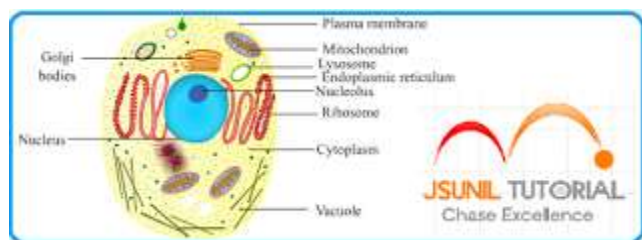


Cell the Fundamental unit of life

1. What is plasma membrane? What are their functions?

Ans:



Plasma membrane also called as cell membrane, is the outer covering of a cell that separates the cell contents (protoplasm) from the surrounding medium.

- It is made up of proteins and lipids.
- It gives form (shape and size) to the cell
- It maintains the individuality of the cell (i.e. separates cells)
- It keeps the cell contents in place

2. What are cell organelles ?

Ans: The certain specific living parts of a cell with a definite function are called Cell organelles. All cells are found to have same organelles and together these constitute to the basic unit of life.

3. What is cellulose and its functions?

Ans: Cellulose is the main component of a plant cell wall. It is responsible for giving structural shape to the cell and also to protect the protoplasm.

4. What is a Prokaryotic cell? Give an Example.

Ans: The cells that do not have a nuclear membrane and membrane bound cell organelles (i.e. well-defined nucleus) are known as Prokaryotic Cells. Example:- Blue green algae, Bacteria, *Mycoplasma* etc.

5. What are the advantages of multicellularity ?

Ans: The division of labour in a multicellular organism increases the efficiency of the organism. It increases the Chance of survival.

6. What are vacuoles? What are their functions?

Ans: Vacuoles are clear fluid/gas filled spaces in the cytoplasm.

- In plant cells, it is larger and less in number as compared to the animal cells.
- Vacuoles help in the storage of water, food and other waste substances.

7. What is ER ? Name two types of ER. Write its main functions.

Ans: Endoplasmic Reticulum or ER, is a network of tube like structures found in the cytoplasm.

- The two types of ER are Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER).
- It provides channel for quick transport of materials
- It provides materials (i.e. lipids and proteins) for membrane biogenesis.

8. Write the Function of Chromatin material.

Ans: The Chromatin material mainly consists of DNA's, therefore plays an important role in storing and transmitting hereditary information (DNA) from one generation to another.

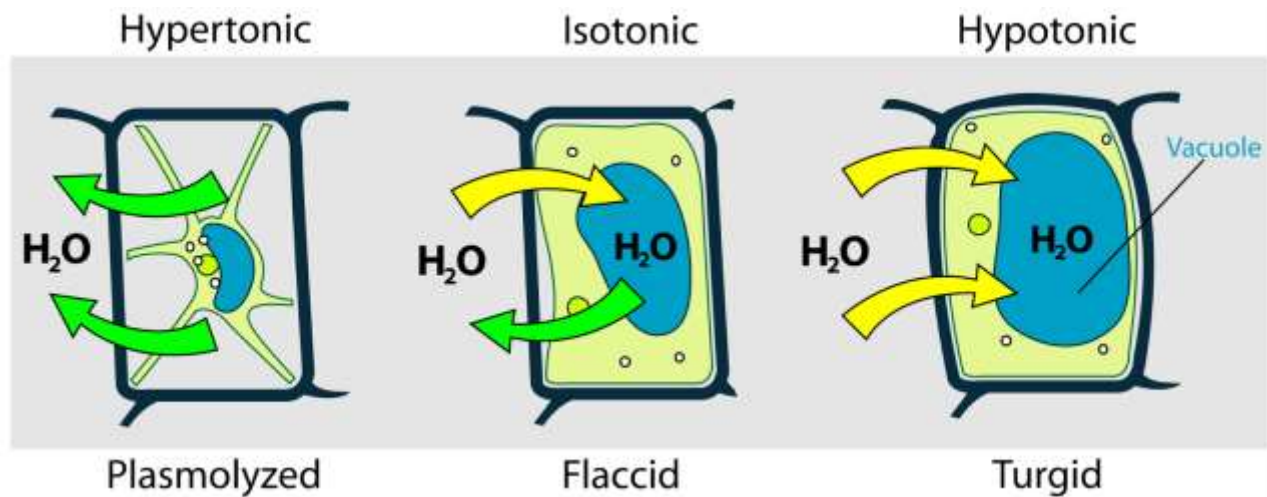
9. Name a cell that lacks membrane. Where is it prepared?

