Mitosis November 1st 2019

Name: _____ **Date:** _____

1. Uncontrolled cell division is characteristic of

   A. cancer B. meiosis

   C. budding D. sporulation

2. Normally, a complete set of chromosomes ($2n$) is passed on to each daughter cell as a result of

   A. reduction division

   B. mitotic cell division

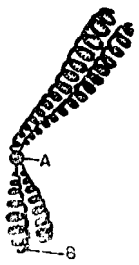
   C. meiotic cell division

   D. nondisjunction

3. The diagram shown represents a microscopic structure observed during the process of cell division. Letter *A* indicates a

   A. nucleolus B. ribosome

   C. centriole D. centromere

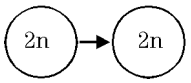


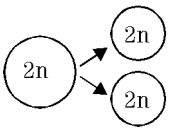
4. The diagram shown represents a microscopic structure observed during the process of cell division. Letter *B* indicates a

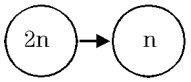
   A. centrosome B. spindle fiber

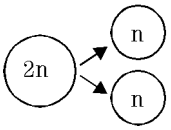
   C. chromatid D. cell plate

5. Which diagram most correctly represents the process of mitosis?

   A. 

   B. 

   C. 

   D. 

6. One difference between mitotic cell division in animals and in plants is that in plants

   A. chromosomes are duplicated, whereas in animals chromosomes are not duplicated

   B. chromosomes are separated, whereas in animals chromosomes are not separated

   C. spindle fibers are formed, whereas in animals spindle fibers are not formed

   D. cell plates are formed, whereas in animals cell plates are not formed

7. Which statement best describes a difference between cell division in plant and animal cells?

A. In animal cells, cytoplasmic division is accomplished by "pinching in" of the cell membrane, while in plant cells a cell plate is synthesized.

B. In plant cells, cytoplasmic division is accomplished by a "pinching in" of the cell membrane, while in animal cells a cell plate is synthesized.

C. In plant cells, centrosomes have a distinct role in spindle formation, while in animal cells centrosomes do not function during cell division.

D. In animal cells, replication of chromosomes occurs during the nondividing phase, while in plant cells replication occurs when the nuclear membrane disintegrates.

8. New cells are produced within bone marrow as a direct result of

A. gamete formation

B. meiotic cell division

C. polar body formation

D. mitotic cell division

9. Which is a characteristic of the group of diseases known as cancer?

A. uncontrolled cell division

B. the formation of only monoploid cells

C. meiotic cell division in body cells

D. the rapid formation of zygotes

10. All types of asexual reproduction involve the process known as

A. mitosis B. fertilization

C. artificial pollination D. reduction division

11. Normal mitotic cell division results in each daughter cell having

A. half the number of chromosomes as the parent cell

B. the same number and kinds of chromosomes as the parent cell

C. the same number but different kinds of chromosomes as the parent cell

D. twice the number of chromosomes as the parent cell

12. The mitotic cell division of tomato cells *differs* from the mitotic cell division of earthworm cells in that dividing tomato cells

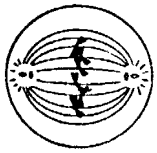
A. form a spindle

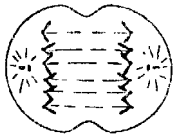
B. form a cell plate

C. have centrioles

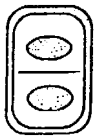
D. have cell membranes

13. Which diagram below represents a plant cell close to the final stage of mitotic cell division?

A. 

B. 

C. 

D. 

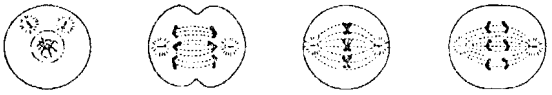
14. Which is the correct sequence for the stages of mitotic cell division represented by the diagrams shown?

A. A → B → C → D

B. A → C → D → B

C. B → A → D → C

D. B → C → D → A



15. How many chromosomes will be found in each of the two new cells formed as a result of mitotic cell division?

A. only one-half as many chromosomes as the parent cell

B. twice as many chromosomes as the parent cell

C. three times as many chromosomes as the parent cell

D. the same number of chromosomes as the parent cell

16. Which is a true statement about normal mitotic cell division?

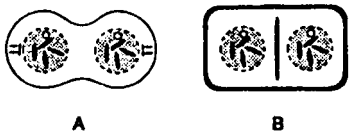
A. Each daughter cell produced has only one-fourth the number of chromosomes of the parent cell.

