Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_score: /18   
**Meiosis TEST**

1. **A cow has 30 chromosomes in each of its cells.**

\_\_\_\_\_\_\_\_\_\_\_\_\_ a. How many homologous pairs of chromosomes does a cow have?

\_\_\_\_\_\_\_\_\_\_\_\_\_ b. At the end of meiosis I, how many chromosomes does each daughter cell have?

\_\_\_\_\_\_\_\_\_\_\_\_\_ c. Is this diploid or haploid?

\_\_\_\_\_\_\_\_\_\_\_\_\_ d. At the end of Meiosis II, how many cells are there?

\_\_\_\_\_\_\_\_\_\_\_\_\_ e. How many chromosomes would each gamete contain?

1. **\_\_\_\_\_\_ Imagine an organism whose diploid chromosome number is = 24. After meiosis this organism’s gametes would contain \_\_\_\_ chromosomes but after mitosis this organism’s somatic cells would contain \_\_\_\_\_ chromosomes.** 
   1. 24, 48 C. 12, 24
   2. 24, 24 D. 24, 12
2. **\_\_\_\_\_\_A human cell ordinarily will have 23 pairs of chromosomes, for a total of 46 chromosomes.   
    After meiosis the gametes will be \_\_\_\_\_ with \_\_\_\_\_ chromosomes**
   1. diploid, 46 C. haploid, 23
   2. haploid, 46 D. diploid, 23
3. **\_\_\_\_\_\_ On one homologous chromosome you have the genes for green eyes and right handedness. On   
    the other homologous chromosome you have the genes for brown eyes and left handedness.   
    Is it possible for you to make gametes with the genes for brown eyes and right handedness?** 
   1. No, the gametes only get one of each homologous pair during meiosis.
   2. Yes, if the two homologous chromosomes exchanged DNA during crossing over.
   3. No, this would cause the cell to undergo apoptosis
   4. Yes, it doesn’t matter what chromosome the genes are on – all combinations are possible
4. **\_\_\_\_\_\_ What information could you NOT get from a picture of your chromosomes (karyotype)?**
   1. the sex of an individual C. extra chromosomes
   2. missing chromosomes D. the color of their eyes
5. **\_\_\_\_\_\_Crossing over between maternal and paternal chromosomes takes place during**
   1. prophase I C. prophase
   2. prophase II D. prophase III
6. **\_\_\_\_\_\_ The process of meiosis**
   1. begins with diploid cells and ends with haploid cells
   2. begins with haploid cells and ends with haploid cell
   3. begins with diploid cells and ends with diploid cells
   4. begins with haploid cells and ends with diploid cells
7. **\_\_\_\_\_\_Meiosis involves \_\_\_\_\_\_\_ division(s) of a nucleus.**
   1. 1 C. 2
   2. 4 D. 8
8. **\_\_\_\_\_\_ The genetic diversity created by sexual reproduction is called nature’s insurance policy   
    because \_\_\_\_\_\_**
   1. several offspring will resemble their parents very closely
   2. when the environment changes some of the offspring will have traits that allow them to survive
   3. very few of the offspring will have new traits if the environment changes
   4. many of the offspring will survive despite being duplicates of their parents
9. **\_\_\_\_\_\_ What is the importance of crossing over?**
   1. It provides extra genetic material for the daughter cells.
   2. It increases the genetic variation in the gametes
   3. it separates the homologous chromosomes
   4. it prevents nondisjunction
10. **\_\_\_\_\_\_ The purpose of meiosis is to produce \_\_\_\_\_.**
    1. diploid cells from haploid cells. C. gametes from diploid cells
    2. haploid cells from triploid cells D. somatic cells from gametes
11. **\_\_\_\_\_\_ If a gamete has more or less than the normal number of chromosomes this is most likely due to an   
     error in metaphase I or II in meiosis known as \_\_\_\_\_.**
    1. Unequal separation of chromosomes C. linkage of genes
    2. crossing over D. mutation of DNA
12. **\_\_\_\_\_\_ All the haploid cells produced by meiosis in animals are \_\_\_\_\_.**
    1. somatic cells C. zygotes
    2. karyotypes D. gametes
13. **\_\_\_\_\_\_ Imagine an organism whose 2n = 96. After meiosis this organism’s gametes  
     would contain \_\_\_\_ chromosomes.**
    1. 192 C. 48
    2. 96 D. 24

**1a. 15**

**1b 15**

**1c Haploid**

**1d 4**

**1e 15**

**2 C**

**3 C**

**4 B**

**5 D**

**6 A**

**7 A**

**8 C**

**9 B**

**10 B**

**11 C**

**12 A**

**13 D**

**14 C**