

## Meiosis vs Mitosis Practice Questions

### Multiple Choice

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

- \_\_\_\_\_ 1. The chromosomes in your body
- exist in 23 pairs in all cells but gametes.
  - each contain thousands of genes.
  - form right before cells divide.
  - All of the above
- \_\_\_\_\_ 2. Normal human males develop from fertilized eggs containing which of the following sex chromosome combinations?
- XY
  - XX
  - XO
  - OO
- \_\_\_\_\_ 3. Homologous chromosomes are pairs of chromosomes containing genes that code for
- different traits.
  - the same traits.
  - DNA.
  - cytosol.
- \_\_\_\_\_ 4. In humans, gametes contain
- 22 autosomes and 1 sex chromosome.
  - 1 autosome and 22 sex chromosomes.
  - 45 autosomes and 1 sex chromosome.
  - 1 autosome and 45 sex chromosomes.
- \_\_\_\_\_ 5. The X and Y chromosomes are called the
- extra chromosomes.
  - phenotypes.
  - sex chromosomes.
  - All of the above
- \_\_\_\_\_ 6. How many chromosomes are in the body cells of an organism that has a haploid number of 8?
- 4
  - 8
  - 12
  - 16
- \_\_\_\_\_ 7. The diploid number of chromosomes in a human skin cell is 46. The number of chromosomes found in a human egg cell is
- 46.
  - 92.
  - 23.
  - 12.5.
- \_\_\_\_\_ 8. As a result of **mitosis**, each of the two new cells produced from the parent cell during cytokinesis
- receives a few chromosomes from the parent cell.
  - receives an exact copy of all the chromosomes present in the parent cell.
  - donates a chromosome to the parent cell.
  - receives exactly half the chromosomes from the parent cell.
- \_\_\_\_\_ 9. As a result of **meiosis**, each of the two new cells produced from the parent cell during cytokinesis
- receives a few chromosomes from the parent cell.
  - donates a chromosome to the parent cell.
  - receives an exact copy of all the chromosomes present in the parent cell.
  - receives exactly half the chromosomes from the parent cell.
- \_\_\_\_\_ 10. Separation of homologues occurs during
- mitosis.
  - meiosis I.
  - meiosis 2.
  - fertilization.

- \_\_\_ 11. The difference between anaphase of mitosis and anaphase I of meiosis is that
- the chromosomes line up at the equator in anaphase I.
  - centromeres do not exist in anaphase I.
  - chromatids do not separate at the centromere in anaphase I.
  - crossing-over occurs only in anaphase of mitosis.
- \_\_\_ 12. When crossing-over takes place, chromosomes
- mutate in the first division.
  - produce new genes.
  - decrease in number.
  - exchange corresponding segments of DNA.
- \_\_\_ 13. The exchange of segments of DNA between the members of a pair of chromosomes
- ensures that variations within a species never occur.
  - acts as a source of variations within a species.
  - always produces genetic disorders.
  - is called crossing.
- \_\_\_ 14. Crossing-over occurs
- during prophase 2.
  - during fertilization.
  - during prophase I.
  - at the centromere.
- \_\_\_ 15. Which of the following does *not* provide new genetic combinations?
- random fertilization
  - cytokinesis
  - independent assortment
  - crossing-over
- \_\_\_ 16. If an organism's diploid number is 12, its haploid number is
- 12.
  - 6.
  - 24.
  - 3.
- \_\_\_ 17. Gametes are produced by the process of
- mitosis.
  - meiosis.
  - crossing-over.
  - replication.
- \_\_\_ 18. Chromosomes form tetrads during
- prophase I of meiosis.
  - metaphase I of meiosis.
  - interphase.
  - anaphase II of meiosis.
- \_\_\_ 19. What happens between meiosis I and meiosis II that reduces the number of chromosomes?
- Crossing-over occurs.
  - Metaphase occurs.
  - Replication occurs twice.
  - Replication does not occur.
- \_\_\_ 20. Unlike mitosis, meiosis results in the formation of
- diploid cells.
  - haploid cells.
  - 2N daughter cells.
  - body cells.
- \_\_\_ 21. Unlike mitosis, meiosis results in the formation of
- two genetically identical cells.
  - four genetically different cells.
  - four genetically identical cells.
  - two genetically different cells.
- \_\_\_ 22. Crossing-over rarely occurs in mitosis, unlike meiosis. Which of the following is the likely reason?
- Chromatids are not involved in mitosis.
  - Tetrads rarely form during mitosis.
  - A cell undergoing mitosis does not have homologous chromosomes.
  - There is no prophase during mitosis.

## Meiosis vs Mitosis Practice Questions Answer Section

### MULTIPLE CHOICE

- |     |                       |        |          |             |
|-----|-----------------------|--------|----------|-------------|
| 1.  | ANS: D                | PTS: 1 | DIF: I   | OBJ: 6.1.2  |
| 2.  | ANS: A                | PTS: 1 | DIF: I   | OBJ: 6.1.3  |
| 3.  | ANS: B                | PTS: 1 | DIF: I   | OBJ: 6.1.3  |
| 4.  | ANS: A                | PTS: 1 | DIF: II  | OBJ: 6.1.3  |
| 5.  | ANS: C                | PTS: 1 | DIF: I   | OBJ: 6.1.3  |
| 6.  | ANS: D                | PTS: 1 | DIF: I   | OBJ: 6.1.4  |
| 7.  | ANS: C                | PTS: 1 | DIF: I   | OBJ: 6.1.4  |
| 8.  | ANS: B                | PTS: 1 | DIF: II  | OBJ: 6.3.2  |
| 9.  | ANS: D                | PTS: 1 |          |             |
| 10. | ANS: B                | PTS: 1 | DIF: II  | OBJ: 7.1.1  |
| 11. | ANS: C                | PTS: 1 | DIF: III | OBJ: 7.1.1  |
| 12. | ANS: D                | PTS: 1 | DIF: II  | OBJ: 7.1.1  |
| 13. | ANS: B                | PTS: 1 | DIF: II  | OBJ: 7.1.2  |
| 14. | ANS: C                | PTS: 1 | DIF: I   | OBJ: 7.1.2  |
| 15. | ANS: B                | PTS: 1 | DIF: I   | OBJ: 7.1.2  |
| 16. | ANS: B<br>OBJ: 11.4.1 | PTS: 1 | DIF: A   | REF: p. 275 |
| 17. | ANS: B<br>OBJ: 11.4.2 | PTS: 1 | DIF: B   | REF: p. 276 |
| 18. | ANS: A<br>OBJ: 11.4.2 | PTS: 1 | DIF: A   | REF: p. 276 |
| 19. | ANS: D<br>OBJ: 11.4.2 | PTS: 1 | DIF: E   | REF: p. 277 |
| 20. | ANS: B<br>OBJ: 11.4.3 | PTS: 1 | DIF: B   | REF: p. 278 |
| 21. | ANS: B<br>OBJ: 11.4.3 | PTS: 1 | DIF: A   | REF: p. 278 |
| 22. | ANS: B<br>OBJ: 11.4.3 | PTS: 1 | DIF: E   | REF: p. 276 |