

TEST NAME: Cell Cycle and Cell Differentiation Quiz
TEST ID: 3219587
GRADE: 10 - Tenth Grade
SUBJECT: Life and Physical Sciences
TEST CATEGORY: School Assessment

09/12/19, Cell Cycle and Cell Differentiation Quiz

Student: _____

Class: _____

Date: _____

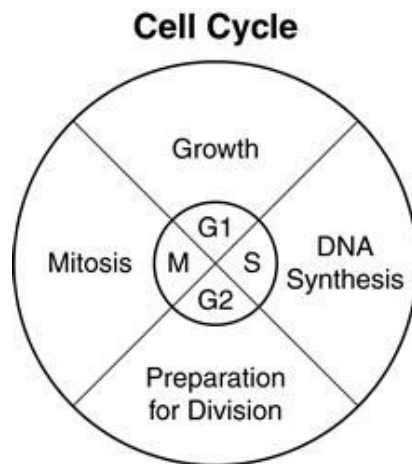
1. Which cell is undifferentiated?
 - A stem cell
 - B sperm cell
 - C kidney cell
 - D red blood cell

2. How are cells differentiated in organisms?
 - A Each cell contains the same DNA but gene expression is different.
 - B Each type of cell in an organ contains unique DNA for that organ type.
 - C Genes for specialized cells are instructed by amino acids to differentiate.
 - D Newly formed cells receive specialized genes from neighboring cells.

3. Which is the **best** reason why individual cells from the same organism begin to produce different proteins during development?
 - A Not all cells can synthesize proteins.
 - B Cells have different amounts of DNA.
 - C Specific genes are activated in the cells.
 - D Some cells have different numbers of chromosomes.

4. **Genes are located on chromosomes which are composed of**
 - A DNA.
 - B RNA.
 - C ATP.
 - D ADP.

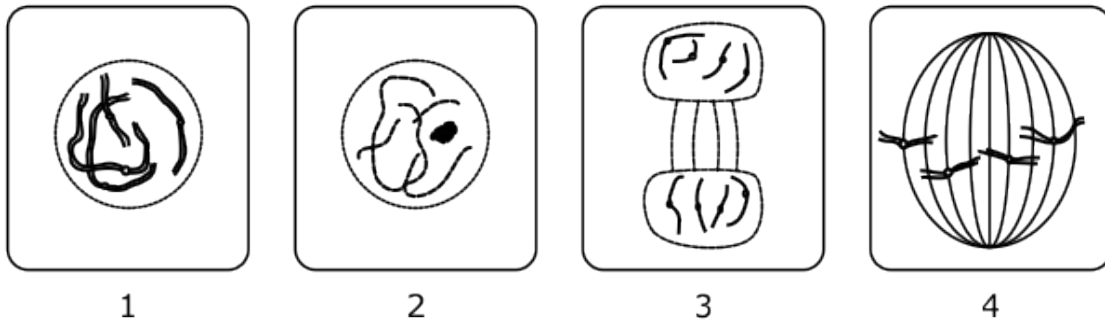
5. **Myosin is plentiful in muscle cells, but is not found at all in eye lens cells. Lens cells contain large amounts of crystallins, which are not found in muscle cells. Why do some proteins appear in one type of cell but not in another?**
- During differentiation, certain genes are added to cells to produce proteins that enable specific functions.
 - During differentiation, certain genes are activated to produce proteins that enable specific functions.
 - Differentiated cells produce all proteins but destroy the proteins they do not use.
 - Differentiated cells release unused proteins into the blood for other cells to use.
6. Which places the stages of the cell cycle in order from beginning to the end?
- cytokinesis, telophase, metaphase, anaphase, prophase, interphase
 - interphase, prophase, metaphase, anaphase, telophase, cytokinesis
 - prophase, interphase, anaphase, metaphase, cytokinesis, telophase
 - telophase, metaphase, cytokinesis, anaphase, prophase, interphase
7. **The graphic shows the processes involved in the cell cycle.**



The cell cycle is necessary in order for new cells to replace damaged or dead cells. In which part of the cycle are chromosomes copied?

- Growth
- DNA Synthesis
- Preparation for Division
- Mitosis

8. This diagram shows cells in various stages of the cell cycle.

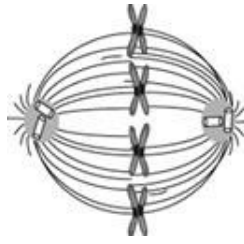


Which stage will occur immediately after interphase?

- A. 1
 - B. 2
 - C. 3
 - D. 4
9. What would happen if cytokinesis failed to occur?
- A. Sister chromatids would not separate.
 - B. The cell would be too big and contain more than one nucleus.
 - C. The cell would divide into two identical daughter cells.
 - D. The nucleus would never divide, and the new daughter cells would lack a nucleus and would die.
10. If a daughter cell has 50 chromosomes after mitosis, how many chromosomes were in the parent cell?
- A. 25
 - B. 50
 - C. 100
 - D. 150

11. **Cell division is necessary for an organism to**
- A. obtain nutrients.
 - B. grow and reproduce.
 - C. make proteins.
 - D. conserve matter and energy.
12. **During which phase of the cell cycle is the cell growing and preparing for cellular division?**
- A. cytokinesis
 - B. anaphase
 - C. prophase
 - D. interphase
13. **How does cytokinesis differ between plant cells and animal cells?**
- A. The cytoplasm divides once in animal cells, while the cytoplasm divides twice in plant cells.
 - B. Energy is required to divide the plant cells, while animal cells do not require energy to divide.
 - C. Centrioles form the cell wall in plant cells, while lysosomes digest the cytoplasm in animal cells.
 - D. The plasma membrane folds inward during division of an animal cell, while plant cells form a cell plate.
14. **If a cell is exposed to a chemical that inhibits the production of spindle fibers as the cell is preparing for mitosis, what would MOST likely happen?**
- A. The cell would continue with mitotic division.
 - B. The cell would undergo two divisions instead of one.
 - C. The cell would break open.
 - D. The cell would not divide.

15. Use the diagram to answer the question that follows.



Which phase of mitosis is represented in the diagram?

- A. prophase
- B. anaphase
- C. metaphase
- D. telophase