Ans: Ribosomes is a cell organelle which lacks membrane and is prepared in the Nucleolus.

10. What is plasmolysis? What happens to a plasmolysed cell when it is placed in water ?

Ans: The detachment of cell membrane of the plant cell from the cell wall when put in Hypertonic Solution is known as Plasmolysis.

The cell that has undergone plasmolysis i.e. plasmolysed cell when placed in water, the water moves into the cell from the solution due to the higher concentration of water in the solution (Endosmosis) and therefore the cell swells.



11. What do you mean by nucleoid?

Ans: The undefined nuclear region of prokaryotic cells like blue green algae are known as nucleoid. The nucleoid contains nucleic acid but does not have any membrane covering it.

12. What are the factors which restrict the size of the cell?

Ans: The factors which restrict the size of the cell are:

Functions of cell.

- Cell's requirement of oxygen and other materials from the environment.
- Regulating ability of the nucleus of the cell.

13. Name the two nucleic acids present in the cell and their functions.

Ans: Ribose Nucleic Acid (RNA) – It helps in protein synthesis.

Deoxyribo Nucleic Acid (DNA) – It stores hereditary information.

14. Give any two functions of plastids.

Ans: Chloroplast is the site of photosynthesis and helps in preparing food (in case of plant cells).

- Leucoplast are the site of storage of food.
- Chromoplast provide colour to various flowers and fruits.

15. Write down the main functions of cell wall.

Ans: Cell wall provides shape as well as rigidity to the cell.

- It protects the protoplasm.
- It is involved in the movement of materials in and out of the cell.
- It prevents the cell from bursting even in very dilute solution.

16. Describe in short the chief components of a nucleus.

Ans: **Nucleoplasm** – the semi-fluid part of protoplasm lying inside the nucleus, in which nucleoli and Chromatin fibers are found.

Nucleolus – a dense, spherical, darkly stained structure, which the site of formation and store house of RNA's.

Nuclear Membrane- The membrane that bounds the nucleus, which semi-permeable, double layered and porous.

17. What role does a nucleus play in cellular reproduction?

Ans: The nucleus plays the central role in the cell division/reproduction. Nucleus carry the hereditary information and it divides to form two new cell by the process of cellular reproduction. Apart from that, nucleus also plays a vital role in determining when the cell will divide.

18. Write functions of lysosomes?

Ans: They take part in intracellular digestion of foreign particles.

- They provide energy during starvation.
- They help in defence against bacterial and viral infections.
- They remove cellular debris.

19. Define Osmosis. In what ways it is different from diffusion?

Ans: **Diffusion**: It is defined as the movement of particles from a region of high concentration to a region of low concentration.

Osmosis: Osmosis is defined as the passage of water from a region of high water concentration to a region of low concentration through a Semi-permeable membrane.

20. Write one function each of – Ribosomes, Vacuole, Plasma Membrane

Ans: Ribosomes : It helps in Protein Synthesis

- Vacuole : They help in the storage of water, food and other waste substances.
- Plasma Membrane : It regulates the flow materials in and out of the cell.

Question Bank

Q. 1. Who discovered cells, and how ?

Ans. Cell was discovered by an English scientist, Robert Hooke. Hooke, in 1665, while observing a thin slice of cork, under his microscope, observed that the cork was composed of several box-like compartments, forming a honey-comb structure. He named the compartments as cells.

Q. 2. Why is the cell called the structural and functional unit of life ?

Ans. Each living cell has the capacity to perform certain basic functions that are characteristic of all living forms. Each cell has some specific components in it known as cell organelles. Each cell acquires its structure and ability to function because of the organization of its membrane and organelles in specific ways. The cell thus has a basic structural organisation. This helps the cell to perform functions like respiration, obtaining nutrition and clearing of waste materials or forming new proteins. Thus, the cell is the structural and functional unit of living organisms.

Q. 3 How do substances like CO₂, and water move in and out of the cell ? Discuss.

Or

Name the process by which CO₂, and H₂O move into and out of the cell.

Ans. (i) When CO₂ gets accumulated in high concentration inside the cell, it moves out of the cell by diffusion process and when concentration of carbon dioxide is

lower than the surrounding atmosphere, it moves inside the cells by diffusion process.

