

**CCR Biology - Chapter 7 Practice Quizzes - Summer 2012****Multiple Choice**

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

- \_\_\_\_\_ 1. Most of the traits expressed in a person's phenotype are determined by
- Y chromosomes.
  - X chromosome inactivation.
  - autosomal genes.
  - sex chromosomes.
- \_\_\_\_\_ 2. Which of the following phrases is true of X chromosome inactivation?
- affects fewer genes than Y chromosome expression
  - occurs in cells of female mammals
  - disables some chromosomes in cells of male mammals
  - determines phenotype in male mammals
- \_\_\_\_\_ 3. A person who is heterozygous for a disorder caused by recessive alleles is a carrier of the disorder. A carrier is a person who
- does not have the disorder but can pass it on to offspring.
  - can develop the disorder later in life but cannot pass it on.
  - has a dominant normal allele that has been inactivated.
  - passes the disorder to offspring on the Y chromosome only.
- \_\_\_\_\_ 4. Genes that are located on sex chromosomes are called
- alleles.
  - recessive.
  - XY.
  - sex-linked.
- \_\_\_\_\_ 5. Which statement is true of a sex-linked recessive gene?
- In an XY male, this recessive gene is always expressed.
  - In an XY male, one copy is always inactivated.
  - In an XX female, only one copy is needed for expression.
  - In an XX female, it is always passed to offspring.
- \_\_\_\_\_ 6. Unlike the traits studied by Mendel, most traits are produced by genes with
- sex linkage.
  - only one allele.
  - dominance and recessiveness.
  - multiple alleles.
- \_\_\_\_\_ 7. A plant that is homozygous for red flowers is crossed with a plant that is homozygous for white flowers. In the case of incomplete dominance, the flowers of the offspring will be
- red and white.
  - white only.
  - pink only.
  - red only.

- \_\_\_\_\_ 8. In the case of codominant alleles, a plant that is homozygous for red flowers that is crossed with a plant that is homozygous for white flowers will produce flowers that are
- red and white spotted.
  - completely white.
  - dark pink all over.
  - pink and red.
- \_\_\_\_\_ 9. Eye color, hair color, and skin color are polygenic traits. Polygenic traits result from
- recessive genes.
  - many genes.
  - codominant genes.
  - epistatic genes.
- \_\_\_\_\_ 10. Identical twins who are raised apart can have differences that last a lifetime. This is evidence that
- phenotype differences happen through epistatic genes.
  - genotype can change over time.
  - environment and genotype interact to affect phenotype.
  - codominance affects genotype.
- \_\_\_\_\_ 11. Which conclusion is a result of Thomas Hunt Morgan's research with fruit flies?
- Chromosome assortment during meiosis is not random.
  - Linked genes are located on the same chromosome.
  - The physical distance between genes can be determined.
  - Genes recombine independently during mitosis.
- \_\_\_\_\_ 12. Which observation of Morgan's is evidence that crossing over occurs?
- Linked genes are sometimes inherited separately.
  - Some dominant traits are always inherited together.
  - Inheritance of gene combinations is not random.
  - Fruit flies have only two groups of linked traits.
- \_\_\_\_\_ 13. Two genes on a given chromosome that are most likely to be inherited together are
- 6.8 map units apart.
  - 10 map units apart.
  - 2 map units apart.
  - 18.5 map units apart.
- \_\_\_\_\_ 14. Suppose that the distance between two genes on a linkage map is 7 units. The cross-over frequency between the two genes is
- 0.7%
  - 7%
  - 70%
  - 700%
- \_\_\_\_\_ 15. Suppose the cross-over percentages for three gene pairs are: A to B = 9.5%, B to C = 14.5%, and A to C = 5%. Which of the following sequences could represent the order of these genes on a chromosome?
- CAB
  - ABC
  - CBA
  - ACB

- \_\_\_\_\_ 16. Much of what we know about single-gene traits in humans is the result of studying
- Britain's Royal Family.
  - polygenic traits.
  - genetic disorders.
  - hemophilia.
- \_\_\_\_\_ 17. What is the main difference between the carrier of a sex-linked disorder and the carrier of an autosomal disorder?
- Female carriers of an autosomal disorder pass the disorder to all offspring.
  - All carriers of autosomal disorders have two dominant alleles for the disorder.
  - The carrier of a sex-linked disorder is always female but does not have the disorder.
  - Male carriers of a sex-linked disorder always have mothers who had the disorder.
- \_\_\_\_\_ 18. A chart that traces the phenotypes and genotypes within a family is called a
- pedigree.
  - karyotype.
  - Punnett square.
  - chromosome map.
- \_\_\_\_\_ 19. A genetic disorder is traced within a family. The disorder occurs mostly in males. The gene for this disorder is most likely
- not sex-linked.
  - on the X chromosome.
  - an autosomal allele.
  - carried only by males.
- \_\_\_\_\_ 20. Which of the following types of genetic information can be identified easily with a karyotype?
- homologous chromosomes
  - dominant traits
  - exact locations of genes
  - recessive alleles

