|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Pollen can be carried by wind, animals, or water.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Easy | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. Animal-pollinated plants have fragrant or showy flowers to attract the animals.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. In 1993, Dr. David Hall taught forensic botany to CIA trainees.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-02 - LO: 5-02 FSFI.BERT.2.LO: 5-03 - LO: 5-03 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. By comparing the number and proportion of gills and spores in a drowned person’s lungs, it is sometimes possible to determine where he or she drowned.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-04 - LO: 5-04 FSFI.BERT.2.LO: 5-05 - LO: 5-05 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. Dr. Jane Brock, a forensic botanist, had graduate students chew peanut butter, french fries, and chocolate bars to create a lab manual to assist with the identification of foods consumed in a person’s last meal.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-02 - LO: 5-02 FSFI.BERT.2.LO: 5-05 - LO: 5-05 FSFI.BERT.2.LO: 5-06 - LO: 5-06 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. The field of forensic palynology is the study of:   |  |  |  | | --- | --- | --- | |  | a. | polymer evidence to help solve criminal cases. | |  | b. | cellulose evidence to help solve criminal cases. | |  | c. | pollen and spore evidence to help solve criminal cases. | |  | d. | None of these choices. |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. A pollen grain is:   |  |  |  | | --- | --- | --- | |  | a. | the male reproductive structure of the seed plant. | |  | b. | the female reproductive structure of the seed plant. | |  | c. | the male reproductive structure of algae. | |  | d. | the female reproductive structure of algae. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Challenging | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-02 - LO: 5-02 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. Which term describes the study of tree rings?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | limnology | b. | systematic | |  | c. | palynology | d. | dendrochronology |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-02 - LO: 5-02 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9. The use of both pollen and spores in forensic studies is based on:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Baird’s principle of exchange. | b. | Locard’s principle of exchange. | |  | c. | Lockhart’s principle of exchange. | d. | None of these choices. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Easy | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. A pollen fingerprint is the:   |  |  |  | | --- | --- | --- | |  | a. | number and type of pollen grains found in a geographical area at a particular time of year. | |  | b. | number of pollen grains found in a geographical area at a particular time of year. | |  | c. | type of pollen grains found in a geographical area at a particular time of year. | |  | d. | None of these choices. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. Seed plants include two groups:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ferns and mosses. | b. | liverworts and horsetails. | |  | c. | gymnosperms and angiosperms. | d. | None of these choices. |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Challenging | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12. ​Seeds may be dispersed by which of the following methods?   |  |  |  | | --- | --- | --- | |  | a. | gardeners planting gardens | |  | b. | through animal feces | |  | c. | on the shoes of people walking through fields | |  | d. | by the wind | |  | e. | ​a and b | |  | f. | ​c and d | |  | g. | ​a and c | |  | h. | ​b and d |  |  |  | | --- | --- | | *ANSWER:* | h | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13. The largest group of gymnosperms is the:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | cycads. | b. | conifers. | |  | c. | ginkgoes. | d. | cycads. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. Angiosperms are:   |  |  |  | | --- | --- | --- | |  | a. | flowering plants and they produce seeds within a fruit. | |  | b. | evergreen plants and they produce seeds within a cone. | |  | c. | flowering plants and they produce seeds within a cone. | |  | d. | evergreen plants and they produce seeds within a fruit. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. The pistil is the female part of a flower that produces:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | buds. | b. | stems. | |  | c. | eggs. | d. | petals. |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. The pistil is made up of the:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | stigma. | b. | style. | |  | c. | ovary. | d. | All of these choices. |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. The male part of the flower that is responsible for pollen production and dispersal is the:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | stamen. | b. | pistil. | |  | c. | stigma. | d. | style. |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. The stamen consists of two parts: the anther and the:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ovule. | b. | filament. | |  | c. | stigma. | d. | pistil. |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19. The transfer of pollen from an anther to a stigma within the same flower is known as:   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | cross-pollination. | b. | pollination. | |  | c. | self-pollination | d. | All of these choices. |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. Angiosperms are diverse and include corn, oaks and maples. How many known species of angiosperms exist?   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | 300,000 species known | b. | 100,000 species known | |  | c. | 200,000 species known | d. | 50,000 species known |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. After pollen and spores are processed and chemically extracted from samples in the laboratory, they are examined by forensic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ using a compound light microscope.   |  |  | | --- | --- | | *ANSWER:* | palynologists | | *POINTS:* | 1 | | *DIFFICULTY:* | Challenging | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-02 - LO: 5-02 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. Many conifers produce their seeds within a hard, scaly structure, called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   |  |  | | --- | --- | | *ANSWER:* | cone | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-04 - LO: 5-04 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. Sometimes it is possible to determine where a victim drowned by examining the number and proportion of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a drowned person's lungs and body tissues.  ​   |  |  | | --- | --- | | *ANSWER:* | algae and diatoms | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-04 - LO: 5-04 FSFI.BERT.2.LO: 5-05 - LO: 5-05 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24. At least ten different types of plants from and area’s assemblage is called a(n):  ​   |  |  | | --- | --- | | *ANSWER:* | habitat sample | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-06 - LO: 5-06 FSFI.BERT.2.LO: 5-08 - LO: 5-08 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. Groups of plants that are usually dominated by one species are called:   |  |  | | --- | --- | | *ANSWER:* | assemblages | | *POINTS:* | 1 | | *DIFFICULTY:* | Average | | *LEARNING OBJECTIVES:* | FSFI.BERT.2.LO: 5-01 - LO: 5-01 FSFI.BERT.2.LO: 5-02 - LO: 5-02 FSFI.BERT.2.LO: 5-04 - LO: 5-04 FSFI.BERT.2.LO: 5-09 - LO: 5-09 | |