1.8 Evolution of Life Practice

1. Evidence of evolutionary relationships can be found in the fossil record. ( True/False )
2. Based on our current evidence, multicellular organisms evolved after unicellular organisms. (True/False)
3. Evolution occurs by a process called artificial selection. ( True/False )
4. A change in the characteristics of living things over time is called evolution. ( True/False )
5. Evolution is biology's core theme that ties together all the other themes. ( True/False )
6. The evolutionary process occurs in organisms through changes in traits that are never heritable. ( True/False )
7. Darwin published a book on evolution in 1859 called "Origin of Species." ( True/False )
8. Dating back to about 610 million years, in the Ediacaran period, the multicellular organisms began to appear in the oceans. ( True/False )
9. According to our current scientific evidence, birds evolved before mammals. ( True/False )
10. According to our current scientific evidence, life evolved on Earth just 30,000 years ago. ( True/False )
11. Darwin was the first to claim evolution occurs (explains the diversity of life we see and the relationship of modern organisms to extinct ones). ( True/False )
12. Darwin is credited with being the first to explain how evolution happens, by the process of natural selection. ( True/False )
13. According to current scientific evidence regarding the first life forms on Earth which feature or process **evolved first in each selection**? Circle the correct answer from each grouping.
    1. unicellular **or** multicellular c) prokaryote **or** eukaryote
    2. sexual **or** asexual d) aerobic **or** anaerobic
14. Which one of the following options is not true for Darwin's theory of natural selection?
    1. All populations tend to overproduce
    2. Some members are more adapted to the rigors of competition
    3. Limited resources put limits on population growth
    4. Variation in individuals is not inheritable
15. According to Darwin, evolution takes place by \_\_\_\_\_.
    1. Evolution
    2. Adaptation
    3. Natural selection
    4. None of the above
16. The modern, aquatic, two-limbed whales, which evolved from four-limbed land animals, can be best explained by \_\_\_\_\_.
    1. Natural philosophy
    2. Germ theory
    3. The hierarchical organization of life
    4. Natural selection
17. Humans and chimpanzees have approximately \_\_\_\_\_ of genes in common.
    1. 75%
    2. 98%
    3. 56%
    4. 45%

1. What is evolution?

2. What is natural selection?

3. Explain the theory of evolution.

**Please place a check in the following boxes that apply to each organism category.**

|  |  |
| --- | --- |
| Organism Category | |
| Prokaryote | Eukaryote |  |
|  |  | Earliest life form based on scientific evidence |
|  |  | Contains membrane-bound organelles |
|  |  | Has genetic information that it passes down to the next generation |
|  |  | Evolves |
|  |  | Is the smaller one |
|  |  | Is more structurally complex |
|  |  | Includes both unicellular and multicellular organisms |
|  |  | All (or most!) are unicellular |
|  |  | Is a form of life |
|  |  | Has a nucleus (a type of membrane-bound organelle) |
|  |  | Includes bacteria (Kingdoms Archaebacteria and Eubacteria) |
|  |  | Includes plants (Kingdom Plantae) |
|  |  | Includes animals (Kingdom Animalia) |
|  |  | Includes fungi (Kingdom Fungi) |
|  |  | Includes protists (Kingdom Protista) |

**Label the following as a Eukaryote (E) or Prokaryote (P) or Neither (N)**

|  |  |
| --- | --- |
| 1. Oak tree \_\_\_\_\_\_ 2. Cat\_\_\_\_\_\_ 3. Stray dog\_\_\_\_\_\_ 4. Owl\_\_\_\_\_\_ 5. Clown fish\_\_\_\_\_\_ 6. *e. coli* \_\_\_\_\_\_ 7. Bacteria\_\_\_\_\_\_ | 1. A cell with a nucleus\_\_\_\_\_\_ 2. A kidney cell \_\_\_\_\_\_ 3. A skin cell\_\_\_\_\_\_ 4. Photosynthetic bacteria \_\_\_\_\_ 5. Cell with membrane-bound organelles like mitochondria\_\_\_\_\_ 6. Flu virus\_\_\_\_\_\_ 7. You \_\_\_\_\_\_ |