|  |
| --- |
| **Multiple Choice** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Approximately how many rainforest species become extinct every minute?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​one |
|   | b.  | ​two |
|   | c.  | ​five |
|   | d.  | ​ten |
|   | e.  | ​twenty |

|  |  |
| --- | --- |
| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.1 The Secret Life of Earth |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.1 - Examine why it is important to understand our natural world. |

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| 2. The smallest unit of life that can exist as a separate entity is a(n)​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​cell. |
|   | b.  | ​molecule. |
|   | c.  | ​organ. |
|   | d.  | ​population. |
|   | e.  | ​ecosystem. |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 3. The most inclusive level of organization listed here is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | ​heart. |
|   | b.  | carbon atom. |
|   | c.  | DNA. |
|   | d.  | zebra. |
|   | e.  | red blood cell. |

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| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 4. What is the correct ordering in the hierarchal levels of the organization of life, from the least inclusive to the most inclusive?​

|  |  |  |
| --- | --- | --- |
|   | a.  | tissues, cells, population, organisms, and organs |
|   | b.  | molecules, cells, organs, tissues, and organisms |
|   | c.  | ecosystems, populations, tissues, cells, and organs |
|   | d.  | cells, tissues, organs, communities, and populations |
|   | e.  | cells, tissues, organs, organisms, and ecosystems |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| Figure 1.2​ |

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| 5. In the accompanying figure illustrating the levels of life’s organization, what is represented in frame 2?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​atom |
|   | b.  | ​tissue |
|   | c.  | ​molecule |
|   | d.  | ​organ |
|   | e.  | ​cell |

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| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *PREFACE NAME:* | Figure 1.2 |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 6. In the accompanying figure illustrating the levels of life’s organization, what is represented in frame 3?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​atom |
|   | b.  | ​tissue |
|   | c.  | ​molecule |
|   | d.  | ​organ |
|   | e.  | ​cell |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *PREFACE NAME:* | Figure 1.2 |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 7. A community​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​includes all populations of all species in a given area. |
|   | b.  | ​features the living organisms interacting with the physical and chemical environment. |
|   | c.  | ​is the sum of all places in Earth's atmosphere, crust, and waters where organisms live. |
|   | d.  | ​includes members of only one species. |
|   | e.  | ​is at a higher level of organization than an ecosystem. |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 8. At what level of organization does life begin?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​digestive system |
|   | b.  | cell |
|   | c.  | ​molecule (water) |
|   | d.  | ​molecule (DNA) |
|   | e.  | ​population |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 9. Living organisms are members of all of the levels listed below. However, rocks are components of​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​the community. |
|   | b.  | ​the population. |
|   | c.  | ​the ecosystem only. |
|   | d.  | ​the biosphere only. |
|   | e.  | ​both the ecosystem and the biosphere. |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 10. A(n) \_\_\_\_ property is a characteristic of a system that does not appear in any of its component parts.​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​efferent |
|   | b.  | ​emergent |
|   | c.  | ​elective |
|   | d.  | ​energetic |
|   | e.  | ​living |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.2 - List the eleven levels of life’s organization. |

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| 11. Which feature is not characteristic of all living organisms?

