Chapter 5: The Fundamental Unit of Life Quiz

The Fundamental Unit of Life

1. Who first discovered cells?

○ Robert Hooke
○ Robert Brown
○ Leeuwenhoek
○ Schleiden

Answer: Robert Hooke

2. What is the Latin word for 'a little room'?

○ Cell
○ Nucleus
○ Organelle
○ Cytoplasm

Answer: Cell

3. Who proposed that all cells arise from pre-existing cells?

○ Virchow
○ Schwann
○ Schleiden
○ Hooke

Answer: Virchow

4. When was the electron microscope discovered?

○ 1940
○ 1665
○ 1831
○ 1855

Answer: 1940

5. Who discovered the nucleus in the cell?

○ Robert Brown
○ Robert Hooke
○ Purkinje
○ Leeuwenhoek

Answer: Robert Brown

What are Living Organisms Made Up of?

1. Organisms made of a single cell are called?

○ Unicellular
○ Multicellular
○ Prokaryotic
○ Eukaryotic

Answer: Unicellular

2. Which of the following is a unicellular organism?

○ Amoeba
○ Fungi
○ Plants
○ Animals

Answer: Amoeba

3. What is the specific function of nerve cells related to?

○ Shape
○ Size
○ Color
○ Smell

Answer: Shape

4. What are the specific components within a cell known as?

○ Cell organelles
○ Organs
○ Tissues
○ Molecules

Answer: Cell organelles

5. Where is division of labour seen?

○ Both in multicellular organisms and within a single cell
○ Only in multicellular organisms
○ Only within a single cell
○ None of the above

Answer: Both in multicellular organisms and within a single cell

What is a Cell Made Up of?

1. What are the three features in almost every cell?

○ Plasma membrane, nucleus and cytoplasm
○ Cell wall, nucleus and cytoplasm
○ Plasma membrane, cell wall and nucleus
○ Plasma membrane, cell wall and cytoplasm

Answer: Plasma membrane, nucleus and cytoplasm

2. What is the jelly-like substance that fills the cell?

○ Cytoplasm
○ Protoplasm
○ Nucleoplasm
○ Endoplasm

Answer: Cytoplasm

3. What is the large, centrally located spherical component of the cell?

○ Nucleus
○ Vacuole
○ Plastid
○ Mitochondrion

Answer: Nucleus

4. What is the outermost covering of the cell?

○ Plasma membrane
○ Cell wall
○ Nuclear membrane
○ Cytoskeleton

Answer: Plasma membrane

5. What are the specialized structures within the cytoplasm called?

○ Cell organelles
○ Organs
○ Tissues
○ Molecules

Answer: Cell organelles

Plasma Membrane or Cell Membrane

1. The plasma membrane is called a selectively permeable membrane because:

○ It allows entry and exit of some materials and prevents movement of others
○ It allows entry and exit of all materials
○ It prevents entry and exit of all materials
○ None of the above

Answer: It allows entry and exit of some materials and prevents movement of others

2. The movement of water molecules through a selectively permeable membrane is called?

○ Osmosis
○ Diffusion
○ Endocytosis
○ Exocytosis

Answer: Osmosis

3. A cell will swell up if the surrounding solution is?

○ Hypotonic
○ Isotonic
○ Hypertonic
○ None of the above

Answer: Hypotonic

4. The process by which a cell engulfs food is known as?

○ Endocytosis
○ Exocytosis
○ Osmosis
○ Diffusion

Answer: Endocytosis

5. The plasma membrane is made up of:

○ Lipids and proteins
○ Carbohydrates and proteins
○ Lipids and carbohydrates
○ Carbohydrates and fats

Answer: Lipids and proteins

Cell Wall

1. Which cells have a cell wall?

○ Plant cells
○ Animal cells
○ Both plant and animal cells
○ None of the above

Answer: Plant cells

2. The plant cell wall is mainly composed of?

○ Cellulose
○ Protein
○ Lipid
○ Starch

Answer: Cellulose

3. The phenomenon of shrinkage of cell contents away from the cell wall is known as?

○ Plasmolysis
○ Osmosis
○ Diffusion
○ Endocytosis

Answer: Plasmolysis

4. What does the cell wall provide to plants?

○ Structural strength
○ Energy
○ Food
○ Color

Answer: Structural strength

5. The cell wall permits the cells of which organisms to withstand very dilute external media without bursting?

○ Plants, fungi and bacteria
○ Only plants
○ Only fungi
○ Only bacteria

Answer: Plants, fungi and bacteria

Nucleus

1. The nucleus has a double layered covering called?

○ Nuclear membrane
○ Plasma membrane
○ Cell wall
○ Cytoplasm

Answer: Nuclear membrane

2. Functional segments of DNA are called?

○ Genes
○ Chromosomes
○ Chromatin
○ Nucleoid

Answer: Genes

3. Organisms whose cells lack a nuclear membrane are called?

○ Prokaryotes
○ Eukaryotes
○ Unicellular
○ Multicellular

Answer: Prokaryotes

4. The undefined nuclear region in prokaryotes is called?

○ Nucleoid
○ Nucleus
○ Chromosome
○ Chromatin

Answer: Nucleoid

5. The nucleus plays a central role in?

○ Cellular reproduction
○ Protein synthesis
○ Energy production
○ Lipid synthesis

