

Name \_\_\_\_\_

**AP Biology**

**TEXT: *Biology*, Campbell and Reece**

**7<sup>th</sup> Edition**

**Chapter 12**

**Cell Biology – Cell Division**

**Thematic Review Guide**

1. What is meant by the concept that cells go through a cell cycle?

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2. What are the key roles of cell division?

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3. What is the significance of chromosome replication?

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4. Sketch and label replicated chromosomes.

5. List the phases of the cell cycle with a brief description of what occurs in each phase.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

6. How does the spindle apparatus distribute chromosomes to the daughter cells?

\_\_\_\_\_

\_\_\_\_\_

7. What is the role of the kinetochores and the microtubules?

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\_\_\_\_\_

8. How does cytokinesis differ in animal and plant cells?

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\_\_\_\_\_

9. Eukaryotic mitosis is thought to have evolved from \_\_\_\_\_

10. Why is the regulation of the cell cycle critical to normal cells?

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11. What is the G1 checkpoint and where does it fit into the cycle?

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12. What evidence is there that regulation is chemical in nature?

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13. Identify the role of the following in the cell cycle clock.

a. Kinase \_\_\_\_\_

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b. Cyclin \_\_\_\_\_

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c. CDKs \_\_\_\_\_

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14. Describe the mechanism for regulating the passage of the cell into anaphase.

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15. Describe what triggers mitosis from G<sub>2</sub>.

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16. What is the role of ubiquitin?

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17. Describe a model for an external signal for growth.

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18. What happens when cancer develops?

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