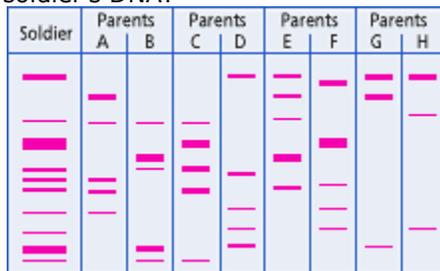


Chapter 13: Genetic Technology

1. What is a cultivar?
 - a. guinea pigs with black hair represented by the dominant B allele
 - b. two closely related species of plants
 - c. cows that produce three times more milk than they did 50 years ago
 - d. the offspring of parents who each exhibit different forms of a trait

2. Look at the DNA fingerprint pattern shown below. Which pair of parents' DNA matched the soldier's DNA?



- a. Parents G and H
 - b. Parents C and D
 - c. Parents A and B
 - d. Parents E and F
3. Which of these statements is NOT true?
 - a. If DNA from fetal cells are examined and shown to have the mutation associated with a disorder, the fetus will develop the disorder.
 - b. Forensic analysts called crime lab technicians perform autopsies to determine the cause of death.
 - c. One important outcome of the human genome project is the diagnosis of genetic disorders.
 - d. Gel electrophoresis is used to analyze DNA as part of the analysis of genetic disorders.
 4. Which of these is the first step in the process to produce a transgenic organism?
 - a. attach the DNA fragment to a carrier
 - b. clone double-stranded DNA fragments using PCR
 - c. isolate the foreign DNA fragment
 - d. transfer the DNA fragment into the host organism

5. Which of these is NOT an example of the effectiveness of selective breeding?
- a. stronger offspring plants than the parent plants
 - b. more milk production in cows
 - c. selecting the smallest, least-juiciest berries
 - d. choosing eggs from the best egg-laying hen for hatching
6. Which process is used to insert normal genes into human cells to correct disorders?
- a. forensic analysis
 - b. sequencing the human genome
 - c. live vector vaccines
 - d. gene therapy
7. Which part of the human body are bone marrow cells removed from to perform SCID gene therapy?
- a. hip bone
 - b. skull
 - c. lung
 - d. wrist
8. _____ occurs when two closely related individuals mate.
- a. Cultivars
 - b. Inbreeding
 - c. Test crossing
 - d. Cloning
9. If a known test dog is homozygous recessive for a trait (dd), and the unknown test dog is homozygous dominant for a trait (DD), what percentage of the offspring will be homozygous recessive?

Homozygous x Homozygous

	<i>DD</i>	<i>dd</i>
	<i>d</i>	<i>d</i>
<i>D</i>	<i>Dd</i>	<i>Dd</i>
<i>D</i>	<i>Dd</i>	<i>Dd</i>

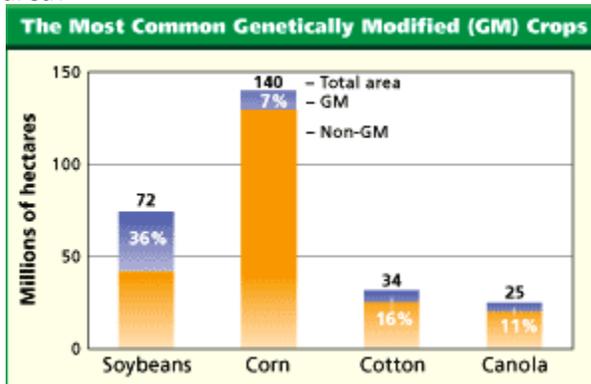
Offspring: all dominant

- a. 100%
- b. 50%
- c. 25%
- d. 0%

10. What is a hybrid plant?

- a. the process of selecting seeds from the largest of a cultivar of plants
- b. a cross between an individual of unknown genotype with an individual of a known genotype
- c. offspring that are heterozygous
- d. the offspring of parents that have different forms of a trait

11. Which of these crops has the smallest percentage of genetically modified crops for its total area?



- a. corn
- b. cotton
- c. canola
- d. soybeans

12. A small ring of DNA found in a bacterial cell is called _____.

- a. gel electrophoresis
- b. PCR
- c. a palindrome
- d. a plasmid

13. Using _____, cloning of millions of copies of DNA fragments can happen in a few hours.

- a. linkage mapping
- b. gene therapy
- c. polymerase chain reactions
- d. DNA fingerprinting

14. Which of these animals is NOT typically used for transgenic studies?

- a. mice
- b. roundworms
- c. frogs
- d. fruit flies

15. _____ are bacterial proteins that have the ability to cut both strands of the DNA molecule at a specific nucleotide sequence.

- a. Vectors
- b. Transgenic animals
- c. Restriction enzymes
- d. Clones