

**Quiz: The Cell Cycle**

Read each question. Circle the letter of the correct answer.

1. Which of these is part of the cell theory?
  - A. Most cells arise from existing cells.
  - B. All living things are made of one cell.
  - C. Cells are nonliving units that make up organisms.
  - D. Cells are the most basic units of life.
2. Multicellular organisms use mitosis for growth, development, and \_\_\_\_\_.
  - A. repair
  - B. apoptosis
  - C. interphase
  - D. reproduction
3. Before a cell can proceed to mitosis from the gap 2 stage of the cell cycle, it must \_\_\_\_\_.
  - A. double in size
  - B. undergo cytokinesis
  - C. complete a full cell cycle
  - D. pass a critical checkpoint
4. In which scenario would a cell undergo apoptosis?
  - A. a newly formed cell
  - B. a cell that is at the end of G2
  - C. a cell that has reached its full size
  - D. a cell that has damaged DNA and cannot function properly
5. Which of these shows the correct sequence of events in the cell cycle?
  - A. M, G<sub>2</sub>, G<sub>1</sub>, S
  - B. G<sub>1</sub>, S, G<sub>2</sub>, M
  - C. S, G<sub>1</sub>, M, G<sub>2</sub>
  - D. M, G<sub>1</sub>, G<sub>2</sub>, S
6. A specific cell is a cube measuring 2 units on each side. What would be this cell's surface area : volume ratio?
  - A. 12:1
  - B. 6:1
  - C. 3:1
  - D. 2:1
7. Which of the following scientists is credited with coining the term *cells*?
  - A. Robert Hooke
  - B. Matthias Schleiden
  - C. Rudolf Virchow
  - D. Theodor Schwann
8. In which stage of the cell cycle do the nucleus and its contents divide?
  - A. gap 1
  - B. gap 2
  - C. mitosis
  - D. synthesis

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Unit 5 Lesson 1**

**Lesson Quiz**

9. Offspring that are genetically unique are the result of \_\_\_\_\_.

- A. sexual reproduction
- B. mitotic reproduction
- C. asexual reproduction
- D. vegetative reproduction

10. Two internal factors that are important in advancing the cell cycle are \_\_\_\_\_.

- A. kinases and cyclins
- B. proteins and platelets
- C. hormones and enzymes
- D. phosphates and enzymes

**Read each statement. Write your answer on the lines.**

11. Different cells divide at different rates. Provide an example of a cell that would have a high rate of cell division and also a cell that would divide more slowly. Why is there a difference?

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12. Briefly describe the three phases of Interphase in order.

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**Directions:** Read the passage, then answer the questions that follow.

### Cancer

Sally is a middle-aged woman who has been experiencing strange pain in her abdomen. When she visits her doctor, the doctor discovers that Sally has a cancerous mass in her large intestine (colon). Upon further testing, it is discovered that Sally's tumor is contained in her colon.

13. At the cellular level, what has caused Sally's cancer?

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14. Sally's son is a student in a Biology course and is learning about checkpoints in the cell cycle. How are checkpoints currently behaving in his mother's cancer cells?

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15. How does the concept of apoptosis relate to Sally's cancer cells compared with a normal cell?

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