General Biology Ch. 10 Review - Luzier 2017/2018

Key

Multiple Choice
Identify the choice that best completes the statement or answers the question.

C 1. Mitosis is the process by which
   a. microtubules are assembled.
   b. cytoplasm is divided.
   c. the nucleus is divided into two nuclei.
   d. the cell rests.

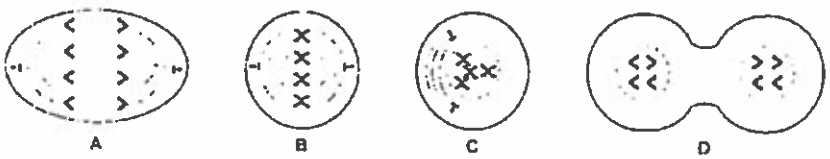
C 2. Refer to the illustration above. The cell in diagram 1 is in
   a. metaphase.
   b. telophase.
   c. anaphase.
   d. prophase.

B 3. Refer to the illustration above. Mitosis begins with the stage shown in diagram
   a. 1.
   b. 2.
   c. 3.
   d. 4.

B 4. Refer to the illustration above. The cell shown in diagram 5 is in
   a. metaphase.
   b. telophase.
   c. anaphase.
   d. prophase.

A 5. The phase of the cell cycle that occupies most of an average cell's life is
   a. G_1.
   b. mitosis.
   c. G_2.
   d. S.

A 6. A spindle fiber is a specialized form of
   a. microtubule.
   b. centrosome.
   c. centriole.
   d. chromosome.



B 7. Refer to the illustration above. Which of the following correctly indicates the order in which these events occur?
   a. A, B, C, D
   c. B, A, C, D

b. C, B, A, D
d. A, C, B, D

8. Refer to the illustration above. During which stage do the centromeres divide?
   a. A
   b. B
   c. C
   d. D

9. The first three phases of the cell cycle are collectively known as
   a. a gap.
   b. telophase.
   c. mitosis.
   d. interphase.

10. The phase of mitosis that is characterized by the arrangement of all chromosomes along the equator of the cell is called
    a. telophase.
    b. metaphase.
    c. anaphase.
    d. prophase.

11. What occurs after cytokinesis is completed?
    a. The cell organizes its microtubules.
    b. The cell begins to replicate its DNA.
    c. The cell enters G_1.
    d. The cell enters G_2.

12. The chromosome of a bacterium
    a. is wrapped around proteins.
    b. has a circular shape.
    c. occurs in multiple pairs within the cell.
    d. is found within the nucleus.

13. Which of the following statements is true?
    a. Prokaryotes divide by mitosis.
    b. Eukaryotes have circular chromosomes.
    c. Animal cells form new cell walls when they divide.
    d. Plant cells and animal cells have different strategies for cytokinesis.

14. Normal cells become cancer cells when
    a. regulation of cell growth and division occurs.
    b. cells respond to control mechanisms.
    c. cells pass through G_1.
    d. cells do not respond to checkpoints.

15. As a result of mitosis, each of the two new cells produced from the parent cell during cytokinesis
    a. receives a few chromosomes from the parent cell.
    b. receives an exact copy of all the chromosomes present in the parent cell.
    c. donates a chromosome to the parent cell.
    d. receives exactly half the chromosomes from the parent cell.

16. Cytokinesis in plant cells involves the formation of
    a. a belt of protein threads.
    b. a cell plate.
    c. spindle fibers.
    d. centrioles.

17. Cells that are not dividing remain in the
    a. mitosis phase.
    b. synthesis phase.
    c. first gap phase.
    d. second gap phase.

18. Which of the following shows the correct sequence of the cell cycle?
    a. cytokinesis → mitosis → G_1 → S → G_2
    b. S → G_1 → G_2 → mitosis → cytokinesis

c. $G_1 \rightarrow S \rightarrow G_2 \rightarrow$ mitosis $\rightarrow$ cytokinesis
d. mitosis $\rightarrow G_1 \rightarrow S \rightarrow G_2 \rightarrow$ cytokinesis

A 19. In eukaryotes, the cell cycle is controlled by
a. proteins.
b. carbohydrates.
c. lipids.
d. fats.

B 20. The cell cycle is monitored as each cell passes through
a. the S phase.
b. checkpoints.
c. the interphase checkpoint.
d. cytokinesis.

B 21. The region of a chromosome where two sister chromatids are held together is called a
a. spindle.
b. centromere.
c. nucleosome.
d. centriole.

A 22. The synthesis (S) phase is characterized by
a. DNA replication.
b. cell division.
c. replication of mitochondria and other organelles.
d. the division of cytoplasm.

Short Answer

23. When does cytokinesis occur in the cell cycle?
After telophase

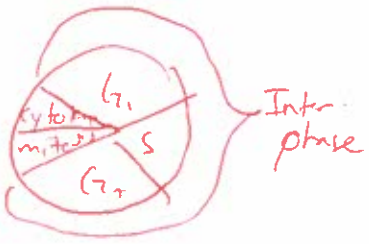
24. How does the genetic material in each new cell formed by cell division compare with the genetic material in the original cell? Identical

Essay

25. Give three reasons cells reproduce.
Growth, repair, replace dead cells

26. How is a benign tumor different from a malignant tumor?
B= doesn't spread M= spreads + causes more damage

27. Draw and label the five phases of the cell cycle.



28. How do prokaryotes and eukaryotes undergo cell division in different ways?
P- copy the circular chromosom + divide E- goes through entire cell cycle

29. When you cut yourself, new cells are formed to repair the cut skin. What causes the cells to stop dividing when the cut is healed?
- Cell regulation - goes through checkpoints + listens to protein signals