

Cell Organelles Quiz Answer Key PDF

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What is the primary function of ribosomes?

- A. Lipid synthesis
- B. Protein synthesis ✓**
- C. DNA replication
- D. Photosynthesis

Explain the role of the cytoskeleton in a cell.

The cytoskeleton is a network of protein filaments and tubules that maintains cell shape, enables cellular movement, organizes organelles, and is essential for processes such as mitosis and cytokinesis.

What are the differences between the rough and smooth endoplasmic reticulum?

The rough endoplasmic reticulum has ribosomes on its surface and is involved in protein synthesis, whereas the smooth endoplasmic reticulum does not have ribosomes and is involved in lipid synthesis and detoxification.

Where is the genetic material of a cell primarily located?

- A. Golgi Apparatus
- B. Ribosome
- C. Nucleus ✓**
- D. Mitochondria

Why is the cell membrane considered selectively permeable, and how does this property benefit the cell?

The cell membrane is considered selectively permeable because it contains phospholipid bilayers and proteins that control the movement of substances in and out of the cell, allowing only specific

molecules to pass through while keeping others out.

Which organelle is responsible for photosynthesis in plant cells?

- A. Chloroplast ✓**
- B. Mitochondria
- C. Lysosome
- D. Nucleus

Discuss the significance of chloroplasts in plant cells.

Chloroplasts are significant in plant cells because they enable photosynthesis, allowing plants to convert sunlight into energy and produce oxygen.

Which organelles contain their own DNA? (Select all that apply)

- A. Nucleus
- B. Mitochondria ✓**
- C. Chloroplasts ✓**
- D. Ribosomes

Which of the following are components of the endomembrane system? (Select all that apply)

- A. Nucleus
- B. Endoplasmic Reticulum ✓**
- C. Golgi Apparatus ✓**
- D. Mitochondria

Which organelle modifies and packages proteins for secretion?

- A. Ribosome
- B. Golgi Apparatus ✓**
- C. Lysosome
- D. Smooth ER

Which organelles are involved in energy production? (Select all that apply)

- A. Mitochondria ✓**
- B. Chloroplasts ✓**
- C. Ribosomes
- D. Lysosomes

Which of the following organelles are involved in protein processing and transport? (Select all that apply)

- A. Ribosomes ✓**
- B. Rough ER ✓**
- C. Golgi Apparatus ✓**
- D. Smooth ER

Which structures are found in plant cells but not in animal cells? (Select all that apply)

- A. Cell wall ✓**
- B. Chloroplasts ✓**
- C. Centrioles
- D. Large central vacuole ✓**

Which organelle is known as the "powerhouse of the cell"?

- A. Nucleus
- B. Ribosome
- C. mitochondria ✓**
- D. Golgi Apparatus

Which organelle is involved in detoxifying harmful substances?

- A. Lysosome
- B. Peroxisome ✓**
- C. Golgi Apparatus
- D. Smooth ER

How do lysosomes contribute to cellular homeostasis?

Lysosomes contribute to cellular homeostasis by degrading and recycling cellular waste and macromolecules, thus maintaining a balanced internal environment.

Describe the process by which proteins are synthesized and transported out of the cell.

Proteins are synthesized in ribosomes through translation of mRNA, then transported out of the cell via the endoplasmic reticulum and Golgi apparatus.

What structure provides plant cells with rigidity and protection?

- A. Cell membrane
- B. Cytoskeleton
- C. Cell wall ✓**
- D. Endoplasmic reticulum

What functions are associated with the Golgi apparatus? (Select all that apply)

- A. Protein modification ✓**
- B. Lipid synthesis
- C. Packaging proteins ✓**
- D. Photosynthesis

What is the primary function of the smooth endoplasmic reticulum?

- A. Protein synthesis
- B. Lipid synthesis ✓**
- C. DNA replication
- D. Photosynthesis