

General Biology I / Biology 1306

Self Quiz Ch 12 - Cell Cycle

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) The centromere is a region in which _____
A) chromosomes are grouped during telophase.
B) chromatids remain attached to one another until anaphase.
C) metaphase chromosomes become aligned at the metaphase plate.
D) the nucleus is located prior to mitosis.
E) new spindle microtubules form at either end.
- 2) Starting with a fertilized egg (zygote), a series of five cell divisions would produce an early embryo with _____
how many cells?
A) 4 B) 32 C) 16 D) 64 E) 8
- 3) How do the daughter cells at the end of mitosis and cytokinesis compare with their parent cell when it _____
was in G_1 of the cell cycle?
A) The daughter cells have half the number of chromosomes and half the amount of DNA.
B) The daughter cells have the same number of chromosomes and half the amount of DNA.
C) The daughter cells have the same number of chromosomes and twice the amount of DNA.
D) The daughter cells have the same number of chromosomes and the same amount of DNA.
E) The daughter cells have half the amount of cytoplasm and half the amount of DNA.
- 4) Which term describes centromeres uncoupling, sister chromatids separating, and the two new _____
chromosomes moving to opposite poles of the cell?
A) prometaphase
B) metaphase
C) anaphase
D) telophase
E) prophase
- 5) If a cell has 8 chromosomes at metaphase of mitosis, how many chromosomes will it have during _____
anaphase?
A) 2 B) 4 C) 16 D) 8 E) 1
- 6) Chromosomes first become visible during which phase of mitosis? _____
A) prometaphase
B) metaphase
C) prophase
D) telophase
E) anaphase
- 7) The somatic cells derived from a single-celled zygote divide by which process? _____
A) meiosis
B) replication
C) binary fission
D) mitosis
E) cytokinesis alone
- 8) During which phases of mitosis are chromosomes composed of two chromatids? _____
A) from G_1 of interphase through metaphase
B) from G_2 of interphase through metaphase
C) from anaphase through telophase
D) from metaphase through telophase
E) from interphase through anaphase

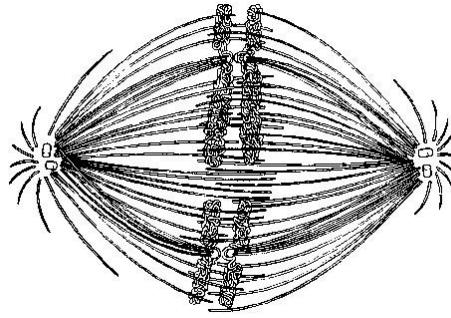


Figure 12.2

- 9) If the cell whose nuclear material is shown in Figure 12.2 continues toward completion of mitosis, which of the following events would occur next? 9) _____
- A) spindle fiber formation
 - B) synthesis of chromatids
 - C) cell membrane synthesis
 - D) nuclear envelope breakdown
 - E) formation of telophase nuclei
- 10) Cells that are in a nondividing state are in which phase? 10) _____
- A) S
 - B) G_0
 - C) M
 - D) G_2
 - E) G_1
- 11) DNA is replicated at this time of the cell cycle: 11) _____
- A) G_2
 - B) M
 - C) G_1
 - D) G_0
 - E) S
- 12) Nerve and muscle cells are in this phase: 12) _____
- A) G_1
 - B) M
 - C) G_2
 - D) S
 - E) G_0
- 13) Through a microscope, you can see a cell plate beginning to develop across the middle of a cell and nuclei re-forming on either side of the cell plate. This cell is most likely 13) _____
- A) a bacterial cell dividing.
 - B) an animal cell in the process of cytokinesis.
 - C) a plant cell in metaphase.
 - D) a plant cell in the process of cytokinesis.
 - E) an animal cell in the S phase of the cell cycle.
- 14) Which of the following does *not* occur during mitosis? 14) _____
- A) condensation of the chromosomes
 - B) separation of the spindle poles
 - C) separation of sister chromatids
 - D) spindle formation
 - E) replication of the DNA
- 15) One difference between cancer cells and normal cells is that cancer cells 15) _____
- A) are arrested at the S phase of the cell cycle.
 - B) cannot function properly because they are affected by density-dependent inhibition.
 - C) are unable to synthesize DNA.
 - D) are always in the M phase of the cell cycle.
 - E) continue to divide even when they are tightly packed together.

- 1) B
- 2) B
- 3) D
- 4) C
- 5) C
- 6) C
- 7) D
- 8) B
- 9) E
- 10) B
- 11) E
- 12) E
- 13) D
- 14) E
- 15) E