

Biology EOC Review 5
Mitosis and Cell Growth

Multiple Choice

Write the letter that best answers the question or completes the statement.

1. Binary fission
 - A. occurs when two cells collide with each other.
 - B. produces excess energy.
 - C. creates new species.
 - D. is the process by which bacteria reproduce.
2. The point at which two chromatids are attached to each other in a chromosome is called a(n)
 - F. chloroplast.
 - H. gamete.
 - G. centromere.
 - J. centriole.
3. The chromosomes in your body
 - A. exist in 23 pairs in all cells but gametes.
 - B. contain thousands of gene.
 - C. form right before cells divide.
 - D. All of the above.
4. In humans, gametes contain
 - F. 22 autosomes and 1 sex chromosome.
 - G. 1 autosome and 22 sex chromosomes.
 - H. 45 autosomes and 1 sex chromosome.
 - J. 1 autosome and 45 sex chromosomes.
5. The X and Y chromosomes are called the
 - A. extra chromosomes.
 - C. sex chromosomes.
 - B. phenotypes.
 - D. All of the above.
6. In humans, the male determines the sex of the child because males have
 - F. two X chromosomes.
 - G. one X and one Y chromosome.
 - H. two Y chromosomes.
 - J. 46 chromosomes.
7. The diploid number of chromosomes in a human skin cell is 46. the number of chromosomes found in a human ovum is
 - A. 46.
 - C. 23.
 - B. 92.
 - D. 12.5
8. A diploid cell is one that
 - F. has two homologues of each chromosome.
 - G. is designated by the symbol 2n.
 - H. has chromosomes found in pairs.
 - J. All of the above.
9. The stage of the cell cycle that occupies most of the cell's life is
 - A. G₁
 - C. G₂.
 - B. M.
 - D. S.
10. Homologous chromosomes are pairs of chromosomes containing genes that code for
 - F. different traits.
 - H. DNA.
 - G. same traits.
 - J. cytosol.
11. Which of the following shows the correct sequence of the cell cycle?
 - A. C → M → G₁ → S → G₂
 - B. S → G₁ → G₂ → M → C
 - C. G₁ → S → G₂ → M → C
 - D. None of the above
12. Cells that are not dividing remain in the
 - F. mitosis phase.
 - H. first growth phase.
 - G. synthesis phase.
 - J. cytokinesis phase.
13. During the gap 1 stage of the cell cycle, a cell
 - A. splits into two new cells.
 - B. carries out its normal functions.
 - C. duplicates its DNA.
 - D. divides its cytoplasm.
14. In which stage of the cell cycle do the nucleus and its contents divide?
 - F. synthesis
 - H. gap 1
 - G. mitosis
 - J. gap 2
15. 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.
16. The first three phases of the cell cycle are collectively known as
 - F. cellular respiration.
 - H. mitosis.
 - G. telophase.
 - J. interphase.
17. 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.
18. The cell cycle is monitored as each cell passes through
 - F. cellular respiration.
 - H. photosynthesis.
 - G. homeostasis.
 - J. checkpoints.

19. Which of the following represents the phases of mitosis in their proper sequence?

- A. prophase, metaphase, anaphase, telophase
- B. interphase, prophase, metaphase, anaphase, telophase
- C. interphase, prophase, metaphase, telophase
- D. prophase, metaphase, anaphase, telophase, cytokinesis

20. At the DNA synthesis (G_2) checkpoint, DNA replication is checked by

- F. receptor proteins.
- H. repair enzymes.
- G. electron transport chains.
- J. cell surface markers.

21. The processes of mitosis and cytokinesis produce two identical

- A. daughter cells.
- C. strands.
- B. chromosomes.
- D. chromatids.

22. During which phase of mitosis do sister chromatids separate from each other?

- F. prophase
- H. metaphase
- G. anaphase
- J. telophase

23. The phase of mitosis that is characterized by the arrangement of all chromosomes along the equator of the cell is called

- A. telophase.
- C. anaphase.
- B. metaphase.
- D. prophase.