

1 What did Gregor Mendel do to study different characteristics in his genetics experiments?

- A He studied only asexual plants.
- B He studied only tall and short pea plants.
- C He cross-pollinated plants.
- D He cross-pollinated both plants and animals.

2 What does the notation  $TT$  mean to geneticists?

- A two dominant alleles
- B heterozygous alleles
- C at least one dominant allele
- D one dominant and one recessive allele

3 What is the probability of producing a tall pea plant from a genetic cross between two hybrid tall pea plants?

- A one in four
- B two in four
- C three in four
- D four in four

4 What does a Punnett square show?

- A all the possible outcomes of a genetic cross
- B only the dominant alleles in a genetic cross
- C only the recessive alleles in a genetic cross
- D all of Mendel's discoveries about genetic crosses

5 A purebred chicken with white feathers is crossed with a purebred chicken that has black feathers. Each of their offspring has both black and white feathers. Why does this happen?

- A Both alleles for feather color are dominant.
- B Both alleles for feather color are recessive.
- C The alleles for feather color are neither dominant nor recessive.
- D Several alleles work together to determine the trait.

6 What is the chromosome theory of inheritance?

- A Chromosomes are carried from parents to offspring on hybrids.
- B Genes are carried from parents to offspring on chromosomes.
- C Hybrid pairs of chromosomes combine to form offspring.
- D Codominant genes combine to form new hybrids.

7 What happens during meiosis?

- A Two sex cells combine.
- B Chromosome pairs separate and are distributed into new sex cells.
- C Each sex cell copies itself to form four new chromosomes.
- D Chromosome pairs remain together when new sex cells are formed.

8 Which term refers to physical characteristics that are studied in genetics?

- A traits
- B offspring
- C generations
- D hybrids

9 An organism's genotype is its

- A genetic makeup.
- B feather color.
- C physical appearance.
- D stem height.

10 Which of the following traits is influenced by both inheritance and environmental factors?

- A the ability to sing well
- B the ability to cough
- C natural hair color
- D dyed hair color

- 11 In Mendel's experiments, what proportion of the plants in the  $F_2$  generation had a trait that had been absent in the  $F_1$  generation?
- A none
  - B one fourth
  - C half
  - D three fourths
- 12 Factors that control traits are called
- A genes.
  - B purebreds.
  - C recessives.
  - D parents.
- 13 Scientists call an organism that has two different alleles for a trait a
- A hybrid.
  - B dominant.
  - C purebred.
  - D factor.
- 14 What does the notation  $Tt$  mean to geneticists?
- A two dominant alleles
  - B two recessive alleles
  - C homozygous alleles
  - D one dominant allele and one recessive allele
- 15 What is probability?
- A the actual results from a series of events
  - B a number that describes how likely it is that an event will occur
  - C the way the results of one event affect the next event
  - D the number of times a coin lands heads up

- 16 If a homozygous black guinea pig ( $BB$ ) is crossed with a homozygous white guinea pig ( $bb$ ), what is the probability that an offspring will have black fur?
- A 25 percent
  - B 50 percent
  - C 75 percent
  - D 100 percent
- 17 An organism's physical appearance is its
- A genotype.
  - B phenotype.
  - C dominance.
  - D allele.
- 18 Walter Sutton discovered that the sex cells of grasshoppers have
- A 12 times the number of chromosomes found in the body cells.
  - B twice the number of chromosomes found in the body cells.
  - C the same number of chromosomes found in the body cells.
  - D half the number of chromosomes found in the body cells.
- 19 When sex cells combine to produce offspring, each sex cell will contribute
- A one fourth the number of chromosomes in body cells.
  - B half the number of chromosomes in body cells.
  - C the normal number of chromosomes in body cells.
  - D twice the number of chromosomes in body cells.
- 20 The different forms of a gene are called
- A alleles.
  - B factors.
  - C masks.
  - D traits.

21 An organism that has two identical alleles for a trait is

- A a phenotype.
- B tall.
- C homozygous.
- D heterozygous.

22 A heterozygous organism has

- A three different alleles for a trait.
- B two identical alleles for a trait.
- C only one allele for a trait.
- D two different alleles for a trait.

23 Chromosomes are made up of

- A one pair of alleles.
- B a phenotype and a genotype.
- C male and female sex cells.
- D many genes joined together.