Chapter 17. Cell - Structure And Functions

Very Short Q&A:

Q1: _____ is the basic structural unit of an organ.

Ans: Cell is the basic structural unit of an organ.

Q2: Name the person who discovered cell.

Ans: Robert Hooke the person who discovered cell.

Q3: Define cell.

Ans: Cell is the smallest living part of an organism. It is the building block of life.

Q4: All the multicellular organisms start their life as a single cell.(True/False)

Ans: All the multicellular organisms start their life as a single cell.(True)

Q5: Plasma membrane is also known as Cell membrane. (True/False)

Ans: Plasma membrane is also known as Cell membrane. (True)

Q6: Name an instrument used for observation and study of living cells.

Ans: Microscope

Q7: Name a cell that can be seen by unaided eye.

Ans: Hen egg is a single cell that can be seen by unaided eye.

Q8: Give example of some multicellular organisms.

Ans: Multicellular organisms: Human being, Mouse, Cat, and Dog.

Q9: Give examples of unicellular organisms.

Ans: Unicellular organisms: Amoeba and Paramecium

Q10: Define pseudopodia.

Ans: Pseudopodia: Projection of various lengths protruding outside the body of Amoeba is called Pseudopodia.

Q11: Give an example of single cell in human blood which can change its shape.

Ans: White blood cell.

Q12: Give an example of organism which can change its shape.

Ans: Amoeba

Q13: Which of the component of cell is important for movement of substance both inward and outward of cell?

Ans: Cell membrane.

Q14: Name the membrane which allows the movement between outside and inside of nucleus.

Ans: Nuclear membrane.

Q15: Where is the Nucleolus situated?

Ans: Nucleolus is situated inside the nucleus.

Q16: How many cells does the hen egg have?

Ans: Single cell.

Q17: Which component is responsible for providing structure to cell?

Ans: Cell membrane.

Q18: What is the colour of Chlorophyll?

Ans: Green

Q19: How many vacuoles do plant cell have?

Ans: Single vacuole.

Q20: Which component of cell which is not present in animals and provides protection to plant cells?

Ans: Cell wall.

Q21: Give the name of cell component on which the genes are situated.

Ans: Chromosomes.

Q22: Do the single-celled organism perform all the basic function that multicellular organism performs?

Ans: Yes, the single-celled organism performs all the basic function that multicellular organism performs?

Q23: What is cellular structure of Nerve cell?

Ans: Long branched.

Q24: Does the size of cell depend upon the size of animal having those cells?

Ans: No, the sizes of cell do not depend upon the size of animal having those cells.

Q25: Which component of cell helps in transfer of character from parents to offspring?

Ans: Gene

Q26: Name the stage of cell when chromosomes can be seen.

Ans: Cell division.

Q27: Define Vacuoles.

Ans: Vacuoles are blank-looking structure in the cytoplasm.

Q28: Give the name of largest cell.

Ans: Ostrich egg.

Q29: Name the cell which is found to be smallest.

Ans: Bacterial cell.

Q30: What is the position of nucleus in the cell?

Ans: Nucleus is situated at centre of the cell.

Q31: Which part of cell plays central role in its activity?

Ans: Nucleus

Q32: Arrange following in ascending order of size: Tissue, Cell, Organ

Ans: Ascending order of size: Cell, Tissue, Organ

Short Q&A:

Q1: If there is any difference between the vacuoles sizes in plant and animal. Explain.

Ans: The vacuoles size varies in plant and animal. Plant cell have single large sized vacuole, whereas, animal cell have numerous small sized vacuoles.

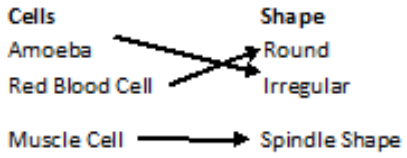
Q2: Differentiate between unicellular and multicellular organisms.

Ans: Organisms made up of single cell are called unicellular organism. Organisms made up more than one cell are called multicellular organism.

Q3: Match the following:

Cells	Shape
1. Amoeba 2. Red Blood Cell 3. Muscle Cell	1. Round 2. Irregular 3. Spindle Shape

Ans: Match the following:



Q4: Explain how Pseudopodia are helpful for Amoeba.

Ans: Pseudopodia help Amoeba in movement and in capturing the food.

Q5: Name the part of cell which provides its shape.

Ans: Cell membrane provides cell its shape.Cell membrane is important for movement of substance both inward and outward of cell.

Q6: Which component provides rigidity to plant cell?

Ans: Cell wall provides rigidity to plant cell.

Q7: Define Tissue.

Ans: Tissue is a group of similar cell performing a specific function.

Q8: Differentiate between Prokaryotes and Eukaryotes.

Ans: Prokaryotes do not have well organised nucleus and Eukaryotes have well organised nucleus with nuclear membrane.

Q9: Relate Tissue to cell and organ.

Ans: Tissue is composed of cell and Organ is made up of tissue.

Q10: Give example of some unicellular and multicellular organisms

Ans: Unicellular organisms: Amoeba and Paramecium.

Multicellular organism: Human and Mouse.

Q11: Define the function of Plasma membrane.

Ans: Functions of Plasma membrane:

a. Shape to the cells of plants and animals.
b. Separates cells from one another and also the cell from the surrounding medium.
c. Allows the movement of substances or materials both inward and outward.

Q12: Define the functions of Cell wall.