(ii) When the water concentration of the medium surrounding the cell is higher than that inside the cell, then cell gain water from the medium by osmosis. On the other hand, when the water concentration of the medium surrounding the cell is lower than that inside the cell, they lose water into the medium by osmosis.

Q. 4. Why the plasma membrane is called a selectively permeable membrane?

Ans. The plasma membrane is called a selectively permeable membrane because it allows entry and exit of some substances and not all the materials.

Q. 5. Fill in the gaps in the following table illustrating differences between prokaryotic and eukaryotic cells.

PROKARYOTIC	EUKARYOTIC
1. Size : generally small (1-10 micrometer)	1. Size : generally large (5-100 micrometer)
2. Nuclear region : poorly defined due to absence of nuclear membrane and known as nucleoid.	2. Nuclear region: well defined and surrounded by a nuclear membrane.
3 Chromosomes: single	3. More than one chromosome
4 Membrane bound cell organelles absent.	4. Membrane bound cellorganelles present.

Q. 6 Can you name the two organelles we have studied that contain their own genetic material.

Ans. The cell organelles like mitochondria and plastid have their own genetic materials.

Q. 7 If the organisation of a cell is destroyed due to some physical or chemical influence, what will happen?

Ans. Each living cell has the capacity to perform certain basic functions because of its organization. All the cellular organelles, together plays an important role in the

cellular organisation. If this organisation is destroyed the cell can't perform like before and it will die ultimately.

Q. 8 Why are lysosomes known as suicide bags?

Ans. During the disturbance in cellular metabolism, lysosomes are capable of digesting the entire cell by releasing their own enzymes. For this reason, lysosomes are called suicide bags.

Q. 9 Where are proteins synthesized inside the cell ?

Ans. Ribosomes are the sites of protein synthesis inside the cell.

Q. 10 Make a comparison and write down ways in which plant cells are different from animal cells.

Ans. Plant and animal cells differ in their sizes, presence or absence of structural components as well as shape and number of cellular organelles.

Major difference between plant and animal cells are:

PLANT CELLS	ANIMAL CELLS
1. Cells comparatively larger in size.	1. Cells usually smaller in size.
2. Cell wall is present.	2. Cell wall is absent,
3. Plastids are present.	3. Plastids are absent
4. Vacuoles—generally only one large vacuole present.	4. Vacuoles—generally absent. If present they are more in number and smaller in size
5. Dictyosomes (sub-units of Golgi body) present.	5. Prominent Golgi bodies are present.
6. Lysosomes are either absent or very few in number.	6. Lysosomes are more in number.
7. Centrosomes -absent.	7. Centrosome-present.

Q. 11 What would happen if plasma membrane rupture: or breaks down?

Ans. As the plasma membrane acts as a mechanical barrier to the protoplasm, so after the rupturing of plasma membrane, the proto-plasmic contents will be dispersed in the surrounding medium. Also foreign bodies will enter inside the cell.

Q. 12 What would happen to the life of a cell if there was no Golgi apparatus?

Ans. Golgi apparatus has the function of storage, modification and packaging of the products in vesicles. If there is no Golgi apparatus, packaging and dispatching of materials synthesized by the cell will be stopped.

Q.13 Which organelle is known as the "powerhouse of the cell? Why?

Ans. Mitochondria is called the power house of the cell because it is the site of synthesis of energy rich ATP molecules by cellular respiration.

Q.14 Where do the lipids and proteins constituting the cell membrane get synthesized?

Ans. Proteins are synthesized in the ribosomes attached on RER while lipids are synthesized in SER.

Q.15 How does an Amoeba obtain its food?

Ans. Amoeba feeds on microscopic organisms that float on water. It encircles the food producing pseudopodia (false feet). The tips of encircling pseudopodia touch each other and the membrane at the contact dissolves and food is uncaptured in a sac like structure called vacuole.

Q.16. What is osmosis ?

Ans. The process of movement of water through a semi-permeable membrane from its higher concentration to lower concentration is called osmosis.

Q.17 Why are lysosomes known as 'suicide-bags' of a cell?

Ans. Lysosomes are known as 'suicide-bags' because when cell gets damaged during the disturbance in cellular metabolism, lysosomes may burst and the digestive enzymes thus released digest their own cell.

Q.18 Do you agree that a cell is a building unit of organism. If yes, explain why?

