10. The idea that evolution takes place at a continuous but very slow rate is known as _______gradualism_____.

11. According to the heterotroph hypothesis, which gas was lacking in the atmosphere of primitive earth? **oxygen**

12. Fossil records indicate that between 80 million and 60 million years ago the structure of the horned dinosaur frequently underwent rapid changes separated by long period of stability. This pattern of change best illustrates the concept of ___________punctuated equilibrium_______________.

13. The bones in the wing of a bird, the flipper of a whale, and the arm of a human are considered by any scientists to be ____homologous______ structures.

14. According to the heterotroph hypothesis, which gas was added to the environment by the first autotrophs? **oxygen**

15. According to the heterotroph hypothesis, aerobic activity in organisms could not evolve until what happened? **Autotrophs added oxygen**

16. Scientists theorize that oxygen buildup in the atmosphere resulted from
   a) Respiration
   b) Photosynthesis
   c) Chemosynthesis
   d) Rock Weathering

17. Which of the following is a true statement about evolution?
   a) Individuals evolve more slowly than populations
   b) Individuals evolve; populations do not
   c) Individuals evolve by changing the gene pool
   d) Populations evolve; individuals do not

18. A study of the position and shape of the bones in the forelimbs of a flying squirrel, a bat, and a beaver showed that the beaver and the flying squirrel appear to be most closely related. This determination was most likely based on a study in the field of comparative _________________.

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19. Fossils of an extinct species of giant armadillo were found to be similar to a smaller species of armadillo presently inhabiting the same region. This similarity could best be explained on the basis of
   a) Inheritance of acquired characteristics
   b) Evolution from older forms
   c) The heterotroph hypothesis
   d) use and disuse

20. Variations within a species are most likely the result of
   a) Mutations and sexual reproduction
   b) Synapsis and disjunction
   c) Mitosis and asexual reproduction
   d) Over

21. Which species is common ancestor to P, O, & L? F

22. How many million years ago did the common ancestor of C & D exist? 75 million

23. What happened to species C, D, H, L, O & P? went extinct

24. The diagram below shows the gradual change over time in the anatomy of the horse. Which concept is best illustrated by the physical variations in the horse as its body size and structure change over time?
   a) acquired characteristics
   b) artificial selection
   c) intermediate inheritance
   d) organic evolution

25. Two organisms are closely related and are thought to share a similar evolutionary history. If this assumption is correct, these organisms most likely have
   a) no structural differences
   b) few biochemical similarities
   c) identical chromosome mutations
   d) similar embryological development
26. The Florida panther, a member of the cat family, has a population of fewer than 100 individuals and has limited genetic variation. Which inference based on this information is valid?
   a) These animals will begin to evolve rapidly.
   b) Over time, these animals will become less likely to survive in a changing environment.
   c) These animals are easily able to adapt to the environment.
   d) Over time, these animals will become more likely to be resistant to disease

27. Two nucleotide sequences found in two different species are almost exactly the same. This suggests that these species
   a) are evolving into the same species
   b) contain identical DNA
   c) may have similar evolutionary histories
   d) have the same number of mutations

28. Modern evolutionary theory consists of the concepts of Darwin modified by the knowledge concerning
   a) Overpopulation
   b) [The genetic basis of variation]
   c) Survival of the fittest
   d) Competition

29. According to the interpretation of the fossil record by many scientists, at which time interval did multicellular organisms appear first on Earth?
   (1) A to B
   (2) B to C
   (3) C to D
   (4) D to E

29. According to the interpretation of the fossil record by many scientists, at which time interval did multicellular organisms appear first on Earth?
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30. The use of pesticides on crops has been a common farming practice for decades. What has been the greatest effect of natural selection through the use of pesticides on certain insect populations?
   a) Natural selection has been altered because the insects and their predators are killed.
   b) The rate of selection is increased because the pesticides do not kill the insects that are naturally resistant to it.
   c) The rate of selection has decreased because the pesticides kill only young insects.
   d) The pesticides have altered natural selection by causing the insect DNA to spontaneously mutate.
31. In the boxes below, put the following organisms in order of when they evolved, from the first to the most recent.

Multicellular Organisms
Anaerobic Prokaryotes
Eukaryotes
Photosynthetic Prokaryotes

Anaerobic prokaryotes → Photosynthetic prokaryotes → eukaryotes → Multicellular organisms