|  |  |  |
| --- | --- | --- |
|   | a.  | All have requirements for energy. |
|   | b.  | All must participate in one or more nutrient cycles. |
|   | c.  | All have ultimate dependence upon the sun. |
|   | d.  | All interact with other forms of life. |
|   | e.  | All must reproduce inside of organisms of other species. |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.2 Life Is More than the Sum of Its Parts |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 12. Four of the following are key characteristics for the survival of a species. Which one is the exception?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​ability to acquire energy and nutrients |
|   | b.  | ​response to environmental change |
|   | c.  | ​reproduction |
|   | d.  | ​inability to change |
|   | e.  | ​ability to grow and adapt through changes in DNA |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 13. Four of the following characteristics are required for the life of an individual organism to continue. Which is the exception?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​to maintain chemical uniqueness and organization |
|   | b.  | ​to respond to stimuli |
|   | c.  | ​to possess a genetic program to control cell processes |
|   | d.  | ​to reproduce |
|   | e.  | ​to evolve |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 14. The conversion of solar energy to chemical energy is known as​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​metabolism. |
|   | b.  | ​photosynthesis. |
|   | c.  | ​chemosynthesis. |
|   | d.  | ​catabolism. |
|   | e.  | ​anabolism. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 15. Organisms sense and respond to changes both inside and outside the body by way of​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​metabolism. |
|   | b.  | ​photosynthesis. |
|   | c.  | ​receptors. |
|   | d.  | ​catabolism. |
|   | e.  | ​anabolism. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 16. DNA codes for the production of​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​proteins. |
|   | b.  | ​minerals. |
|   | c.  | ​inorganic molecules. |
|   | d.  | ​vital gasses. |
|   | e.  | ​water. |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 17. Which group of organisms does not depend directly on sunlight for energy?

|  |  |
| --- | --- |
| I. | terrestrial producers |
| II. | animal consumers |
| III. | decomposers |

|  |  |  |
| --- | --- | --- |
|   | a.  | I only |
|   | b.  | II and III only |
|   | c.  | II only |
|   | d.  | ​III only |
|   | e.  | ​I and III |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| Figure 1.3 |

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| 18. On the accompanying illustration, "A" and "B" should be labeled, respectively, \_\_\_\_ and \_\_\_\_\_.​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​consumers; producers |
|   | b.  | ​decomposers; producers |
|   | c.  | ​producers; redistributors |
|   | d.  | ​producers; consumers |
|   | e.  | ​consumers; decomposers |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *PREFACE NAME:* | Figure 1.3 |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 19. Which characteristic is NOT found in nonliving entities?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​energetic interactions |
|   | b.  | ​DNA |
|   | c.  | ​atoms |
|   | d.  | ​heat energy |
|   | e.  | ​complexity |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom’s: Understand |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 20. ​The flow of nutrients through living organisms is best characterized as

|  |  |  |
| --- | --- | --- |
|   | a.  | ​circular. |
|   | b.  | ​a ladder. |
|   | c.  | ​a lattice. |
|   | d.  | ​one way. |
|   | e.  | ​a funnel. |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 21. ​Homeostasis provides what kind of internal environment?

|  |  |  |
| --- | --- | --- |
|   | a.  | positive |
|   | b.  | tolerable |
|   | c.  | limiting |
|   | d.  | changing |
|   | e.  | chemical and physical |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 22. Each cell is able to maintain an internal environment within a range that favors survival. This condition is called​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​metabolism. |
|   | b.  | ​homeostasis. |
|   | c.  | ​physiology. |
|   | d.  | ​adaptation. |
|   | e.  | ​evolution. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 23. About twelve to twenty-four hours after the previous meal, a person's blood-sugar level normally varies from 60 to 90 milligrams per 100 milliliters of blood, though it may rise to 130 mg/100 ml after meals high in carbohydrates. That the blood-sugar level is maintained within a fairly narrow range despite uneven intake of sugar is due to the body's ability to carry out​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​adaptation. |
|   | b.  | ​inheritance. |
|   | c.  | ​metabolism. |
|   | d.  | ​homeostasis. |
|   | e.  | ​evolution. |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 24. Which phrase would most likely be used in a discussion of homeostasis?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​respond to environmental stimuli |
|   | b.  | ​limited range of variation |
|   | c.  | ​rapid energy turnover |
|   | d.  | ​cycle of elements |
|   | e.  | ​structural and functional units of life |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. What characteristic is common to all living things?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​All living things eat. |
|   | b.  | ​All living things are producers. |
|   | c.  | ​All living things sense and respond to change. |
|   | d.  | ​All living things have a nucleus. |
|   | e.  | ​All living things are consumers. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Analyze |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 26. Energy sources are needed for which of the following processes?

