

Chapter 10 Cell Growth and Division

Chapter Test B

Multiple Choice

Write the letter that best answers the question or completes the statement on the line provided.

- ____ 1. As a cell grows, it
 - a. places more demands on its DNA.
 - b. uses up food and oxygen more quickly.
 - c. has more trouble moving enough materials across its cell membrane.
 - d. all of the above

- ____ 2. Compared with small cells, large cells have more trouble
 - a. dividing.
 - b. producing daughter cells.
 - c. moving needed materials in and waste products out.
 - d. making copies of their DNA.

- ____ 3. The process by which a cell divides into two daughter cells is called
 - a. cell division.
 - b. metaphase.
 - c. interphase.
 - d. mitosis.

- ____ 4. Which of the following happens when a cell divides?
 - a. The cell's volume increases.
 - b. It becomes more difficult for the cell to get enough oxygen and nutrients.
 - c. The cell has DNA overload.
 - d. Each daughter cell receives its own copy of the parent cell's DNA.

- ____ 5. Which of the following is a phase in the cell cycle?
 - a. G₁ phase
 - b. G₂ phase
 - c. M phase
 - d. all of the above

- ____ 6. Cell division is represented in Figure 10-1 by the letter
 - a. A.
 - b. B.
 - c. C.
 - d. D.

- ____ 7. The cell cycle is the
 - a. series of events that cells go through as they grow and divide.
 - b. period of time between the birth and the death of a cell.
 - c. time from prophase until cytokinesis.
 - d. time it takes for one cell to undergo mitosis.

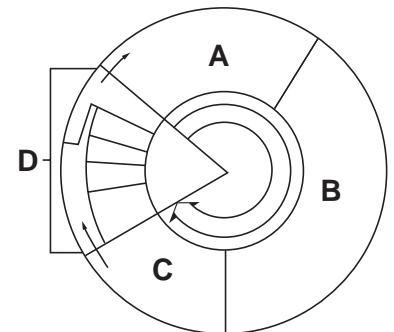


Figure 10-1

- ___ 8. The structure labeled A in Figure 10-2 is called the
 a. centromere. c. sister chromatid.
 b. centriole. d. spindle.
- ___ 9. The structures labeled B in Figure 10-2 are called
 a. centromeres. c. sister chromatids.
 b. centrioles. d. spindles.
- ___ 10. Which of the following is a phase of mitosis?
 a. cytokinesis c. prophase
 b. interphase d. S phase
- ___ 11. The first phase of mitosis is called
 a. prophase. c. metaphase.
 b. anaphase. d. interphase.
- ___ 12. What happens when cells come into contact with other cells?
 a. They divide more quickly.
 b. They stop growing.
 c. They produce cyclins.
 d. They produce p53.
- ___ 13. In eukaryotic cells, the timing of the cell cycle is regulated by
 a. the centrioles. c. the spindle.
 b. cyclins. d. all of the above
- ___ 14. Cancer cells form masses of cells called
 a. tumors. c. growth factors.
 b. cyclins. d. p53.
- ___ 15. What is a tumor?
 a. an accumulation of cyclins
 b. a mass of cancer cells
 c. the rapidly dividing cells found at the site of a wound
 d. a defective p53 gene

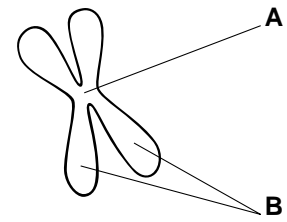


Figure 10-2

Completion

Complete each statement on the line provided.

16. The process by which a cell divides into two daughter cells is called _____ .
17. Together, the G_1 phase, S phase, and G_2 phase are called _____ .
18. Another name for cell division is the _____ phase.
19. Look at Figure 10-3. The process shown occurs directly following mitosis. This process is called _____ .

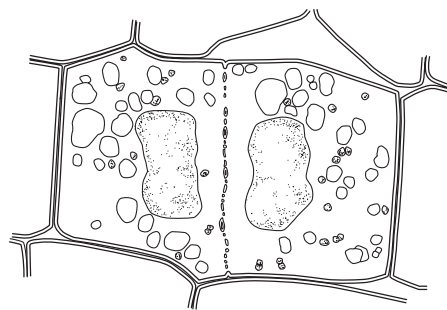


Figure 10-3

20. Proteins called _____ regulate the timing of the cell cycle in eukaryotic cells.

Short Answer

In complete sentences, write the answers to the questions on the lines provided.

21. List two problems that growth causes for cells.

22. The main events of the cell cycle are labeled A, B, C, and D in Figure 10-4. Name these events. Then, briefly state what happens during each event.

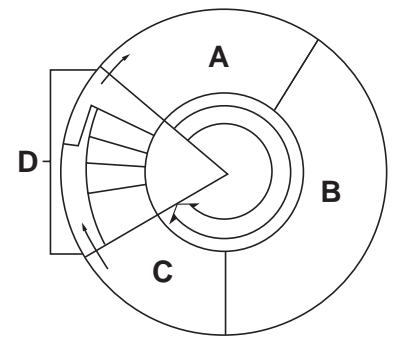


Figure 10-4

23. What effect do the cells surrounding a normal cell have on that cell's growth and division?

24. Name two factors that help regulate the timing of the cell cycle.

25. How do cancer cells differ from normal cells?

Using Science Skills

Use the diagrams below to answer the following questions on the lines provided.

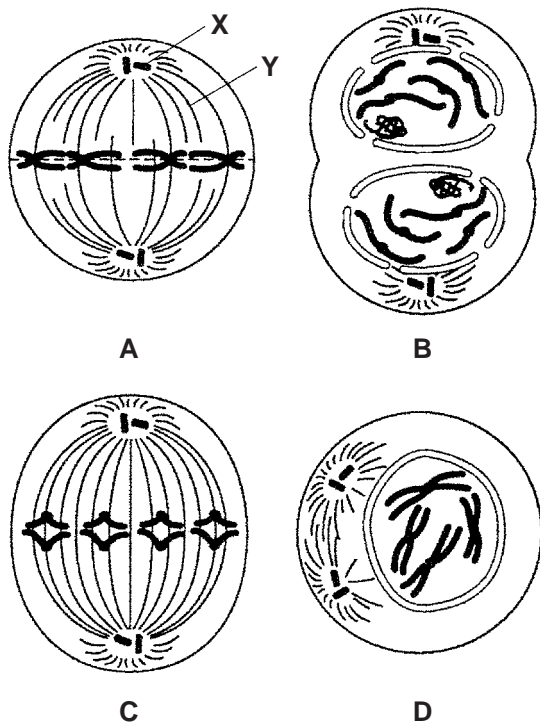


Figure 10-5

26. **Interpreting Graphics** What does Figure 10-5 represent? How do you know if this is an animal cell or a plant cell?

27. **Inferring** What is the chromosome number of the cell shown in Figure 10-5?

28. **Inferring** Identify the structures labeled X and Y in Figure 10-5.

29. **Applying Concepts** List the correct order for the diagrams in Figure 10-5.

30. **Predicting** After the steps shown in Figure 10-5 have been arranged in the correct order, what would a diagram of the next step show?
