

Cell Cycle Quiz Answer Key PDF

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In which phase does the nuclear envelope break down?

- A. Prophase ✓**
- C. Anaphase
- D. Telophase
- C. Metaphase

Which phase of the cell cycle involves DNA replication?

- A. G1 Phase
- C. G2 Phase
- D. M Phase
- C. S Phase ✓**

What are potential consequences of cell cycle dysregulation?

- A. Cancer ✓**
- C. Controlled cell division
- D. Cell death
- C. Uncontrolled cell division ✓**

Which phase follows the completion of mitosis?

- A. G1 Phase
- C. G2 Phase
- D. Cytokinesis ✓**
- C. S Phase

Explain the significance of the S phase in the cell cycle.

- A. It is the phase where cells grow
- C. It is the phase where cells divide
- D. It is the phase where DNA is repaired
- C. It is the phase where DNA is replicated ✓**

What is the primary purpose of the G1 phase in the cell cycle?

- A. DNA replication
- C. Cell growth and preparation for DNA synthesis ✓**
- D. Chromosome alignment
- C. Cell division

Which checkpoint ensures that all chromosomes are properly attached to spindle fibers before proceeding with cell division?

- A. G1 Checkpoint
- C. Metaphase Checkpoint ✓**
- D. S Phase Checkpoint
- C. G2 Checkpoint

Discuss the importance of cytokinesis in the cell cycle.

- A. It is the final step of mitosis ✓**
- C. It occurs during interphase
- D. It is not essential for cell division
- C. It is the phase where DNA is replicated

Which of the following are phases of interphase?

- A. G1 Phase ✓**
- C. G2 Phase ✓**
- D. M Phase
- C. S Phase ✓**

What are the implications of faulty cell cycle checkpoints in the development of cancer?

- A. They prevent cancer
- C. They have no effect on cancer

D. They can lead to cancer ✓

C. They promote normal cell division

Which processes occur during the G2 phase?

A. DNA replication

C. Preparation for mitosis ✓

D. Chromosome condensation

C. Cell growth ✓

During which phase do chromosomes align at the cell equator?

A. Prophase

C. Anaphase

D. Telophase

C. Metaphase ✓

Which of the following are true about mitosis?

A. It results in two identical daughter cells ✓

C. It includes prophase, metaphase, anaphase, and telophase ✓

D. It is part of interphase

C. It occurs after cytokinesis

What is the primary difference between the cell cycle of prokaryotic and eukaryotic cells?

A. Prokaryotic cells undergo mitosis

C. Prokaryotic cells divide by binary fission ✓

D. Eukaryotic cells do not have a cell cycle

C. Eukaryotic cells divide by binary fission

How does the G1 checkpoint contribute to maintaining cellular integrity?

A. It checks for DNA damage ✓

C. It initiates mitosis

D. It regulates cytokinesis

C. It promotes cell growth

Which of the following are involved in regulating the cell cycle?

A. Cyclins ✓

C. Ribosomes

D. Spindle fibers

C. CDKs (Cyclin-dependent kinases) ✓

What is the role of cyclins in the cell cycle?

A. DNA replication

C. Regulation of cell cycle progression ✓

D. Repair of damaged DNA

C. Cell division

Describe the role of cyclin-dependent kinases (CDKs) in cell cycle regulation.

A. They initiate DNA replication

C. They repair damaged DNA

D. They regulate cell cycle progression ✓

C. They assist in cytokinesis

What are the functions of cell cycle checkpoints?

A. To ensure DNA is undamaged ✓

C. To facilitate chromosome alignment

D. To initiate cytokinesis

C. To control the timing of cell division ✓

Compare and contrast the cell cycle processes in prokaryotic and eukaryotic cells.

A. Prokaryotic cells are more complex

C. Eukaryotic cells divide by binary fission

D. Eukaryotic cells undergo mitosis ✓

C. Prokaryotic cells undergo mitosis