Ans: Functions of Cell wall:

a. Gives rigidity to plant cell.
b. Protection against variations in temperature, high wind speed, atmospheric moisture, etc.

Q13: Define the function of Nuclear membrane.

Ans: Function of Nuclear membrane:

a. Separates nucleus from cytoplasm.
b. Allows the movement of materials between the cytoplasm and the inside of the nucleus

Q14: Define Protoplast and name its components.

Ans: The entire content of a living cell is known as protoplasm.It includes the cytoplasm and the nucleus.

Q15: Define Plastids.

Ans: Plastids are coloured bodies found in the cytoplasm of plant. They are of different colour.

Q16: What is Chloroplast?

Ans: Chloroplast is green coloured plastid. It provides green colour to leaf.

Q17: Define the functions of Chloroplast.

Ans: Chloroplast is essential for photosynthesis and it provide green colour to leaf of plant.

Q18: What is Chromosome?

Ans: Chromosomes are thread like structure within nucleus.

Q19: Define the function of Nerve Cell.

Ans: Nerve Cell nerve cell receives and transfers messages, thereby helping to control and coordinate the working of different parts of the body.

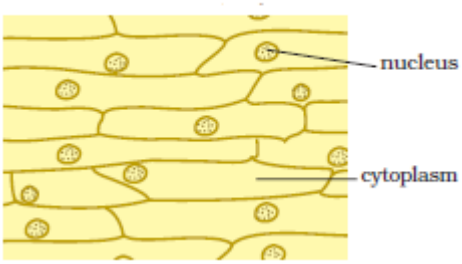
Q20: Give two examples of both Prokaryotes and Eukaryotes.

Ans: Prokaryotes: Bacteria and Blue-green algae

Eukaryotes: Human and Plant

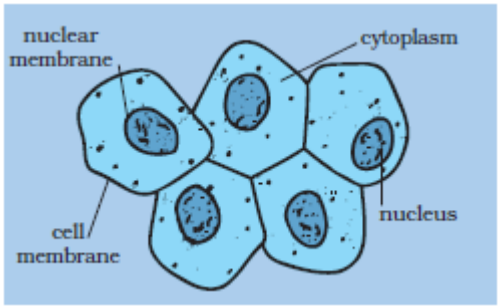
Q21: Draw a diagram of Onion peel, as observed under microscope, and label its basic components.

Ans: Cells in Onion peel.



Q22: Draw a labelled diagram of Human cheek cell.

Ans: Human cheek cell.

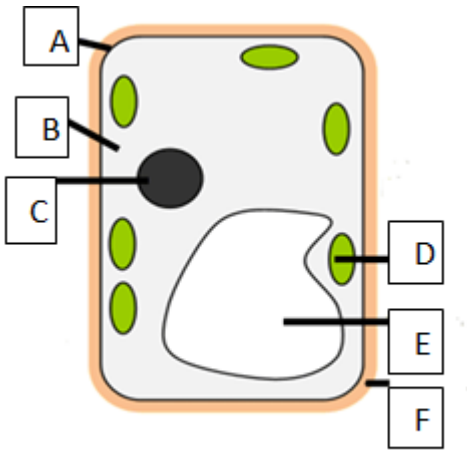


Q23: Define Gene and its function.

Ans: Gene is a unit of inheritance in living organisms.

Function: Controls the transfer of character from parents to offspring. p>

Q24: Label the diagram of Plant cell.



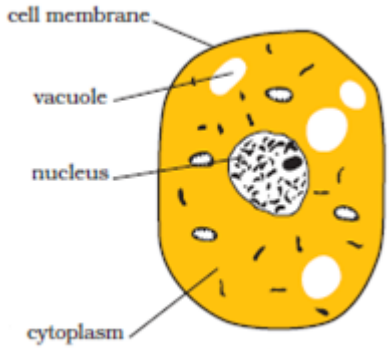
Ans:

A. Cell membrane

B. Cytoplasm.
C. Nucleus.
D. Chloroplast
E. Vacuole
F. Cell wall.

Q25: Draw a labelled diagram of Animal cell.

Ans: Animal cell:



Long Q&A:

Q1: What is Cell? Define its components.

Ans: Cell is the structural unit of living organisms.

Components:

a. Cytoplasm is a jelly-like substance present between the cell membrane and nucleus.
b. Nucleus is spherical shaped component located in the centre of the cell. It acts as control centre of activities of cell.
c. Plasma membrane is a porous membrane surrounding the cytoplasm.

Q2: Define "Why plants need cell wall?"

Ans: Cell wall provides rigidity to plant cell. This provides plant cell protection against the variation of environmental condition like variation in temperature, humidity etc.

Q3: Compare plant and animal cell on basis of cellular components.

Ans: Comparison between plant and animal cell:

Part	Plant Cell	Animal Cell
1. Cell membrane	1. Present	1. Present
2. Cell wall	2. Present	2. Absent
3. Nucleus	3. Present	3. Present
4. Nuclear membrane	4. Present	4. Present
5. Cytoplasm	5. Present	5. Present
6. Plastids	6. Present	6. Absent

7. Vacuole	7. Present, large single	7. Present, small numerous

Q4: "Single cell organisms perform all the function that multicellular organisms perform." Define what functions are these. Also define who perform all these function in multicellular.

Ans: Single- celled organism performs all function that multicellular organisms perform. These functions are capturing and digestion of food, respiration, excretion, growth and reproduction.

In single-celled organism these function are performed by overall cell. However, in muticellular organism each function is performed by specific organ.