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### Answer Section

#### MULTIPLE CHOICE

1. ANS: C                      PTS: 1                      REF: act0976aaf18007e109\_80  
STA: KY 9-12.4.1.2 | KY 9-12.4.1.4 | KY 9-12.4.2.1 | KY 9-12.4.2.3  
TOP: 7.1 Quiz              NOT: 978-0-618-78317-5
2. ANS: B                      PTS: 1                      REF: act0976aaf18007e109\_88  
STA: KY 9-12.4.1.4                      TOP: 7.1 Quiz              NOT: 978-0-618-78317-5
3. ANS: A                      PTS: 1                      REF: act0976aaf18007e109\_96  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.1 Quiz              NOT: 978-0-618-78317-5
4. ANS: D                      PTS: 1                      REF: act0976aaf18007e109\_104  
STA: KY 9-12.4.1.4                      TOP: 7.1 Quiz              NOT: 978-0-618-78317-5
5. ANS: A                      PTS: 1                      REF: act0976aaf18007e109\_112  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.1 Quiz              NOT: 978-0-618-78317-5
6. ANS: D                      PTS: 1                      REF: act0976aaf18007e10b\_81  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5 | KY 9-12.4.2.3 | KY 9-12.4.2.5  
TOP: 7.2 Quiz              NOT: 978-0-618-78317-5
7. ANS: C                      PTS: 1                      REF: act0976aaf18007e10b\_89  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.2 Quiz              NOT: 978-0-618-78317-5
8. ANS: A                      PTS: 1                      REF: act0976aaf18007e10b\_97  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.2 Quiz              NOT: 978-0-618-78317-5
9. ANS: B                      PTS: 1                      REF: act0976aaf18007e10b\_105  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.2 Quiz              NOT: 978-0-618-78317-5
10. ANS: C                      PTS: 1                      REF: act0976aaf18007e10b\_113  
STA: KY 9-12.SC-HS-3.4.6                      TOP: 7.2 Quiz              NOT: 978-0-618-78317-5
11. ANS: B                      PTS: 1                      REF: act0976aaf18007e10d\_81  
STA: KY 9-12.1.2.15 | KY 9-12.7.2.3                      TOP: 7.3 Quiz              NOT: 978-0-618-78317-5
12. ANS: A                      PTS: 1                      REF: act0976aaf18007e10d\_89  
TOP: 7.3 Quiz              NOT: 978-0-618-78317-5
13. ANS: C                      PTS: 1                      REF: act0976aaf18007e10d\_97  
STA: KY 9-12.4.1.4                      TOP: 7.3 Quiz              NOT: 978-0-618-78317-5
14. ANS: B                      PTS: 1                      REF: act0976aaf18007e10d\_105  
STA: KY 9-12.4.1.4                      TOP: 7.3 Quiz              NOT: 978-0-618-78317-5
15. ANS: A                      PTS: 1                      REF: act0976aaf18007e10d\_113  
STA: KY 9-12.4.1.4                      TOP: 7.3 Quiz              NOT: 978-0-618-78317-5
16. ANS: C                      PTS: 1                      REF: act0976aaf18007e10f\_33  
TOP: 7.4 Quiz              NOT: 978-0-618-78317-5
17. ANS: C                      PTS: 1                      REF: act0976aaf18007e10f\_41  
STA: KY 9-12.4.1.4                      TOP: 7.4 Quiz              NOT: 978-0-618-78317-5
18. ANS: A                      PTS: 1                      REF: act0976aaf18007e10f\_49  
STA: KY 9-12.4.1.4 | KY 9-12.4.2.4                      TOP: 7.4 Quiz              NOT: 978-0-618-78317-5
19. ANS: B                      PTS: 1                      REF: act0976aaf18007e10f\_57  
STA: KY 9-12.4.1.4 | KY 9-12.4.1.5                      TOP: 7.4 Quiz              NOT: 978-0-618-78317-5

20. ANS: A PTS: 1 REF: act0976aaf18007e10f\_65  
STA: KY 9-12.4.1.2 | KY 9-12.4.2.1 | KY 9-12.4.2.3 TOP: 7.4 Quiz  
NOT: 978-0-618-78317-5

A   8.              C   16.

  C   1.              B   9.              C   17.

  B   2.              C   10.              A   18.

  A   3.              B   11.              B   19.

  D   4.              A   12.              A   20.

  A   5.              C   13.

  D   6.              B   14.

  C   7.              A   15.