Ans. Yes, cell is a building unit of every living organism as every living being is made up of one or more cells. In unicellular organisms, the single cell performs all the functions of life. In multicellular organisms all the cells have a similar basic structure and perform similar basic life activities,

However, they become specialised to form components of different structures that perform different functions. Cells are first organised into tissues each with a specific function. e.g., contraction by muscular tissue. Tissues are organised to form organs with each organ performing a specific function e.g., heart, stomach, kidney. Organs are grouped into organ systems, each with a major function, e.g., circulatory system, excretory system, respiratory system. A living being has a number of organ systems. However, in all such organisational complexity, cell remains the basic building unit of the organism.

Q.19 Why does the skin of your fingers shrink when you wash clothes for a long time?

Ans. Clothes are washed with soap or detergent solution. This solution is hypertonic as compared to the osmotic concentration of our skin cells. The washing solution, therefore, causes exosmosis in the skin cells that come in contact with it for some time. Because of it, the skin over the fingers shrinks while washing clothes for a long time.



Q.20 Why is endocytosis found in animals only?

Ans. Endocytosis is the engulfment of food and other substances from the external medium. It occurs only in animal cells. In plant cells, a cell wall is present over the plasma membrane. Therefore, their plasma membrane cannot perform endocytosis.

Q.21 A person takes a concentrated solution of salt, after some time, he starts vomiting. What is the phenomenon responsible for such a situation? Explain.

Ans. A concentrated salt solution causes irritation and excessive dehydration in the wall of the alimentary canal due to exosmosis. There is uncomfortable stretching which causes reverse movements and hence vomiting.

Q.22 Name any cell organelle which is non- membrane.

Ans. Ribosome.

Q.23 If you are provided with some - vegetables to cook. You generally add salt into the vegetables during (making process). After adding salt, vegetables release water. What mechanism is responsible for this?

Ans. On adding salt, vegetables release water due to osmosis. Exosmosis occurs whenever the external medium is hypertonic as compared to the osmotic concentration inside living cells.

Q.24 Why are lysosomes also known as ‘scavengers of the cells’?

Ans. Lysosomes are called scavengers of the cell because they remove cell debris consisting of dead and worn out cell organelles by digesting the same. Rather they nourish the cells by sending out digested nutrients into the cytoplasm.

Q.25 Which cell organelle controls most of the activities of the cell ?

Ans. Nucleus, by controlling metabolism and cell activities. Genes expressed their effect through RNAs. RNAs control synthesis of proteins and enzymes.

Q.26 Why do plant cells possess large size vacuoles ?

Ans. Vacuole of plant cells has to be large because it takes parts in

(a) Storage : It stores salts, sugar, amino acids, organic acids and some proteins.

(b) Cellular wastes : They are dumped in the vacuole.

(c) Lysosomal Enzymes : They occur in the vacuole of plant cells.

(d) Turgidity : The vacuole contains cell sap which provides turgidity to the cells.

(e) Absorption of water : Plant cell vacuole contains an osmotic concentration required for absorption of water.

Q.27 How are chromatin, chromatid and chromosomes related to each other ?

Ans. Chromatin is interwoven mass of fine thread like structures made of DNA and protein. During cell division chromatin condenses to form thicker rod like structures called chromosomes. Each chromosome consists of two similar halves called chromatids. Formation of chromosomes having two similar halves or chromatids is meant for equitable distribution of chromatin which is hereditary material.

Q.28 How is nucleus different from nucleoid ?

Ans. Nucleus is different from nucleoid in the following ways ;

- (i) Nucleus is a membrane bound organelle whereas membrane covering is absent in a nucleoid.
- (ii) Nucleolus is present in nucleus but absent in nucleoid.
- (iii) The size of nucleus is comparatively larger than nucleoid.
- (iv) The DNA content of nucleus is equal to two to several DNA molecules compared to a single DNA molecule in nucleoid.

Q.29 Differentiate between rough and smooth endoplasmic reticulum. How is endoplasmic reticulum important for membrane biogenesis?

Ans. The ribosomes. which are present in an active cells, are the sites of protein synthesis. Endoplasmic reticulum helps in transporting these proteins to various places. The smooth endoplasmic reticulum help in manufacture of fat and lipids which along with proteins help in building the cell membrane.

Smooth Endoplasmic Reticulum (SER)	Rough Endoplasmic Reticulum (RER)
SER has no ribosomes particles on the surface. SER helps in the manufacture of lipids and fat molecules.	RER has ribosomes on the surface hence look smooth. Ribosomes are the sites of protein synthesis.

