

- 1 Which of these traits is controlled by a gene with multiple alleles?
- A straight hairline
  - B smile dimples
  - C widow's peak
  - D blood type
- 2 Which combination of sex chromosomes results in a male human being?
- A XX
  - B YY
  - C XY
  - D either XX or YY
- 3 How does a geneticist use pedigrees?
- A to create genetic crosses
  - B to replicate identical strings of DNA
  - C to prove that sex-linked traits are caused by codominant alleles
  - D to trace the inheritance of traits in humans
- 4 Genetic disorders are caused by
- A pedigrees.
  - B DNA mutations or changes in chromosomes.
  - C dominant alleles only.
  - D recessive alleles only.
- 5 Cloning results in two organisms that are
- A both adult mammals.
  - B produced from cuttings.
  - C genetically similar.
  - D genetically identical.

- 6 Which of these is an example of the benefits of genetic engineering?
- A cross-breeding to create disease-resistant crops
  - B creating human insulin to treat people with diabetes
  - C analyzing karyotypes and pedigree charts
  - D growing a new plant from a cutting
- 7 What was the purpose of the Human Genome Project?
- A to identify the DNA sequence of every gene in the human genome
  - B to clone every gene on a single chromosome in human DNA
  - C to cure genetic diseases
  - D to inbreed the best genes on every chromosome in human DNA
- 8 What is a genome?
- A all the cells produced during meiosis
  - B all the plasmids produced from inserting DNA into a cell
  - C all the DNA in one cell of an organism
  - D all the karyotypes in a cell
- 9 Sex-linked genes are genes on
- A the X chromosome only.
  - B the Y chromosome only.
  - C the X and Y chromosomes.
  - D all 23 pairs of chromosomes.
- 10 A carrier is a person who has
- A one recessive and one dominant allele for a trait.
  - B two recessive alleles for a trait.
  - C two dominant alleles for a trait.
  - D more than two alleles for a trait.

- 11 What are multiple alleles?
- A more than two genes that control a trait
  - B three or more forms of a gene that code for a single trait
  - C three or more chromosomes that determine a trait
  - D more than two codominant genes in a chromosome
- 12 Why does height in humans have such a wide variety of phenotypes?
- A Height is controlled by at least four genes.
  - B The gene for height has only two alleles.
  - C Height is controlled by sex-linked genes.
  - D Height is controlled by a recessive allele.
- 13 Why are sex-linked traits more common in males than in females?
- A In males, all alleles on the X chromosome are dominant.
  - B In males, all alleles on the Y chromosome are recessive.
  - C In males, there is usually no matching allele on the Y chromosome to mask the allele on the X chromosome.
  - D In males, any allele on the Y chromosome will be codominant with the matching allele on the X chromosome.
- 14 What is a pedigree?
- A a chart that tracks which members of a family have a particular trait
  - B a geneticist who studies the inheritance of traits in humans
  - C a picture of all of the chromosomes in a cell
  - D an allele passed from parent to child on a sex chromosome
- 15 Which genetic disorder causes the body to produce unusually thick mucus in the lungs and intestines?
- A hemophilia
  - B Down syndrome
  - C cystic fibrosis
  - D sickle-cell disease

- 16 What is a karyotype?
- A a sex-linked genetic disorder
  - B a picture of a baby before it is born
  - C a picture of all the chromosomes in a person's cell
  - D fluid that surrounds a baby before it is born
- 17 What would be the best way to predict the probability of a baby having cystic fibrosis?
- A by studying the parents' karyotypes
  - B by studying the family's pedigree chart
  - C by exploring new methods of genetic engineering
  - D by determining whether the parents have codominant alleles
- 18 In an attempt to produce a potato that tastes good and also resists disease, plant breeders crossed a potato variety that tastes good with a variety that resists disease. This technique is an example of
- A genetic engineering.
  - B inbreeding.
  - C hybridization.
  - D cloning.
- 19 What must occur for a girl to be colorblind?
- A Each parent must be colorblind.
  - B Each parent must have the dominant allele for colorblindness.
  - C Each parent must have the recessive allele for colorblindness.
  - D Each parent must have two codominant alleles for colorblindness.
- 20 Hemophilia is caused by a(n)
- A recessive allele on the X chromosome.
  - B extra chromosome.
  - C dominant allele.
  - D codominant allele.

- 21 Down syndrome most often occurs when
- A a person inherits a recessive allele.
  - B chromosomes fail to separate properly during meiosis.
  - C sickle-shaped cells become stuck in blood vessels.
  - D blood fails to clot properly.
- 22 What genetic disorder results in abnormally shaped blood cells?
- A hemophilia
  - B Down syndrome
  - C cystic fibrosis
  - D sickle-cell disease
- 23 Adults with Down syndrome can often find work because they have received
- A folic acid.
  - B physical therapy.
  - C education and job training.
  - D genetic counseling.