1. Natural selection needs **variation** in a population, which means…

   ☐ individuals differ from one another

   ☐ there is only one individual

   ☐ every individual is identical

   ☐ no one reproduces

2. In biology, an organism's **fitness** measures its…

   ☐ reproductive success

   ☐ physical strength

   ☐ running speed

   ☐ body size

3. In **artificial selection**, who decides which individuals reproduce?

   ☐ predators

   ☐ no one

   ☐ the environment

   ☐ humans

4. A **gene pool** is…

   ☐ a type of cell that stores genes

   ☐ all the alleles present in a population

   ☐ a single gene in one individual

   ☐ all the genes in one chromosome

5. A population in **Hardy-Weinberg equilibrium** is one that is…

   ☐ made of one individual

   ☐ about to go extinct

   ☐ not evolving

   ☐ evolving very quickly

6. Species that share a more distant common ancestor are more closely related.

   ☐ True ☐ False

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☐ True ☐ False

8. The system of naming and classifying organisms into ranks is called _____.

   _____

9. Speciation caused by a geographic barrier splitting a population is called _____ speciation.

   _____

10. Life is thought to have built up gradually: small molecules, then polymers, then cells.

    ☐ True ☐ False

1. **individuals differ from one another**

   Variation means individuals differ; selection can only act if there are differences to choose between.

2. **reproductive success**

   Fitness is reproductive success – leaving more surviving offspring – not just physical strength.

3. **humans**

   In **artificial selection**, humans choose which individuals breed – also called **selective breeding**.

4. **all the alleles present in a population**

   A **gene pool** is the whole collection of alleles in a **population** at a given time.

5. **not evolving**

   In **Hardy-Weinberg equilibrium**, allele frequencies do not change – the population is *not* evolving.

6. **False**

   False. The more recent the common ancestor, the closer the relationship.

7. **False**

   False. Each use kills susceptible bacteria and leaves resistant ones to multiply, so overuse speeds up the evolution of resistance.

8. **taxonomy**

   Taxonomy classifies life into nested ranks, from domain down to species.

9. **allopatric**

   Allopatric speciation happens when a physical barrier – like a river – separates a population.

10. **True**

    The steps build up: simple molecules, then larger polymers, then membrane-enclosed self-copying cells.

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