Answer: Cellular reproduction

Cytoplasm

1. The fluid content inside the plasma membrane is called?

○ Cytoplasm
○ Protoplasm
○ Nucleoplasm
○ Endoplasm

Answer: Cytoplasm

2. Which of the following is true for prokaryotes?

○ Membrane-bound cell organelles are absent
○ Membrane-bound cell organelles are present
○ Nuclear membrane is present
○ None of the above

Answer: Membrane-bound cell organelles are absent

3. Viruses lack any membranes and hence?

○ Do not show characteristics of life until they enter a living body
○ Show characteristics of life
○ Are unicellular
○ Are multicellular

Answer: Do not show characteristics of life until they enter a living body

4. The cytoplasm contains many specialised?

○ Cell organelles
○ Organs
○ Tissues
○ Molecules

Answer: Cell organelles

5. Eukaryotic cells have?

○ Nuclear membrane as well as membrane-enclosed organelles
○ No nuclear membrane
○ No membrane-enclosed organelles
○ None of the above

Answer: Nuclear membrane as well as membrane-enclosed organelles

Cell Organelles

1. Which of the following are visible only with an electron microscope?

○ Some organelles
○ All organelles
○ No organelles
○ None of the above

Answer: Some organelles

2. Which of the following is a feature of eukaryotic cells?

○ Membrane-bound little structures (or ‘organelles’) within themselves
○ No membrane-bound organelles
○ A nucleoid
○ None of the above

Answer: Membrane-bound little structures (or ‘organelles’) within themselves

3. Which of the following will we discuss as cell organelles?

○ Endoplasmic reticulum, Golgi apparatus, lysosomes, mitochondria and plastids
○ Only endoplasmic reticulum
○ Only Golgi apparatus
○ Only lysosomes

Answer: Endoplasmic reticulum, Golgi apparatus, lysosomes, mitochondria and plastids

4. The use of membrane-bound little structures is to?

○ Keep the activities of different kinds separate from each other
○ Mix the activities of different kinds
○ Stop all activities
○ None of the above

Answer: Keep the activities of different kinds separate from each other

5. Large and complex cells need a lot of chemical activities to?

○ Support their complicated structure and function
○ Support their simple structure and function
○ Destroy their structure and function
○ None of the above

Answer: Support their complicated structure and function

Endoplasmic Reticulum (ER)

1. The two types of ER are?

○ Rough ER and Smooth ER
○ Long ER and Short ER
○ Round ER and Flat ER
○ None of the above

Answer: Rough ER and Smooth ER

2. RER looks rough because of?

○ Ribosomes
○ Lipids
○ Proteins
○ Carbohydrates

Answer: Ribosomes

3. SER helps in the manufacture of?

○ Fat molecules, or lipids
○ Proteins
○ Carbohydrates
○ None of the above

Answer: Fat molecules, or lipids

4. The process of building the cell membrane is known as?

○ Membrane biogenesis
○ Photosynthesis
○ Respiration
○ Endocytosis

Answer: Membrane biogenesis

5. In the liver cells of vertebrates, which ER plays a crucial role in detoxifying many poisons and drugs?

○ SER
○ RER
○ Both SER and RER
○ None of the above

Answer: SER

Golgi Apparatus

1. The Golgi apparatus was first described by?

○ Camillo Golgi
○ Robert Hooke
○ Robert Brown
○ Leeuwenhoek

Answer: Camillo Golgi

2. The Golgi apparatus consists of a system of membrane-bound vesicles arranged in stacks called?

○ Cisterns
○ Vesicles
○ Tubules
○ Vacuoles

Answer: Cisterns

3. The Golgi apparatus is involved in the formation of?

○ Lysosomes
○ Ribosomes
○ Mitochondria
○ Plastids

Answer: Lysosomes

4. The functions of the Golgi apparatus include?

○ Storage, modification and packaging of products
○ Protein synthesis
○ Energy production
○ Lipid synthesis

