

Multiple-choice test

Chapter 19: Variation and natural selection

Click on the correct answer to each question.

1 Which is an example of discontinuous variation?

- A blood groups in humans
- B body mass in cats
- C leaf length in grass plants
- D shoulder height in horses

2 Which is an example of continuous variation?

- A height
- B mutation
- C sex
- D tongue rolling

S 3 What causes continuous variation?

- A a combination of genes and the environment
- B environment only
- C genes only
- D mutation

4 How are new alleles formed?

- A by fertilisation
- B by meiosis
- C by mitosis
- D by mutation

5 What is a xerophyte?

- A a plant adapted to live in dry conditions
- B a plant adapted to live in wet conditions
- C a plant that only reproduces asexually
- D a plant that drops its leaves in winter

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- 6 What could be an adaptation of a hydrophyte?
- A leaf stalks containing air spaces, to help leaves to float
 - B deep roots to seek out water
 - C leaves with a small surface area, to reduce transpiration
 - D thick cuticles on the leaves, to reduce water loss
- 7 Why does sickle cell anaemia tend to be most common in areas where malaria is also present?
- A Having malaria makes you immune to sickle cell anaemia.
 - B The mosquitoes that transmit malaria also carry sickle cell anaemia.
 - C The pathogen that causes malaria causes mutation of the sickle cell allele.
 - D People who have one copy of the sickle cell allele are less likely to die from malaria.
- 8 Two people who are carriers for the sickle-cell allele have children.
What is the chance that their second child will have sickle cell anaemia?
- A There is no chance.
 - B It will definitely have sickle cell anaemia.
 - C 1 in 4
 - D 1 in 3
- 9 Populations of bacteria that are resistant to an antibiotic often arise when the antibiotic has been used for some time.
How does this happen?
- A Antibiotics make bacteria breed faster, so they mutate more often.
 - B Any bacteria that happen to have a gene conferring resistance are more likely to survive and breed.
 - C Bacteria mutate in order to become resistant to the antibiotic.
 - D The bacteria learn to handle the antibiotic.
- 10 How does artificial selection differ from natural selection?
- A Artificial selection is done by humans, but natural selection happens without human intervention.
 - B Artificial selection involves genetic engineering, but natural selection does not.
 - C Natural selection involves mutation, but artificial selection does not.
 - D Natural selection happens over many generations, but artificial selection takes only one generation.