B. Each daughter cell produced has only one-half the number of chromosomes of the parent cell.

C. Each daughter cell produced has the same number of chromosomes as the parent cell.

D. Each daughter cell produced has twice the number of chromosomes of the parent cell.

17. In the diagrams of mitotic cell division shown, which structure is present in diagram B but *not* in diagram A?

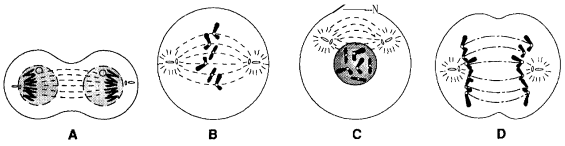


A. centriole
B. cell plate
C. cell membrane
D. cytoplasm

18. An organism's capacity for regeneration is most dependent on the

A. amount of surface area in its circulatory system
B. relative complexity of its endocrine glands
C. relative number of undifferentiated cells in its body
D. amount of oxygen supplied by its respiratory system

19. The diagrams shown represent stages of a cellular process. Which is the correct sequence of these stages?

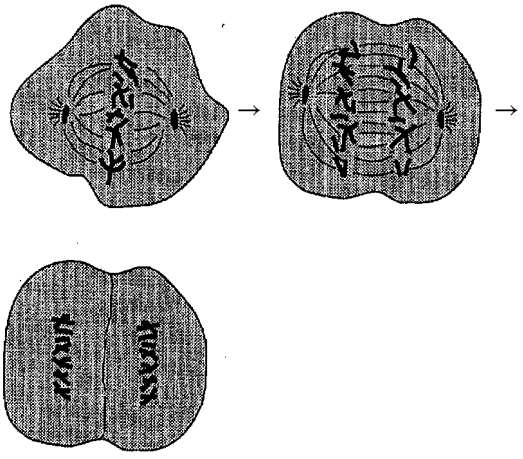


A. A → B → C → D
B. B → D → C → A
C. C → B → D → A
D. D → B → A → C

20. Which statement best describes the division of the cytoplasm and the nucleus in budding?

A. Both the cytoplasm and the nucleus divide equally.
B. The cytoplasm divides unequally, but the nucleus divides equally.
C. The cytoplasm divides equally, but the nucleus divides unequally.
D. Both the cytoplasm and the nucleus divide unequally.

21. A cell in the process of mitotic division is represented in the diagram shown. This type of cell could have been observed in



A. a virus
B. an alga
C. meristematic tissue
D. animal tissue

22. What is one difference between mitotic cell division in plants and mitotic cell division in animals?

A. Chromosomes are replicated in plants but not in animals.

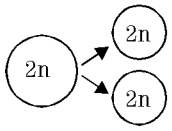
B. The replicated chromosomes separate in plants but not in animals.

C. A cell plate divides the cytoplasm in plants but not in animals.

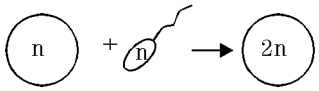
D. The nuclear membrane reforms in plants but not in animals.

23. Which diagram best represents mitotic cell division?

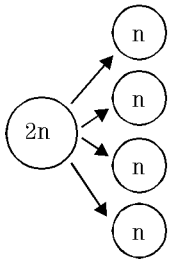
A.



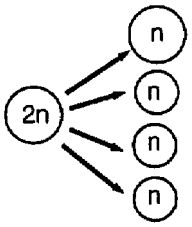
B.



C.



D.



24. The process of mitosis usually involves

A. chromosome duplication and synapsis

B. DNA replication and separation of chromatids

C. tetrad formation and fertilization

D. reduction in chromosome number and formation of cell plate

25. Which statement most accurately compares mitotic cell division in plant and animal cells?

A. It is exactly the same in plant and animal cells.

B. The walls of plant cells pinch in, but the membranes of animal cells do not.

C. Most plant cells use centrioles, but most animal cells do not.

D. In both plants and animals, the daughter cells are genetically identical to the original cell.

26. What would most likely result if mitosis was *not* accompanied by cytoplasmic division?

A. two cells, each with one nucleus

B. two cells, each without a nucleus

C. one cell with two identical nuclei

D. one cell without a nucleus

27. The phrases below describe several events that occur during the process of mitosis.

A) attachment of double-stranded chromosomes to the spindle apparatus

B) formation of single-stranded chromosomes, which are moved to opposite ends of the cell

C) disintegration of the nuclear membrane

D) nuclear membrane formation around each set of chromosomes, forming two nuclei

E) synthesis of a spindle apparatus

Which sequence represents the correct order of these events?

