

Prokaryotic vs Eukaryotic Cells Quiz Answer Key PDF

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What type of ribosomes are found in prokaryotic cells?

- A. 60S
- B. 70S ✓**
- C. 80S
- D. 90S

In which type of cell would you find mitochondria?

- A. Prokaryotic
- B. Eukaryotic ✓**
- C. Both
- D. None of the above

How do the cell walls of plants and bacteria differ in composition and function?

Plant cell walls are composed mainly of cellulose, while bacterial cell walls are primarily made of peptidoglycan.

Discuss how the presence of membrane-bound organelles in eukaryotic cells contributes to their complexity.

Membrane-bound organelles in eukaryotic cells enable compartmentalization, allowing for distinct environments and specialized functions, which enhances cellular efficiency and complexity.

Which of the following organisms is an example of a eukaryote?

- A. Bacteria
- B. Archaea
- C. Fungi ✓**

D. Virus

Explain the role of plasmids in prokaryotic cells and why they are important.

Plasmids in prokaryotic cells serve as vectors for genetic information, allowing for the transfer of genes that can provide benefits like antibiotic resistance or metabolic capabilities, thus enhancing survival and adaptability.

Why is the evolutionary timeline of prokaryotic and eukaryotic cells significant in understanding cellular evolution?

The evolutionary timeline of prokaryotic and eukaryotic cells is significant in understanding cellular evolution because it reveals how simple life forms evolved into more complex organisms, providing insights into the development of cellular structures and functions.

Describe the differences in DNA organization between prokaryotic and eukaryotic cells.

Prokaryotic cells have circular DNA organized in a nucleoid, whereas eukaryotic cells have linear DNA organized into chromosomes within a nucleus.

Which of the following are true about prokaryotic cells? (Select all that apply)

- A. They have a nucleus.
- B. They reproduce by binary fission. ✓**
- C. They contain plasmids. ✓**
- D. They have linear DNA.

Which of the following are characteristics of eukaryotic cells? (Select all that apply)

- A. Presence of a nucleus ✓**
- B. Circular DNA
- C. Membrane-bound organelles ✓**
- D. Smaller size than prokaryotic cells

What features are unique to eukaryotic cells compared to prokaryotic cells? (Select all that apply)

- A. Presence of a nucleoid

- B. Linear DNA ✓**
- C. Larger ribosomes ✓**
- D. Lack of membrane-bound organelles

Which cell type is believed to have appeared first in evolutionary history?

- A. Prokaryotic ✓**
- B. Eukaryotic
- C. Both appeared simultaneously
- D. None of the above

Which of the following structures is absent in prokaryotic cells?

- A. Ribosomes
- B. Nucleus ✓**
- C. Cell membrane
- D. Cytoplasm

What is the primary method of reproduction in prokaryotic cells?

- A. Mitosis
- B. Meiosis
- C. Binary fission ✓**
- D. Budding

Which of the following structures can be found in both prokaryotic and eukaryotic cells? (Select all that apply)

- A. Ribosomes ✓**
- B. Mitochondria
- C. Cell membrane ✓**
- D. Nucleus

Compare and contrast the processes of mitosis and binary fission. How do these processes reflect the complexity of the cells involved?

The main differences between mitosis and binary fission are that mitosis is a complex process involving multiple stages (prophase, metaphase, anaphase, and telophase) and occurs in eukaryotic

cells, while binary fission is a simpler, direct division process that occurs in prokaryotic cells, resulting in two identical daughter cells.

Which processes are involved in eukaryotic cell division? (Select all that apply)

- A. Binary fission
- B. Mitosis ✓**
- C. Meiosis ✓**
- D. Budding

Which type of cell is generally larger in size?

- A. Prokaryotic
- B. Eukaryotic ✓**
- C. Both are the same size
- D. None of the above

What are some examples of eukaryotic organisms? (Select all that apply)

- A. Plants ✓**
- B. Animals ✓**
- C. Bacteria
- D. Fungi ✓**

What is the composition of the cell wall in most bacteria?

- A. Cellulose
- B. Chitin
- C. Peptidoglycan ✓**
- D. Lignin