

## **IB Bio Quiz Cell Division PDF**

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During which phase of mitosis do chromosomes align at the cell equator?
<ul><li>Prophase</li><li>Metaphase</li><li>Anaphase</li><li>Telophase</li></ul>
Which of the following statements about the cell cycle are true?
<ul><li>The G1 phase is primarily for DNA replication.</li><li>Cyclins are proteins that regulate the cell cycle.</li></ul>
The S phase is when DNA replication occurs.
Cytokinesis is part of the M phase.
Explain the role of checkpoints in the cell cycle and discuss how they contribute to preventing cancer.
What is the primary function of the S phase in the cell cycle?
○ Cell growth
O DNA replication
Ortalinesia
○ Cytokinesis

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Which processes occur during interphase?
☐ DNA replication
☐ Chromosome condensation
Cell growth
☐ Nuclear envelope breakdown
Describe the process of binary fission in prokaryotes and compare it to mitosis in eukaryotes.
Which phase of the cell cycle is characterized by the preparation for mitosis?
○ G1 phase
○ S phase
○ G2 phase
○ M phase
Which of the following are components of the mitotic spindle?
☐ Microtuules
☐ Centrosomes
☐ Chromatin
☐ Actin filaments
Discuss how mutations in genes regulating the cell cycle can lead to cancer. Provide examples of

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specific genes involved.



What is the primary difference between cytokinesis in plant cells and animal cells?  Plant cells form a cleavage furrow, while animal cells form a cell plate.  Animal cells form a cleavage furrow, while plant cells form a cell plate.  Both plant and animal cells form a cleavage furrow.  Both plant and animal cells form a cell plate.  What are the key features of prophase in mitosis?  Chromosomes condense  Nuclear envelope dissolves  Chromosomes align at the equator  Spindle fibers form  Explain the significance of cyclins and cyclin-dependent kinases (CDKs) in the regulation of the cell cycle.	Plant cells form a cleavage furrow, while animal cells form a cell plate. Animal cells form a cleavage furrow, while plant cells form a cell plate. Both plant and animal cells form a cleavage furrow. Both plant and animal cells form a cell plate.  What are the key features of prophase in mitosis? Chromosomes condense Nuclear envelope dissolves Chromosomes align at the equator Spindle fibers form  Explain the significance of cyclins and cyclin-dependent kinases (CDKs) in the regulation of the cel cycle.  During which phase of mitosis do sister chromatids separate and move to opposite poles?	
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○ Prophase	Prophase	○ Prophase
○ Metaphase		
○ Ananhase	○ Anaphase	○ Anaphase
2 Allaphace	○ Telophase	○ Telophase

Which of the following occur during telophase?



Chromosomes de-condense	
Nuclear envelopes reform	
Spindle fibers disappear	
Chromosomes align at the equator	
Describe the process of cytokinesis in animal cells and explain I	now it differs from mitosis.
	/2
Which phase of mitosis is characterized by the reformation of th	e nuclear envelope?
Prophase	
○ Metaphase	
○ Anaphase	
○ Telophase	
Which of the following are true about cancer cells?	
They have uncontrolled cell division.	
They always form benign tumors.	
They can metastasize to other parts of the body.	
They are regulated by normal cell cycle checkpoints.	
Analyze the role of the mitotic spindle in ensuring accurate chro division.	mosome segregation during cell
	//

In which phase of the cell cycle does the cell spend the majority of its time?

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<ul><li>G1 phase</li><li>S phase</li><li>G2 phase</li><li>M phase</li></ul>
Which events occur during anaphase of mitosis?
<ul> <li>□ Chromosomes condense</li> <li>□ Sister chromatids separate</li> <li>□ Chromosomes move to opposite poles</li> <li>□ Nuclear envelope reforms</li> </ul>
Critically discuss the differences between mitosis and meiosis in terms of their purpose and outcomes.
Which of the following best describes the function of CDKs in the cell cycle?
They break down cyclins.
They activate cyclins.
<ul><li>They phosphorylate target proteins to regulate the cycle.</li><li>They are degraded at the end of the cell cycle.</li></ul>
Which of the following are involved in the regulation of the cell cycle?  Cyclins CDKs Actin filaments Checkpoints

Explain how the cell cycle is altered in cancer cells and the implications of these changes for treatment strategies.



	/1
What is the primary role of checkpoints in the cell cycle?	
○ To initiate DNA replication	
<ul> <li>To ensure the cell is ready to proceed to the next phase</li> </ul>	
To degrade cyclins	
○ To form the mitotic spindle	
What are the functions of the G1 phase in the cell cycle?	
☐ DNA replication	
Cell growth	
Organel duplication	
Chromosome segregation	
Evaluate the impact of environmental factors on the regulation of the cell cycle and the potential development of cancer.	