


Multiple-choice test

Chapter 18: Inheritance

Click on the correct answer to each question.

- 1 From where does a baby boy get his sex chromosomes?
 - A an X chromosome from his father and an X chromosome from his mother
 - B an X chromosome from his mother and a Y chromosome from his father
 - C a Y chromosome from his mother and an X chromosome from his father
 - D a Y chromosome from his mother and a Y chromosome from his father

- 2 Two animals with genotypes Aa were mated. Allele A gives black hair and allele a gives white hair. What can we predict about the offspring?
 - A The ratio of black-haired to white-haired offspring will probably be about 3:1.
 - B There will be no offspring with white hair, because allele A is dominant.
 - C They will have three offspring with black hair and one with white hair.
 - D They will have three times as many offspring with genotype AA as with genotype aa.

-  3 When does meiosis take place?
 - A during asexual reproduction
 - B during growth
 - C when gametes are being produced
 - D when tissues need to be repaired

- 4 In a species of plant, the allele for hairy leaves, H, is dominant to the allele for smooth leaves, h.
Two plants were crossed, and the resulting seeds grown. Half of the new plants had hairy leaves and half had smooth leaves.
What were the genotypes of the original two plants?

A hh and hh
B Hh and hh
C Hh and Hh
D Hh and HH

- 5 What is a stem cell?

A a cell found in a plant stem
B a cell that has differentiated into a specialised cell
C a cell that is able to form different kinds of specialised cells
D a gamete

- 6 What is a chromosome?

A a length of DNA, made up of many genes
B a circle of protein, made up of DNA
C a length of genes, made up of protein
D a circle of DNA, containing RNA

- 7 Haemophilia is a sex-linked condition in which blood does not clot properly. The allele that causes haemophilia, h, is a recessive allele that is found on the X chromosome.
What is the correct way to show this as a symbol when constructing a genetic diagram?

A Xh
B hX
C X^h
D X_h

- 8 A man whose blood clots normally marries a woman who is a carrier for haemophilia.
What are the chances that their first child will be a boy with haemophilia?

A There is no chance.
B 1 in 4
C 1 in 3
D 1 in 2

- S** 9 Which statement about DNA and protein synthesis is correct?
- A** A DNA molecule is made up of a sequence of amino acids, which specifies the sequence of amino acids to be linked together to make a protein molecule.
 - B** A DNA molecule is made up of a sequence of amino acids, which specifies the sequence of bases to be linked together to make a protein molecule.
 - C** A DNA molecule is made up of a sequence of bases, which specifies the sequence of amino acids to be linked together to make a protein molecule.
 - D** A DNA molecule is made up of a sequence of bases, which specifies the sequence of bases to be linked together to make a protein molecule.
- 10 In which part of a cell are messenger RNA (mRNA) molecules formed?
- A** in the cell membrane
 - B** in the cytoplasm
 - C** in the nucleus
 - D** on a ribosome