Importance of ER for membrane biogenesis:

(i) Endoplasmic reticulum takes part in membrane biosynthesis—RER synthesizes proteins which are passed to Golgi apparatus.

(ii) The smooth endoplasmic reticulum (SER) helps in the manufacture of fat and lipids which along with proteins help in building the Cell membrane.

(iii) Thus, endoplasmic reticulum helps in transporting these proteins to various places.

VSAQ

Q. 1. What is the function of leucoplasts?

Ans. The function of leucoplasts is to store starch grains, oil drops and protein granules.

Q. 2. Mention one function each of Golgi apparatus and smooth endoplasmic reticulum (SER).

Ans. Function of Golgi apparatus: Cell secretion and condensation.

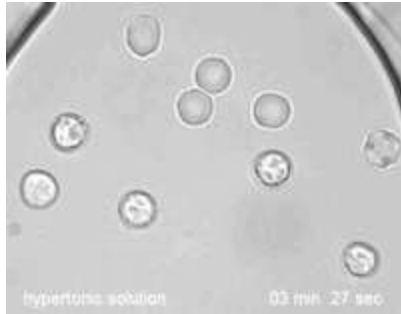
Function of smooth endoplasmic reticulum : Detoxification of many poisons and drugs.

Q. 3. Why are lysosomes known as suicidal bags?

Ans. Lysosomes are capable of digesting or lysing the entire cell, once the enzymes are liberated, so these are called suicidal bags.

Q. 4. What will happen, if you put an animal or plant cell into a dilute solution of salt or salt prepared in water ?

Ans. The cell will swell by gaining water from sugar or salt solution by osmosis.(animal cell may rupture also because of absence of cell wall. see animation)



Q. 5. Which chemical molecule carries heredity from parents to offspring ?

Ans. DNA.

Q. 6. Give two examples where the cells constantly keep their shapes changing.

Ans. (i) White blood corpuscles (Leukocytes).

(ii) Amoeba (Protozoa).

Q. 7. What is a eukaryotic cell ?

Ans. The cell containing membrane-bound cell organelles is known as a eukaryotic cell.

Q. 8. What are the most important structures within a nucleus ?

Ans. Chromosomes.

Q. 9. Where does protein synthesis occur in a cell ?

Ans. In ribosomes of cell.

Q. 10. Name the plastid which stores starch, oils and protein granules.

Ans. Leucoplasts.

Q- 11. Name the organelle of a cell referred as Power House of cell.

Ans. Mitochondria.

Q. 12. Who discovered cells in living organism ? Give an example of unicellular organism.

Ans. Robert Hook discovered cells in living organism.

Example of unicellular organism : Amoeba

Q. 13. State the full form of ATP.

Ans. Adenosine Tri-phosphate

Q. 14. Name the process in which diffusion takes place through a selective permeable membrane.

Ans. Osmosis.

Q. 15. What is a nucleoid?

Ans. Naked chromosomes of prokaryotes.

Q. 16. There are 40 chromosomes in a cell. How many chromosomes will be in the daughter cell after meiosis ?

Ans. 20 Chromosomes.

Q. 17. What is a eukaryotic cell?

Ans. "A cell having membrane bound organelles" is called eukaryotic cell.

Q. 18. What are the three major functional regions of cell.

Ans. The three major functional regions of cell are : (1) Plasma Membrane. (ii) Cytoplasm and (iii) Nucleus.

Q. 19. Write the names of cell organelles.

Ans. The cell organelles are: Endoplasmic Reticulum, Golgi body, Mitochondria, Ribosomes, Chloroplasts and Lysosomes etc.

Q. 20. What is a prokaryotic cell?

Ans. A prokaryotic cell is primitive in organization. It has a nucleoid (nuclear membrane is absent).

Q. 21. What is the functional unit of life? Define it.

Ans. Cell is called “the functional unit of life.” A cell is defined as, “the structural and functional unit of the life.”

SAQ

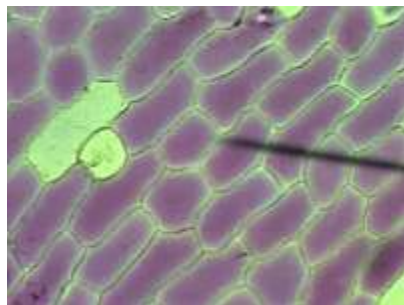
Q. 1. Name a cell organelle found only in a plant cell and name its type.

