1. Which is an example of genetic variation?

   ☐ a suntan

   ☐ a scar

   ☐ blood group

   ☐ a learned language

2. Why did finches with deeper beaks survive the 1977 drought?

   ☐ They grew deeper beaks during the drought

   ☐ They could crack the large, hard seeds that were left

   ☐ They ate insects only

   ☐ They flew to another island

3. Antibiotic resistance evolves because:

   ☐ antibiotics make bacteria stronger

   ☐ resistant bacteria survive and multiply while others die

   ☐ bacteria stop reproducing

   ☐ bacteria decide to resist

4. Selective breeding means choosing:

   ☐ never to breed the best animals

   ☐ the weakest individuals to protect them

   ☐ random parents from a large population

   ☐ parents with desired features to breed together

5. Which shows continuous variation?

   ☐ blood group

   ☐ eye colour categories

   ☐ tongue rolling

   ☐ height

6. Natural selection needs variation in a population.

   ☐ True ☐ False

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☐ True ☐ False

8. Which are uses of selective breeding? (Select all that apply.)

   ☐ cows that produce more milk

   ☐ disease-resistant plants

   ☐ wild animals untouched by humans

   ☐ crops with higher yield

   Tick every correct option.

9. Which create genetic variation? (Select all that apply.)

   ☐ eating well

   ☐ fertilisation

   ☐ meiosis

   ☐ mutations

   Tick every correct option.

10. Which features reduce water loss in xerophytes?

    ☐ Rolled leaves with sunken stomata

    ☐ Large, thin leaves

    ☐ Spines instead of leaves

    ☐ Thick waxy cuticle

    Tick every correct option.

1. **blood group**

   Blood group is determined by genes; the others are environmental.

2. **They could crack the large, hard seeds that were left**

   The next generation had deeper beaks.

3. **resistant bacteria survive and multiply while others die**

   Selection favours the already-resistant bacteria.

4. **parents with desired features to breed together**

   Humans pick the parents with the wanted trait.

5. **height**

   Height varies over a continuous range.

6. **True**

   Otherwise all individuals are equally suited.

7. **False**

   False. Variation arises randomly, mainly through mutation; organisms do not choose to adapt. Natural selection then favours the helpful variations.

8. **cows that produce more milk; disease-resistant plants; crops with higher yield**

   The first three are selective breeding; the last is not.

9. **fertilisation; meiosis; mutations**

   Meiosis, fertilisation and mutations create variation; diet is environmental.

10. **Rolled leaves with sunken stomata; Spines instead of leaves; Thick waxy cuticle**

    Less surface and more trapped humid air.

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