|  |  |
| --- | --- |
| I. | reproduction |
| II. | growth |
| III. | development |

|  |  |  |
| --- | --- | --- |
|   | a.  | ​I and II only |
|   | b.  | ​I and III only |
|   | c.  | ​II only |
|   | d.  | ​II and III only |
|   | e.  | ​I, II, and III |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 27. Which cell lacks a nucleus?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​bacterial cell |
|   | b.  | ​fungus cell |
|   | c.  | ​animal cell |
|   | d.  | ​protist cell |
|   | e.  | ​plant cell |

|  |  |
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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 28. Members of which prokaryotic domain are most closely related to eukaryotes evolutionarily?

|  |  |  |
| --- | --- | --- |
|   | a.  | ​animals |
|   | b.  | ​protists |
|   | c.  | ​fungi |
|   | d.  | ​bacteria |
|   | e.  | ​archaea |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 29. Which of the following is a domain of life?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​eukaryotes |
|   | b.  | ​plants |
|   | c.  | ​animals |
|   | d.  | ​protists |
|   | e.  | ​fungi |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 30. Members of what group are multicellular producers?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​animals |
|   | b.  | ​protists |
|   | c.  | ​fungi |
|   | d.  | ​plants |
|   | e.  | ​bacteria |

|  |  |
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| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom’s: Understand |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 31. Which group is made up of almost exclusively decomposers?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​plants |
|   | b.  | ​fungi |
|   | c.  | ​animals |
|   | d.  | ​bacteria |
|   | e.  | ​protists |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 32. Which organisms are NOT eukaryotes?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​fungi |
|   | b.  | ​bacteria |
|   | c.  | ​plants |
|   | d.  | ​animals |
|   | e.  | ​protists |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 33. A scientific name consists of which of the following?

|  |  |
| --- | --- |
| I. | family name |
| II. | genus name |
| III. | species name |

|  |  |  |
| --- | --- | --- |
|   | a.  | ​I only |
|   | b.  | ​II only |
|   | c.  | ​III only |
|   | d.  | ​I and II |
|   | e.  | ​II and III |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.5 Organizing Information about Species |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.5 - Examine the importance of taxonomy in the classification of different species. |

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| 34. The plural for genus is​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​genus. |
|   | b.  | ​geni. |
|   | c.  | ​genera. |
|   | d.  | ​gena. |
|   | e.  | ​genae. |

|  |  |
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| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.5 Organizing Information about Species |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.5 - Examine the importance of taxonomy in the classification of different species. |

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| 35. Which is the least inclusive of the taxonomic categories listed below?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​family |
|   | b.  | ​phylum |
|   | c.  | ​class |
|   | d.  | ​order |
|   | e.  | ​genus |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.5 Organizing Information about Species |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.5 - Examine the importance of taxonomy in the classification of different species. |

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| 36. Which group includes all of the other groups?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​domain |
|   | b.  | ​order |
|   | c.  | ​family |
|   | d.  | ​genus |
|   | e.  | ​species |

|  |  |
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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.5 Organizing Information about Species |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.5 - Examine the importance of taxonomy in the classification of different species. |

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| 37. Which renowned biologist defined species as a group of individuals that potentially can interbreed, produce fertile offspring, and do not interbreed with other groups?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​Charles Darwin |
|   | b.  | ​E. O. Wilson |
|   | c.  | ​Carl Linnaeus |
|   | d.  | ​Jean-Baptiste Lamarck |
|   | e.  | ​Ernst Mayr |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.5 Organizing Information about Species |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.5 - Examine the importance of taxonomy in the classification of different species. |

