

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 1) _____
 - 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 2) _____
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 3) _____
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 4) _____
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 5) _____
anaphase?
 - A) 2
 - B) 4
 - C) 16
 - D) 8
 - E) 1

- 6) Chromosomes first become visible during which phase of mitosis? 6) _____
 - A) prometaphase
 - B) metaphase
 - C) prophase
 - D) telophase
 - E) anaphase

- 7) The somatic cells derived from a single-celled zygote divide by which process? 7) _____
 - A) meiosis
 - B) replication
 - C) binary fission
 - D) mitosis
 - E) cytokinesis alone

- 8) During which phases of mitosis are chromosomes composed of two chromatids? 8) _____
 - 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

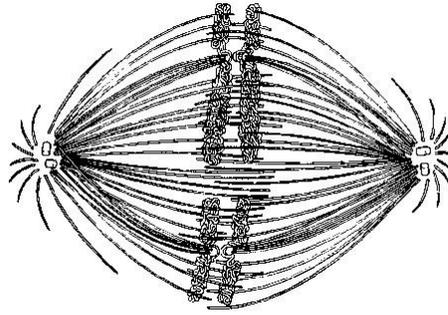


Figure 12.2

- 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) G₀
 - C) M
 - D) G₂
 - E) G₁
- 11) DNA is replicated at this time of the cell cycle: 11) _____
- A) G₂
 - B) M
 - C) G₁
 - D) G₀
 - E) S
- 12) Nerve and muscle cells are in this phase: 12) _____
- A) G₁
 - B) M
 - C) G₂
 - D) S
 - E) G₀
- 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