

Name _____

AP Biology

TEXT: *Biology*, Campbell and Reece

7th Edition

Chapter 12

Cell Biology – Cell Division

Thematic Review Guide

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

2. What are the key roles of cell division?

3. What is the significance of chromosome replication?

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?

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

9. Eukaryotic mitosis is thought to have evolved from _____

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

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

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

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

a. Kinase _____

b. Cyclin _____

c. CDKs _____

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

15. Describe what triggers mitosis from G₂.

16. What is the role of ubiquitin?

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

18. What happens when cancer develops?
