Cell Cycle Quiz PDF

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In which phase does the nuclear envelope break down?

- ◯ Prophase
- ◯ Anaphase
- ◯ Telophase
- ◯ Metaphase

Which phase of the cell cycle involves DNA replication?

- ◯ G1 Phase
- ◯ G2 Phase
- ◯ M Phase
- ◯ S Phase

What are potential consequences of cell cycle dysregulation?

- ☐ Cancer
- ☐ Controlled cell division
- ☐ Cell death
- ☐ Uncontrolled cell division

Which phase follows the completion of mitosis?

- ◯ G1 Phase
- ◯ G2 Phase
- ◯ Cytokinesis
- ◯ S Phase

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

- ◯ It is the phase where cells grow
- ◯ It is the phase where cells divide

- ◯ It is the phase where DNA is repaired
- ◯ It is the phase where DNA is replicated

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

- ◯ DNA replication
- ◯ Cell growth and preparation for DNA synthesis
- ◯ Chromosome alignment
- ◯ Cell division

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

- ◯ G1 Checkpoint
- ◯ Metaphase Checkpoint
- ◯ S Phase Checkpoint
- ◯ G2 Checkpoint

Discuss the importance of cytokinesis in the cell cycle.

- ◯ It is the final step of mitosis
- ◯ It occurs during interphase
- ◯ It is not essential for cell division
- ◯ It is the phase where DNA is replicated

Which of the following are phases of interphase?

- ☐ G1 Phase
- ☐ G2 Phase
- ☐ M Phase
- ☐ S Phase

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

- ◯ They prevent cancer
- ◯ They have no effect on cancer
- ◯ They can lead to cancer
- ◯ They promote normal cell division

Which processes occur during the G2 phase?

- [ ] DNA replication
- [ ] Preparation for mitosis
- [ ] Chromosome condensation
- [ ] Cell growth

During which phase do chromosomes align at the cell equator?

- ◯ Prophase
- ◯ Anaphase
- ◯ Telophase
- ◯ Metaphase

Which of the following are true about mitosis?

- [ ] It results in two identical daughter cells
- [ ] It includes prophase, metaphase, anaphase, and telophase
- [ ] It is part of interphase
- [ ] It occurs after cytokinesis

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

- ◯ Prokaryotic cells undergo mitosis
- ◯ Prokaryotic cells divide by binary fission
- ◯ Eukaryotic cells do not have a cell cycle
- ◯ Eukaryotic cells divide by binary fission

How does the G1 checkpoint contribute to maintaining cellular integrity?

- ◯ It checks for DNA damage
- ◯ It initiates mitosis
- ◯ It regulates cytokinesis
- ◯ It promotes cell growth

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

- [ ] Cyclins
- [ ] Ribosomes
- [ ] Spindle fibers
- [ ] CDKs (Cyclin-dependent kinases)

What is the role of cyclins in the cell cycle?

- ◯ DNA replication
- ◯ Regulation of cell cycle progression
- ◯ Repair of damaged DNA
- ◯ Cell division

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

- ◯ They initiate DNA replication
- ◯ They repair damaged DNA
- ◯ They regulate cell cycle progression
- ◯ They assist in cytokinesis

What are the functions of cell cycle checkpoints?

- ☐ To ensure DNA is undamaged
- ☐ To facilitate chromosome alignment
- ☐ To initiate cytokinesis
- ☐ To control the timing of cell division

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

- ◯ Prokaryotic cells are more complex
- ◯ Eukaryotic cells divide by binary fission
- ◯ Eukaryotic cells undergo mitosis
- ◯ Prokaryotic cells undergo mitosis