

Name: _____ Date: _____

Answer Key: Blueprint of the Living Fortress: 6th Grade Cell Structure Quiz

Identify the microscopic machinery keeping organisms alive through engaging recall questions about organelles and their roles in biological survival.

1. Which organelle acts like a 'security guard,' deciding which nutrients can enter a cell and which waste products must leave?

Answer: B) Cell Membrane

The cell membrane is semi-permeable, meaning it regulates the movement of substances in and out of the cell to maintain balance.

2. The ___ is often called the 'brain' or 'control center' of the cell because it contains the genetic blueprints (DNA).

Answer: C) Nucleus

The nucleus houses DNA and coordinates key activities like growth and reproduction, much like a control center.

3. True or False: Mitochondria are responsible for producing energy through a process called respiration.

Answer: A) True

Mitochondria take in nutrients and break them down to create energy-rich molecules for the cell.

4. If a cell needs to package and ship a protein to a different part of the body, which organelle serves as the 'post office'?

Answer: C) Golgi Apparatus

The Golgi apparatus modifies, sorts, and packages proteins and lipids for transport.

5. The tiny structures that act like protein factories, creating the building blocks the cell needs to grow, are called ___.

Answer: B) Ribosomes

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Ribosomes are the sites in a cell where proteins are synthesized.

6. True or False: The Lysosome is responsible for cleaning up the cell by breaking down waste materials.

Answer: A) True

Lysosomes contain digestive enzymes that break down excess or worn-out cell parts and invading viruses or bacteria.

7. Which organelle is a network of membranes that helps transport materials, like a highway system for the cell?

Answer: A) Endoplasmic Reticulum

The Endoplasmic Reticulum (ER) functions as a manufacturing and packaging system, moving molecules through the cell.

8. Before a skin cell can divide to make a new cell, the ___ must manage the process of DNA replication.

Answer: C) Nucleus

The nucleus contains the genetic material and regulates the cell cycle and reproduction.

9. True or False: The cell membrane is only found in plant cells, not animal cells.

Answer: B) False

Both plant and animal cells have a cell membrane; however, only plant cells have a rigid cell wall.

10. Which cell function involves the movement of ions across a nerve cell to send signals throughout the body?

Answer: C) Conductivity

Conductivity is the ability of a cell to transmit an impulse, which is a specialized function of nerve and muscle cells.