Module 16: Evolution of Populations (Microevolution)

1. If a population's allele frequencies change from 50% A / 50% a to 90% A / 10% a, has evolution occurred?
2. What does the Hardy-Weinberg principle describe?
3. List the five conditions required for equilibrium. Are these conditions common in nature?
4. Define genetic drift. Does it affect large or small populations more strongly?
5. Distinguish the Bottleneck Effect from the Founder Effect.
6. Sketch graphs representing:
7. Directional selection
8. Stabilizing selection
9. Disruptive selection
10. Provide a real-world example of each.
11. Sickle cell disease is recessive and often lethal. Why is the allele common in malaria-endemic regions?
12. How does this demonstrate that fitness is environment-dependent?
13. Peacocks have elaborate tails that increase predation risk. How can natural selection permit this trait?
14. Two deer populations are separated by a mountain. A tunnel allows interbreeding.
15. Will the populations become more similar or more different? What is the effect on speciation potential?