Ans. Plastids are present only in plant cells. There are two types of plastids :

(i) Chromoplasts (coloured plastids)

(ii) Leucoplasts (white or colourless plastids)

Q.2. What is plasmolysis? Under what conditions does it take place?



Ans. When a living plant cell loses water through osmosis there is shrinkage or contraction of the contents of the cell away from the cell wall. This phenomenon is known as plasmolysis. Plasmolysis takes place in living cells and not in dead cells.

Q. 3. Name a cell organelle found only in a plant cell and name its types?

Ans. Plastids are the cytoplasmic organelles found only in plant cells. On the basis of pigments present, plastids are of two types

(i) Leucoplasts (colourless plastids)

(ii) Chromoplasts (coloured plastids other than green)

(ii.a) Chloroplasts (green colour plastids)

Leucoplasts are for storage of starch grain and oil drops. Chloroplasts are mainly for photosynthesis. Chromoplasts are responsible for the characteristic colour of flower and fruit.

Q. 4. (a) What is the difference in the vacuoles found in plant cell and animal cell.

(b) Write the function of Golgi apparatus.

Ans. (a) Plant cells have large vacuoles that are full of cell sap. These vacuole provide rigidity and turgidity to the cell. Many important substances such as sugars, protein, amino acids, etc. are stored in the vacuoles.

Animal cells have small-sized vacuoles, in some unicellular organism. These vacuoles store food and also act as excretory organ by expelling water from the cell.

(b) Functions of Golgi apparatus

(i) The material synthesized near the ER is packaged and dispatched to various targets inside and outside the cell by Golgi apparatus.

(ii) Golgi complex is also involved in the formation of lysosomes.

Q. 5. Which organelle of a cell is known as power house of the cell. Why?

Ans. Mitochondria contains enzymes for catalyzing biochemical reactions involved in respiration. Energy is produced in the process, thus it is generally called power house of the cell.

Q. 6. (a) Which cell organelle detoxify poisons and drugs in liver or vertebrates?

(b) What is nucleoid ?

Ans. (a) Smooth Endoplasmic Reticulum (SER).

(b) Nucleoid is a primitive nucleus of prokaryotes, not covered by nuclear membrane.

Q. 7 0.9% of NaCl solution is considered isotonic for RBC. If RBCs are placed in 2% NaCl solution, what will happen to the cells ? What is such a solution called ?

Ans. 0.9% of NaCl solution is isotonic for RBC than if RBCS are placed in 2% NaCl solution they will shrink due to exosmosis. Such a solution is called hypertonic solution.

1. The power house of cell is called
 - a) Cell wall
 - b) Mitochondria
 - c) Ribosomes
 - d) Nucleus
2. The kitchen of the cell is called
 - a) Cell wall
 - b) Nucleus
 - c) Vacuoles
 - d) Plastids
3. The functional unit of life is called
 - a) Cell
 - b) Egg
 - c) Nucleus
 - d) None of these
4. Chloroplast is found in
 - a) Plant cell only
 - b) Animal cell only
 - c) Both of these
 - d) None of these
5. The control unit of cell is
 - a) Nucleus
 - b) Cell wall
 - c) Cytoplasm
 - d) All of these
6. Single celled organisms are called
 - a) Unicellular
 - b) Multi-cellular
 - c) Both of these
 - d) None of these
7. Tissue is a
 - a) Group of organs
 - b) Group of cells
 - c) Group of tissues
 - d) Group of organisms
8. Cell is discovered by
 - a) Robert Brown
 - b) Robert Hooke
 - c) John Mendal
 - d) Charse Darwin

