromagnets.
2. It uses a beam of electrons instead of light.
3. Internal vacuum is essential.
Solution SAQ - 5:
Robert Hooke examined a thin slice of cork under a self-designed crude microscope and observed that the cork resembled the structure of a honey comb. The latter consisted of many tiny compartments. Hooke called them cellulae (Singular cellula), now termed cells. Cellula is a Latin name which means a 'little room'. Such rooms were also present in monasteries.
Solution SAQ - 6:
There are two types of protein molecules: Intrinsic proteins, which completely covers the lipid bilayer and extrinsic proteins, which occur either on the outer surface or on the inner surface of the lipid membrane.
Solution SAQ - 7:
Its major function is to hold cellular contents and control passage of materials in and out of the cell.
Solution SAQ - 8:
In amoeba, oxygen (O2) enters the cell by the process of diffusion when the level or concentration of O2 inside the cell decreases.
Solution SAQ - 9:
Put dried raisins and apricots in pure water and leave them for some time. Then place them into a concentrated Solution of sugar or salt. Each one of them gains water and swells when placed in

pure water due to endosmosis. When such swollen raisins/apricots are placed in the concentrated Solution, each of them loses, water, and consequently shrinks again (due to exosmosis).
Solution SAQ - 10:
Diffusion:
1. Diffusion can occur in any medium.
2. The diffusing molecules may be solids, liquids or gases.
3. Semipermeable membrane is not required.
4. An equilibrium in the free energy of diffusion molecules is achieved in the system.
Osmosis:
1. It occurs only in liquid medium.
2. It involves movement of solvent molecules only.
3. Semipermeable membrane is required.
4. Equilibrium in the free energy of solvent molecules is never achieved.
Solution SAQ - 11:
Endocytosis is the ingestion of material by the cells through the plasma membrane. It is a collective term that describes three similar processes: phagocytosis (cell eating), potocytosis (cell drinking) and receptor-mediated endocytosis. These processes are pathways to specifically internalize solid particles, small molecules ion, and macromolecules, respectively. All of them require energy, so they may be regarded as different forms of active transport.
Solution SAQ - 12:
(i) When eukaryotic cells are placed in hypotonic Solution, the water molecules will enter into the cell and the cell will swell up.
(ii) If eukaryotic cells are placed in hypertonic Solution, the water molecules will come out of the cell and the cell with shrink.
(iii) If the eukaryotic cell is placed in isotonic Solution, the amount of water molecule will remain the same; it will neither move out nor will go inside. The cell will remain same sized.
Solution SAQ - 13:
(a) Ribosome.
(b) Plastid in plants and Mitochondria in animals.
(c) Rough endoplasmic reticulum.
(d) Genes.
Solution SAQ - 14:
(a)
Chloroplasts:
1. They are green plastids.
2. They contain chlorophylls and carotenoids.
3. Lamellae are present.
4. Chloroplasts are sites of photosynthesis.
Chromoplasts:
1. They are non-green coloured plastids.
2. Chlorophylls are absent. Only carotenoids are present.
3. Lamellae are absent.
4. They add colour to the organs for attracting animals to perform pollination and fruit dispersal.
(b)
Ribosome:
1. It is found in both animal cell and plant cell.
2. These are dense, spherical and granular particles which occur freely in the matrix or remain attached to the endoplasmic reticulum.
Centrosome:
1. Centrosome is found only in animal cells.
2. It consists of two granules like centrioles.
Solution SAQ - 15:
Animal Cell:
1. Animal cells are generally small in size.
2. Cell wall is absent.
3. Animal cells have a single highly complex and prominent Golgi apparatus.

4. Animals cells have centrosome and centrioles.
Plant Cell:
1. Plant cells are larger than animal cells.
2. The plasma membrane of plant cell is surrounded by a rigid cell wall made up of cellulose.
3. Plant cells have many simpler units of Golgi apparatus, called dictyosomes.
4. Plant cells lack centrosome and centrioles.
Solution SAQ - 16:
If nucleus is removed from a cell, the protoplasm will ultimately dry up and the cell will die because the nucleus controls all the metabolic activities of a cell.

********** END **********