NAME _____   Biology Ch 14 Practice Test   4/01/09

Matching

A. gene pool   E. homologous structures
B. evolution   F. vestigial structures
C. natural selection   G. gene flow
D. artificial selection   H. adaptation

_____ 1. inherited characteristic that improves survival and reproduction

_____ 2. trace or visible characteristics of a species that are no longer important to it

_____ 3. all of the changes that have transformed life over an immense time

_____ 4. the selective breeding of domesticated plants or animals

_____ 5. all of the alleles in all of the individuals that make up a population

_____ 6. the process by which individuals with desirable traits well-suited to the environment,
        produce more offspring on average, giving them an advantage

_____ 7. an exchange of genes with another population

_____ 8. similar characteristics in species sharing a common ancestor

True (T) or False (F)?
If False, cross out part that is untrue and write it in the space under the statement.

_____ 9. Hardy-Weinberg equilibrium means that the frequency of alleles in a gene pool
        change constantly over time.

_____ 10. In genetic drift, frequencies of alleles change due to chance.

_____ 11. Both natural and artificial selection involve variation among individuals.

_____ 12. The formation of bacteria provides a chronological record of past life
        forms when organisms get trapped in sedimentary rock and then new layers form
        over older layers.

___ 13. Pesticide resistant insects are an example of artificial selection since pesticides in the
environment select in favor of those individuals that that have genes for pesticide resistance.

_____ 14. Biological fitness is the contribution that an individual makes to the gene pool of the next generation compared to the contribution of other individuals, which causes natural selection.

_____ 15. An adaptation is an inherited characteristic that decreases an organism's ability survive and reproduce in a particular environment.

_____ 16. A change in the gene pool of a population due to chance is called genetic drift.

_____ 17. During the voyage of the *Beagle*, Darwin made many observations of species living in South America.

Completion   Write a word or words to complete the statements below.

18. The economist, Thomas Malthus, thought that populations are able to grow _____ than the rate at which food and resources can increase.

19. _____ are medicines that kill or slow the growth of bacteria.

20. The geologist, Lyell, suggested that physical _____ to Earth result from processes that occur over long periods of time.

21. French naturalist, Lamarck, believed that organisms _____ to their environment.

22. Natural selection explains how bacteria have evolved that are resistant to antibiotics. While the drugs kill most of the bacteria, the resistant bacteria _____ and quickly become widespread in the population.

23. A gene _____ is the exchange of genes with another population.

Multiple Choice. Identify the letter of the choice that best completes the statement or answers the question.

_____ 24. According to Darwin's theory of natural selection, species living on Earth today descend from earlier species and _____.

    A. each new generation is then at a disadvantage.
    B. individuals that function best in their environment tend to leave the most offspring.
    C. descendents of earliest organisms never change when living in different habitats.
    D. mutations are only way organisms can change over time.
    E.

____ 25. Which of the following statements are observations or inferences on which Darwin based the theory of natural selection?

    A. Poorly adapted individuals never produce offspring.
    B. Variations among individuals exist in a population.
    C. Individuals whose inherited characteristics give them advantages produce more offspring .
    D. Species living today descended with modifications from earlier species.
    E. B and C, and D.

____ 26. Which statement below is NOT a factor that can change the gene pool without leading to adaptation?

    A. Gene flow is the exchange of genes with another population.
    B. Mutations cause a change in an organism's DNA..
    C. Genetic drift causes a change in the gene pool due to chance.
    D. Natural selection keeps organisms from reproducing.

____ 27. What do farmers look for when choosing plants or animals for breeding?

    A. mutations
    B. species that are perfect and ever-changing
    C. inherited traits that are valuable to humans
    D. traits that can be produced in a lab

_____28. The _____ (one sickle cell allele) genotype is the most helpful to people living in countries where malaria is a problem.

    A. heterozygous
    B. homozygous dominant
    C. homozygous recessive
    D. none of the above

____ 29. The Grants hypothesis about how environmental conditions led to microevolution among the finches of Daphne Major includes which ideas?

    A. natural selection happens very quickly and can cause multiple changes in finches that are very noticeable
    B. varying annual rainfall cycles changed the type of food available and average beak size varied in a corresponding pattern
    C. Darwin's theory was not in evidence many years later; therefore it was wrong
    D. mutated finches reproduced more offspring, causing the birds wings to become longer so they could fly better in the wind

____ 30. _____ is the contribution that an individual makes to the gene pool of the next generation compared to the contributions of other individuals.

    A. Equilibrium
    B. Descent with modification
    C. Fitness
    D. Adaptation