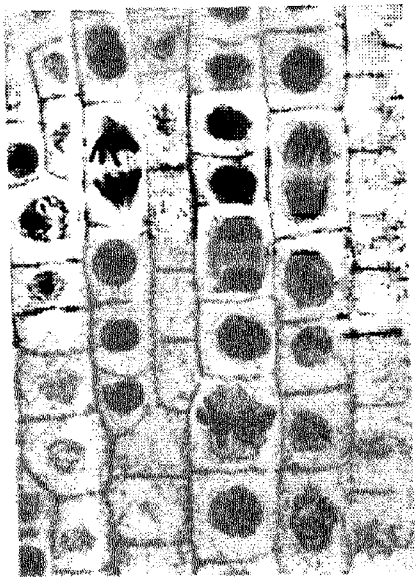
A. A → B → C → D → E

B. B → D → A → C → E

C. A → D → E → B → C

D. C → E → A → B → D

28. A photomicrograph of cells involved in various stages of nuclear division is shown.



Which title is most appropriate for this photomicrograph?

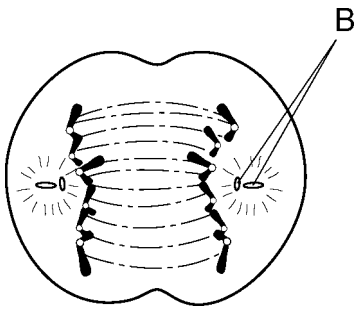
A. Mitosis in an Onion Root Tip

B. Cell Division in Human Blood Cells

C. Meiosis in Male Gametes

D. Gametogenesis in Yeast Cells

29. The cell in the diagram below illustrates a stage of mitotic cell division.



Letter *B* indicates the

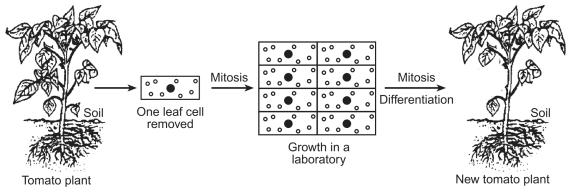
A. paired chromosomes

B. centrioles

C. cell plate

D. endoplasmic reticulum

30. A process used in agriculture is represented in the diagram below.



The diagram illustrates a process known as

A. amniocentesis B. translocation

C. cloning D. nondisjunction

31. Which two processes are involved in mitotic cell division?

A. nuclear duplication and cytoplasmic division

B. nuclear duplication and cytoplasmic duplication

C. spermatogenesis and cytoplasmic duplication

D. oogenesis and cytoplasmic division

32. Which mitotic event in the chart occurs after the other three events have taken place?

A	Appearance of spindle fibers
B	Separation of chromatids by the action of spindle fibers
C	Disintegration of the nuclear membrane
D	Replication of chromosomes

A. A B. B C. C D. D

33. A student using a compound light microscope is observing cells undergoing mitotic cell division. If the cells are from a bean plant, which process could the student observe?

A. the formation of a cell plate between two new cells

B. the replication of centrioles

C. a pinching-in of the cell membrane to form two cells

D. the pairing of homologous chromosomes

34. A comparison of karotypes from two carrot plants cloned from the same carrot root tissue should show that all cells of these carrot plants have

A. monoploid nuclei

B. centrioles

C. the diploid condition

D. chloroplasts

35. The diploid chromosome number in a certain species of fish is 20. How many chromosomes would normally be found in bone cell of this fish?

A. 10 B. 20 C. 23 D. 40

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1.
Answer: A
Points: 1

2.
Answer: B
Points: 1

3.
Answer: D
Points: 1

4.
Answer: C
Points: 1

5.
Answer: B
Points: 1

6.
Answer: D
Points: 1

7.
Answer: A
Points: 1

8.
Answer: D
Points: 1

9.
Answer: A
Objective: B.05D
Points: 1

10.
Answer: A
Points: 1

11.
Answer: B
Points: 1

12.
Answer: B
Points: 1

13.
Answer: D
Points: 1

14.
Answer: B
Points: 1

15.
Answer: D
Points: 1

16.
Answer: C
Points: 1

17.
Answer: B
Points: 1

18.
Answer: C
Points: 1

19.
Answer: C
Objective: B.05A
Points: 1

20.
Answer: B
Points: 1

21.
Answer: D
Points: 1

22.
Answer: C
Points: 1

23.
Answer: A
Points: 1

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25.
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