

Skills Worksheet

Test Prep Pretest

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- _____ 1. Large cells are difficult to maintain. How do cells overcome this problem?
a. They double their DNA. c. They take in more nutrients.
b. They coil DNA around proteins. d. They undergo cell division.
- _____ 2. How do chromosomes of eukaryotes compare with chromosomes of prokaryotes?
a. Eukaryotes have a single chromosome, whereas prokaryotes have a number of chromosomes.
b. Eukaryotes have chromosomes in the form of a ring, whereas prokaryotes have condensed chromatin in their chromosomes.
c. Eukaryotes have chromosomes made of DNA and proteins in a condensed form, whereas prokaryotes have a twisted loop of DNA.
d. Both (a) and (b)
- _____ 3. DNA is coiled in chromosomes so it can
a. be packed into a small space.
b. wind around the essential proteins.
c. can code for RNA and proteins.
d. form a centrosome.
- _____ 4. What do all cells need to do before they begin to divide?
a. form a daughter cell c. uncoil their DNA
b. form a cell plate d. copy their DNA
- _____ 5. In which order do the four stages of mitosis occur?
a. anaphase, interphase, prophase, and telophase
b. prophase, anaphase, metaphase, and telophase
c. interphase, prophase, anaphase, and telophase
d. prophase, metaphase, anaphase, and telophase
- _____ 6. During which phase of mitosis do chromatids line up along the equator of the dividing cell?
a. anaphase c. interphase
b. metaphase d. prophase
- _____ 7. Which of these structures is found only in a dividing animal cell and not in any other type of dividing cell?
a. centrioles c. a spindle
b. centrosomes d. sister chromatids

Test Prep Pretest *continued*

- _____ 8. How does cytokinesis in animal cells differ from cytokinesis in plant cells?
- In animal cells, the loop of DNA attaches to the cell membrane, whereas in plant cells it does not.
 - In animal cells, the formation of the cell membrane involves vesicles, whereas in plant cells it does not.
 - In animal cells, protein threads pinch the dividing cell in half, whereas in plant cells a cell plate forms down the middle of the dividing cell.
 - Both (a) and (b)
- _____ 9. What slows the rapid cell division of cells healing a cut in the skin?
- the need to copy DNA
 - the need to renew the tissues
 - contact with other skin cells
 - contact with vesicles in the middle of the cell
- _____ 10. How does a cell ensure that no mistakes occur in the DNA when the cell is dividing?
- Environmental signals influence the cell cycle.
 - Protein signals from nearby cells affect a dividing cell.
 - There is a checkpoint during mitosis.
 - There is a checkpoint before mitosis begins.

On the line before the term, rank the term to show the level of packaging from least condensed to most condensed. On the line after each term, define or describe the term.

- _____ 11. histone core _____
- _____ 12. DNA _____
- _____ 13. looped domain _____
- _____ 14. nucleosome cord _____
- _____ 15. one histone _____
- _____ 16. chromatid _____
- _____ 17. nucleosome _____

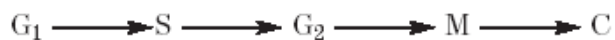
Complete each statement by writing the correct term in the space provided.

18. A(n) _____ is a segment of DNA that codes for RNA and protein.

Test Prep Pretest *continued*

19. The material that makes up chromosomes in eukaryotic cells and which is formed of DNA and protein is called _____.
20. The organelle that is the center of dynamic activity in a dividing cell is the _____.
21. The network of microtubules that pulls chromatids to the poles as a cell is dividing is called the _____.
22. Sister chromatids attach to each other in the region called the _____.
23. _____ is a group of diseases caused by uncontrolled cell growth.

Questions 24–31 refer to the sequence below.



24. The sequence above represents the _____.
25. The S in the sequence represents the phase in which _____ occurs.
26. Phases G_1 , S, and G_2 in the sequence above are collectively called _____.
27. During _____, a cell nucleus divides into two separate nuclei.
28. Two daughter cells form during _____.
29. The checkpoint in which the cell checks to make sure that chromatids are correctly attached to the spindle occurs between the _____ phase and the _____ phase.

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30. The checkpoint in which the cell checks to make sure the cell is healthy and large enough and that surrounding conditions are favorable occurs between the _____ phase and the _____ phase.

31. What happens after the C phase?

Read each question, and write your answer in the space provided.

32. Why does the body of a multicellular organism grow larger through cell division rather than by simply growing larger cells? Give two reasons.

33. What is a tumor? How does a benign tumor differ from a malignant tumor?