9. The cells capable of changing shapes are

- a) Amoeba cell
- b) WBC
- c) Both of these
- d) None of these

10. Hen's egg is a

- a) Tissue
- b) Organ
- c) Organ system
- d) cell

ANSWERS

- 1. b
- 2. d
- 3. a
- 4. a
- 5. a
- 6. a
- 7. b
- 8. b
- 9. c
- 10. d

1. Which of the following organelles is smallest in size?

- a. Ribosome
- b. Mitochondrial
- c. Chloroplast
- d. Lysosome

2. Which of the following organelles have double membrane?

- a. Chloroplast
- b. Ribosome
- c. Lysosome
- d. Vacuole

3. Which of the following organelle is not present in an animal cell?

- a. Ribosome
- b. Plastid
- c. Mitochondrial
- d. Nucleus

4. Plastid that is colourless is

- a. Chromoplast
- b. Leucoplast

- c. Chloroplast
 - d. Lysosome
5. Plant cell wall is mainly composed of
- a. Cellulose
 - b. Lipid
 - c. Protein
 - d. Sugar
6. The infoldings of the inner membrane of mitochondria are known as
- a. Stroma
 - b. Grana
 - c. Cristae
 - d. Oxyosome
7. The site of aerobic respiration, in an animal cell, is
- a. Ribosome
 - b. Mitochondrial
 - c. Chloroplast
 - d. Nucleus
8. Ribosomes are the site of
- a. Protein synthesis
 - b. Lipid synthesis
 - c. Respiration
 - d. Photosynthesis
9. Which of the following statements is correct?
- a. Prokaryotic cells are surrounded by a cell membrane
 - b. Prokaryotic cells have a nucleus
 - c. Eukaryotic cells have genetic information
 - d. Eukaryotic cells have membrane-bound organelles
10. The membrane that surrounds the vacuole is
- a. Tonoplast
 - b. Plasma membrane
 - c. Cell wall
 - d. Nuclear membrane
11. The organelle involved in cell secretion is
- a. Plastids
 - b. ER
 - c. Golgi bodies
 - d. Nucleolus
12. Plasmolysis occurs due to

- a. Diffusion
- b. Endosmosis
- c. Exosmosis
- d. Absorption

13. The solution that has higher water concentration than the cell is known as

- a. Hypertonic
- b. Hypotonic
- c. Isotonic
- d. None of these

14. Cell nucleus was discovered by

- a. Robert Hooke
- b. Robert Brown
- c. Virchow
- d. Leuwenhoek

15. Which process requires the energy provided by ATP?

- a. Osmosis
- b. Diffusion
- c. Active transport
- d. Plasmolysis

16. Cellular respiration is related to _____ as _____ is related to chloroplasts.

- a. Mitochondria, Light
- b. Mitochondria, Photosynthesis
- c. Chloroplast, Light
- d. Chloroplast, Photosynthesis

17. Lipid molecules in the cell are synthesised by

- a. SER
- b. RER
- c. Golgi bodies
- d. Ribosomes

18. A cell that contains a large central vacuole is

- a. Plant cell
- b. Animal cell
- c. Bacterial cell
- d. Yeast cell

19. Old organelles, viruses and bacteria that a cell can ingest are broken down in

- a. Ribosomes
- b. Lysosomes
- c. SER
- d. RER

20. A slide of human cheek cell is stained with methylene blue and mounted in glycerine. Which of the following cellular organelle would you be able to see under a microscope?

- a. Plasma membrane
- b. Cell wall
- c. Mitochondrial
- d. Lysosome

21. A cell "X" contains a cell wall, large central vacuole and a nucleus at the periphery. The cell "X" is _____.

- a. Plant cell
- b. Animal cell
- c. Bacterial cell
- d. Prokaryotic cell

22. In human cheek cells, the nucleus is located at the _____.

- a. Center of the cell
- b. The left side of the cell
- c. The right side of the cell
- d. None of these.

23. Which term is used to refer the process of absorption of water by raisins from kheer?

- a. Exosmosis
- b. Endosmosis
- c. Diffusion
- d. Imbibition

24. Raisins soaked in high concentrated solution of sugar ____ i _____. The process involved is known as ____ ii _____.

- a. i- shrinks, ii- endosmosis
- b. i- swells, ii- Exosmosis
- c. i- shrinks, ii- exosmosis
- d. i- swells, ii- endosmosis

25. When raisins are kept in water, the water moves ____ i ____ the raisins. This makes the raisins to ____ ii _____.

- a. i- inside, ii- swell
- b. i- inside, ii- shrink
- c. i- outside, ii- swell
- d. i-outside, ii- shrink

26. What will happen, a when a human RBC is a placed in a hypotonic environment?

- a. It undergoes plasmolysis
- b. It undergoes turgidity

c. It is at equilibrium

d. None of these

Ans.

1-a, 2- a, 3- b, 4- b, 5- a, 6- c, 7- b, 8- a, 9- d, 10- a, 11- c, 12- c, 13- a, 14- b, 15- c,
16- b, 17- a, 18- a, 19- b, 20- a, 21- a, 22- a, 23- d, 24- c, 25- a, 26-b