Quiz: Meiosis

Read each question. Circle the letter of the correct answer.

1. Which event is an important factor in increasing variety among sexually reproducing organisms?

A. crossing over

B. gene linkage

C. testcross

D. mitosis

2. Which phrase best describes the process of meiosis?

A. occurs in body cells

B. produces haploid gametes

C. happens only in haploid cells

D. results in genetically identical cells

3. The exchange of segments of DNA between the members of a pair of chromosomes _____.

A. is called genetic crossing

B. always produces genetic disorders

C. acts as a source of variations within a species

D. ensures that variations within a species never occur

4. Which phrase best describes the process of crossing over?

A. Pairs of sister chromatids become linked.

B. Pairs of sister chromatids exchange segments.

C. Pairs of homologous chromosomes become linked.

D. Pairs of homologous chromosomes exchange segments.

5. How is gametogenesis different in females than in males?

A. Males produce four functional sperm while females produce only one functional egg.

B. Males produce only one functional sperm while females produce four functional eggs.

C. Males produce four genetically identical sperm while females produce four genetically different eggs.

D. Males produce four genetically different sperm while females produce four genetically identical eggs.

6. Separation of homologous chromosomes occurs during _____.

A. mitosis

B. meiosis I

C. meiosis II

D. fertilization

7. When crossing over takes place, chromosomes _____.

A. decrease in number

B. produce new genes

C. mutate in the first division

D. exchange corresponding segments of DNA

8. What happens to sister chromatids in meiosis II?

A. They duplicate.

B. They are divided.

C. They do not take part.

D. They remain together.

9. In which phase of meiosis does the chromosome number change from diploid to haploid?

A. prophase I

B. anaphase I

C. prophase II

D. anaphase II

10. Which phrase best describes meiosis I?

A. fusion of sister chromatids

B. creation of two diploid cells

C. duplication of paired chromosomes

D. division of homologous chromosomes

Read each statement. Write your answer on the lines.

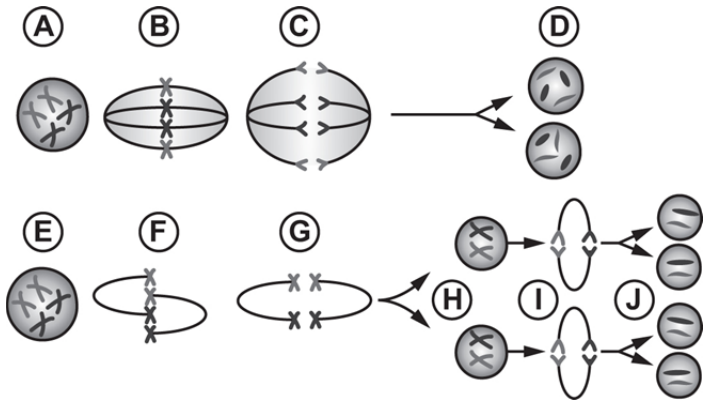
11. Contrast the chromosome number in gametes and zygotes in sexual reproduction.

12. When has genetic recombination occurred in meiosis?

13. Identify three ways in which genetic recombination results during meiosis.

14. Explain why crossing over is an important source of genetic variation.

15. Refer to the diagram.



Describe the process shown in part G of the diagram.

How does it contribute to genetic diversity in all sexually reproducing organisms?