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| 38. Which term refers to judging information before accepting it as fact?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​critical thinking |
|   | b.  | law |
|   | c.  | ​theory |
|   | d.  | ​fact |
|   | e.  | ​hypothesis |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom’s: Remember |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 39. Which term refers to the first explanation of a problem (sometimes referred to an "educated guess")?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​principle |
|   | b.  | ​law |
|   | c.  | ​theory |
|   | d.  | ​fact |
|   | e.  | ​hypothesis |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 40. What is a hypothesis?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​a report of the findings of scientific experiments |
|   | b.  | ​a specific conclusion of an experiment in an "if . . . then" format |
|   | c.  | ​a way of using isolated facts to reach a general idea that may explain a phenomenon |
|   | d.  | ​the summary of the outcomes of scientific findings |
|   | e.  | ​a testable explanation of a natural phenomenon |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 41. Which concept represents the lowest degree of certainty?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​hypothesis |
|   | b.  | ​conclusion |
|   | c.  | ​fact |
|   | d.  | ​principle |
|   | e.  | ​theory |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. Which concept represents the highest degree of certainty?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​hypothesis |
|   | b.  | ​deduction |
|   | c.  | ​assumption |
|   | d.  | ​theory |
|   | e.  | ​prediction |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 43. The control in an experiment​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​makes the experiment valid. |
|   | b.  | ​is an additional replicate for statistical purposes. |
|   | c.  | ​reduces the experimental errors. |
|   | d.  | ​minimizes experimental inaccuracy. |
|   | e.  | ​allows for comparisons to the experimental group. |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. In an experiment, the control group is:​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​not subjected to experimental error. |
|   | b.  | ​exposed to experimental treatments. |
|   | c.  | ​maintained under strict laboratory conditions. |
|   | d.  | ​treated exactly the same as the experimental group, except for one variable. |
|   | e.  | ​statistically the most important part of the experiment. |

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| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 45. The choice of whether a particular organism belongs to the experimental group or the control group should be based on​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​age. |
|   | b.  | ​size. |
|   | c.  | ​chance. |
|   | d.  | ​history. |
|   | e.  | ​gender. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.6 - Examine the importance of critical thinking in the application of the scientific method |

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| 46. Scientists are always thinking about ways to improve experimental design. In the text's potato chip experiment, which of these changes would produce the most effective design?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​Show a different movie. |
|   | b.  | ​Exclude teenagers as group members. |
|   | c.  | ​Collect uneaten chip remains and weigh them for both groups. |
|   | d.  | ​Provide free drinks before the experiment. |
|   | e.  | ​Use a smaller theater. |

|  |  |
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| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 47. Olestra chips did not cause cramps at a higher rate than normal chips. This is known as the \_\_\_\_ of this experiment.​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​hypothesis |
|   | b.  | ​prediction |
|   | c.  | ​control |
|   | d.  | ​conclusion |
|   | e.  | ​data |

|  |  |
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| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 48. In the experiment with peacock butterflies, the working hypothesis is that​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​silence confuses both predator and prey. |
|   | b.  | ​making sounds can provide a selective advantage to the prey. |
|   | c.  | ​birds are capable of learning. |
|   | d.  | ​birds are agents of evolution. |
|   | e.  | ​unpalatable species display distinctive wings. |

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| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 49. What is one of the major variables in the peacock butterfly experiment?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​pattern/color of the wings |
|   | b.  | ​range of migration |
|   | c.  | ​species of bird predator |
|   | d.  | ​experimental location |
|   | e.  | ​percentage of survivors |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 50. Which group in the peacock butterfly experiment had the highest survival rates?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​Those with more nocturnal habits |
|   | b.  | ​Those without spots and without hissing/clicking sounds |
|   | c.  | ​Those without spots but with hissing/clicking sounds |
|   | d.  | ​Those with spots and hissing/clicking sounds |
|   | e.  | ​Those with the same flower habitat as the birds |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 51. What was the dependent variable in the peacock butterfly experiments?​