Answer: Storage, modification and packaging of products

5. In the Golgi apparatus, complex sugars may be made from?

○ Simple sugars
○ Proteins
○ Lipids
○ None of the above

Answer: Simple sugars

Lysosomes

1. Lysosomes are also known as the?

○ ‘Suicide bags’ of a cell
○ ‘Powerhouses’ of a cell
○ ‘Kitchens’ of a cell
○ ‘Control centers’ of a cell

Answer: ‘Suicide bags’ of a cell

2. Lysosomes contain powerful?

○ Digestive enzymes
○ Synthetic enzymes
○ Respiratory enzymes
○ None of the above

Answer: Digestive enzymes

3. Lysosomes are a kind of?

○ Waste disposal system of the cell
○ Energy production system of the cell
○ Protein synthesis system of the cell
○ Lipid synthesis system of the cell

Answer: Waste disposal system of the cell

4. The enzymes in lysosomes are made by?

○ RER
○ SER
○ Golgi apparatus
○ Mitochondria

Answer: RER

5. What happens when the cell gets damaged?

○ Lysosomes may burst and the enzymes digest their own cell
○ Lysosomes create a new cell
○ Lysosomes repair the cell
○ None of the above

Answer: Lysosomes may burst and the enzymes digest their own cell

Mitochondria

1. Mitochondria are known as the?

○ ‘Powerhouses’ of the cell
○ ‘Suicide bags’ of a cell
○ ‘Kitchens’ of a cell
○ ‘Control centers’ of a cell

Answer: ‘Powerhouses’ of the cell

2. The energy currency of the cell is?

○ ATP
○ ADP
○ AMP
○ None of the above

Answer: ATP

3. Which organelle has its own DNA and ribosomes?

○ Mitochondria
○ Lysosomes
○ Golgi apparatus
○ ER

Answer: Mitochondria

4. The outer membrane of mitochondria is?

○ Porous
○ Not porous
○ Deeply folded
○ None of the above

Answer: Porous

5. The inner membrane of mitochondria is?

○ Deeply folded
○ Not folded
○ Porous
○ None of the above

Answer: Deeply folded

Plastids

1. Plastids are present only in?

○ Plant cells
○ Animal cells
○ Both plant and animal cells
○ None of the above

Answer: Plant cells

2. Chromoplasts that contain chlorophyll are known as?

○ Chloroplasts
○ Leucoplasts
○ Chromoplasts
○ None of the above

Answer: Chloroplasts

3. The primary function of leucoplasts is?

○ Storage
○ Photosynthesis
○ Respiration
○ Protein synthesis

Answer: Storage

4. Like mitochondria, plastids also have their own?

○ DNA and ribosomes
○ Only DNA
○ Only ribosomes
○ None of the above

Answer: DNA and ribosomes

5. Chloroplasts are important for?

○ Photosynthesis in plants
○ Respiration in plants
○ Transpiration in plants
○ None of the above

Answer: Photosynthesis in plants

Vacuoles

1. Vacuoles are?

○ Storage sacs for solid or liquid contents
○ Powerhouses of the cell
○ Kitchens of the cell
○ Control centers of the cell

Answer: Storage sacs for solid or liquid contents

2. Which cells have very large vacuoles?

○ Plant cells
○ Animal cells
○ Both plant and animal cells
○ None of the above

Answer: Plant cells

3. In plant cells, vacuoles provide?

○ Turgidity and rigidity to the cell
○ Energy to the cell
○ Food to the cell
○ Color to the cell

Answer: Turgidity and rigidity to the cell

4. In Amoeba, the food vacuole contains?

○ The food items that the Amoeba has consumed
○ Water
○ Air
○ None of the above

Answer: The food items that the Amoeba has consumed

5. Specialised vacuoles in some unicellular organisms play important roles in?

○ Expelling excess water and some wastes from the cell
○ Absorbing water
○ Storing food
○ None of the above

Answer: Expelling excess water and some wastes from the cell

Cell Division

1. The process by which new cells are made is called?

○ Cell division
○ Cell multiplication
○ Cell addition
○ Cell subtraction

Answer: Cell division

2. The two main types of cell division are?

○ Mitosis and meiosis
○ Mitosis and osmosis
○ Meiosis and osmosis
○ None of the above

Answer: Mitosis and meiosis

3. In mitosis, a mother cell divides to form how many daughter cells?

○ Two
○ Four
○ Six
○ Eight

Answer: Two

4. In meiosis, a cell divides to produce how many new cells?

○ Four
○ Two
○ Six
○ Eight

Answer: Four

5. In meiosis, the new cells have how many chromosomes compared to the mother cell?

○ Half
○ Same
○ Double
○ Triple

Answer: Half