AP Biology Name

Evolution Review Questions Date

1. Which of the following was most responsible for ending chemical evolution?

a) Natural selection b) Heterotrophic prokaryotes c) Photosynthesis

d) Viruses e) The absence of oxygen in the atmosphere

2. Which of the following generates the formation of adaptations?

a) genetic drift b) mutations c) gene flow

d) sexual reproduction e) natural selection

3. The B blood-type allele probably originated in Asia and subsequently spread to Europe and other regions of the world. This is an example of:

a) artificial selection b) natural selection c) genetic drift

d) gene flow e) sexual reproduction

4. The appearance of a new mutation is

a) a random event b) the result of natural selection c) the result of artificial selection

d) the result of sexual reproduction e) usually a beneficial event

5. Which of the following is an example of sexual selection?

a) Dark-colored peppered moths in London at the beginning of the Industrial Revolution

b) the mane of a lion

c) Insecticide resistance in insects

d) Darwin’s finches in the Galapagos Islands

e) The ability of certain insects to avoid harm when consuming toxic plants.

6. A population consists of 9% white sheep and 91% black sheep. What is the frequency of the black wool-allele if the black-wool allele is dominant and the white-wool allele is recessive?

a) 0.09 b) 0.3 c) 0.42 d) 0.49 e) 0.7

7. After test-cross experiments, it was determined that the frequencies of homozygous dominant, heterozygous, and homozygous recessive individuals for a particular trait were 32%, 64%, and 4% respectively. The dominant and recessive allele frequencies

a) are 0.2 and 0.8, respectively

b) are 0.32 and 0.68, respectively

c) are 0.36, and 0.64, respectively

d) are .32 and 1 - .32, respectively

e) cannot be determined because the population is not in Hardy-Weinberg equilibrium

8. *Cepea nemoralis* is a land snail. Individual snails have shells with zero to five dark bands on a yellow, pink, or dark brown background. The various shell patterns could have occurred by all of the following EXCEPT:

a) convergent evolution b) natural selection c) a balance polymorphism

d) chance e) mutations

9. All of the following are homologous structures EXCEPT a

a) bat wing b) bird wing c)butterfly wing d) human arm e) penguin flipper

Questions 10-14

Use the following key for the next five questions. Each answer in the key may be used once, more than once, or not at all.

a) Bottleneck d) Sexual reproduction

b) Adaptive radiation e) Sympatric speciation

c) Directional selection

10. Because of human predation, the sizes and genetic variation in populations of most whale species are declining.

11. Progeny possess new combinations of alleles every generation.

12. Many strains of *Mycobacterium tuberculosis*, the bacterium that causes tuberculosis, are resistant to standard drug therapy.

13. There are more than 750,000 named species of insects inhabiting a wide range of habitats.

14. A recently introduced species of seed-eating birds occupies an island where small and large seeds are available. Beak size in the bird population varies from small to large, allowing some birds to be more successful at eating small seeds, while others are more successful at eating large seeds. Birds with intermediate beak size must exert additional effort to eat seeds.

15. All of the following are examples of evolution EXCEPT:

a) mutations in an individual

b) changes in an allele frequency in a population

c) changes in an allele frequency in a species

d) divergence of a species into two species

e) adaptive radiation