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| --- | --- | --- |
|   | a.  | ​changing predators |
|   | b.  | ​changing habitats |
|   | c.  | ​painting the wings |
|   | d.  | ​clipping the hindwings |
|   | e.  | ​getting eaten |

|  |  |
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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 52. Which of the following is NOT true about the peacock butterfly?​

|  |  |  |
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|   | a.  | ​The dark underside of their wings provides camouflage. |
|   | b.  | ​The spots on the wings may resemble owl eyes, which help deter predation. |
|   | c.  | ​The butterflies remain still when a predator is near so as not to draw attention. |
|   | d.  | The rapid movement of their wings produces a hissing sound.​ |
|   | e.  | ​A resting butterfly’s closed wing resembles a dead leaf. |

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| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 53. Which experiment would be the least effective follow-up to the peacock butterfly studies?​

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|   | a.  | ​Repeat in a forest area totally devoid of native butterflies. |
|   | b.  | ​Repeat in a wildlife sanctuary aviary after giving birds a chance to learn about peacock butterflies. |
|   | c.  | ​Repeat using young, inexperienced birds. |
|   | d.  | ​Repeat, and count survivors for three weeks. |
|   | e.  | ​Repeat using more butterflies and more blue tits in a larger area. |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: |
| *REFERENCES:* | 1.7 Examples of Experiments in Biology |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.7 - Recognize the importance of experimental research to the field of biology using an example. |

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| 54. Randomly selecting samples of experimental units from an environment can result in​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​sampling error. |
|   | b.  | ​blind testing. |
|   | c.  | ​evidence. |
|   | d.  | ​experimental design. |
|   | e.  | ​consensus. |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.8 Analyzing Experimental Results |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 55. What is an acceptable probability of sampling error that may have skewed the results in most scientific studies?​

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| --- | --- | --- |
|   | a.  | ​80% |
|   | b.  | ​50% |
|   | c.  | ​25% |
|   | d.  | ​10% |
|   | e.  | ​5% |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.8 Analyzing Experimental Results |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 56. Science is based on​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​faith. |
|   | b.  | ​authority. |
|   | c.  | ​evidence. |
|   | d.  | ​force. |
|   | e.  | opinion. |

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| *ANSWER:* | c |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.9 The Nature of Science |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 57. Which characteristic is least applicable to the development of science?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​evaluation of data |
|   | b.  | ​personal conviction |
|   | c.  | ​prediction |
|   | d.  | ​systematic observation |
|   | e.  | ​sharing of ideas |

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| --- | --- |
| *ANSWER:* | b |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.9 The Nature of Science |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1. 1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 58. Which characteristic will NOT strengthen the validity of a theory?​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​repetitions of experiments |
|   | b.  | ​increased observations |
|   | c.  | ​time after the experiment |
|   | d.  | ​faith in the experiment |
|   | e.  | ​confirmation by many scientists |

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| *ANSWER:* | d |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.9 The Nature of Science |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 59. Scientific work involves​

|  |  |  |
| --- | --- | --- |
|   | a.  | ​the natural and supernatural world. |
|   | b.  | ​retesting theories frequently for verification. |
|   | c.  | ​proving theories with absolute certainty. |
|   | d.  | ​testing hypotheses under every possible circumstance. |
|   | e.  | coming up with the best descriptions of reality. |

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| *ANSWER:* | e |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.9 The Nature of Science |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.8 - Examine how sampling errors occur in scientific experiments and what methods researchers use to combat errors and bias |

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| 60. ​Copernicus, Galileo, and Darwin found that \_\_\_\_ caused their science to be controversial.

|  |  |  |
| --- | --- | --- |
|   | a.  | ​prevailing belief |
|   | b.  | ​objective data |
|   | c.  | ​astronomical theories |
|   | d.  | ​supernatural influences |
|   | e.  | ​experimental design |

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| *ANSWER:* | a |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.9 The Nature of Science |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.9 - Examine how science works. |

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| **Matching** |

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| Match the following letters to the number with which they best correspond.​

|  |  |
| --- | --- |
| a.  | ​Observation |
| b.  | ​Question |
| c.  | ​Hypothesis |
| d.  | ​Prediction |
| e.  | ​Law of nature |
| f.  | ​Scientific theory |
| g.  | ​Assessment |
| h.  | ​Report |

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| *DIFFICULTY:* | Bloom's: Apply |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.9 - Examine how science works. |

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| 61. ​This is a generalization that describes a consistent natural phenomenon for which there is incomplete scientific explanation.

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| *ANSWER:* | e |

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| 62. ​If smoking causes cancer, then individuals who smoke will get cancer more often than those who do not.

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| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Match the following letters to the number with which they best correspond.​

|  |  |
| --- | --- |
| a.  | ​Observation |
| b.  | ​Question |
| c.  | ​Hypothesis |
| d.  | ​Prediction |
| e.  | ​Law of nature |
| f.  | ​Scientific theory |
| g.  | ​Assessment |
| h.  | ​Report |

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| --- | --- |
| *DIFFICULTY:* | Bloom's: Understand |
| *REFERENCES:* | 1.6 The Science of Nature |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.9 - Examine how science works. |

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| 63. ​Submit the results and the conclusions to the scientific community.

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| *ANSWER:* | h |

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| 64. ​Hypothesis that has not been disproven after many years of rigorous testing.

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| --- | --- |
| *ANSWER:* | f |

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| 65. ​Compile test results and draw conclusions from them.

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| --- | --- |
| *ANSWER:* | g |

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| 66. ​Smoking cigarettes causes cancer.

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| --- | --- | --- |
| 67. ​Why do people get cancer?

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |
| --- | --- | --- |
| 68. ​People get cancer.

|  |  |
| --- | --- |
| *ANSWER:* | a |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ​Classification. Match the following descriptions to the most appropriate function, process, or trait listed below.

|  |  |
| --- | --- |
| a.  | ​inheritance |
| b.  | ​reproduction |
| c.  | ​photosynthesis |
| d.  | ​growth |
| e.  | ​homeostasis |

|  |  |
| --- | --- |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.3 How Living Things Are Alike |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.3 - Outline the significance of energy and nutrients to organisms |

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| 69. ​a process found only in plants, some bacteria, and some protists

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| 70. ​a characteristic most organisms exhibit that tends to keep their internal environment within a range that favors survival

|  |  |
| --- | --- |
| *ANSWER:* | e |

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| 71. ​the transmission of DNA from parent to offspring

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- |
| 72. ​process by which individuals produce offspring

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| Classification. Match the following descriptions with the most appropriate group listed below.​

|  |  |
| --- | --- |
| a.  | ​bacteria |
| b.  | ​protists |
| c.  | ​plants |
| d.  | ​fungi |
| e.  | ​animals |

|  |  |
| --- | --- |
| *DIFFICULTY:* | Bloom's: Remember |
| *REFERENCES:* | 1.4 How Living Things Differ |
| *LEARNING OBJECTIVES:* | UDOL.STES.16.1.4 - Examine how classification helps in understanding biodiversity using examples. |

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| 73. ​multicellular producers

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| --- | --- |
| *ANSWER:* | c |

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| --- | --- | --- |
| 74. ​prokaryotic

|  |  |
| --- | --- |
| *ANSWER:* | a |

 |

|  |  |  |
| --- | --- | --- |
| 75. ​unicellular organisms of considerable internal complexity

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |
| --- | --- | --- |
| 76. ​multicelled mobile consumers

|  |  |
| --- | --- |
| *ANSWER:* | e |

 |

|  |  |  |
| --- | --- | --- |
| 77. ​based on fossils, oldest, still living organisms

|  |  |
| --- | --- |
| *ANSWER:* | a |

 |

|  |  |  |
| --- | --- | --- |
| 78. ​unicellular eukaryotic producers

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |
| --- | --- | --- |
| 79. ​most common multicellular decomposers

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |