**Unit 9, Lesson 1 & 2 Review Quiz**

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

**\_\_\_\_ 1.** Robin knows that human skin sweats to cool itself. She wonders how evaporation helps this process work. She decides to test how the evaporation of rubbing alcohol and water affect temperature. She knows that rubbing alcohol evaporates more quickly than water. She wets one paper towel with water that is room temperature and another with rubbing alcohol that is room temperature. She leaves a third paper towel dry. She wraps each paper towel around a different thermometer and places it under a fan. Which thermometer will cool the fastest?

|  |  |
| --- | --- |
| **A** | All three thermometers will cool at the same rate. |
| **B** | The thermometer with the dry paper towel will cool the fastest. |
| **C** | The thermometer with water on its paper towel will cool the fastest. |
| **D** | The thermometer with alcohol on its paper towel will cool the fastest. |

**\_\_\_\_ 2.** Drew knows that human skin sweats to cool itself. He wonders how evaporation helps this process work. Drew has five thermometers. He wraps the end of each in a strip of cloth. He dips four of them into different liquids. He leaves the fifth one dry. He sets all of them outside in the shade for five minutes. The table below shows the temperature that he records for each thermometer:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Alcohol** | **Mineral oil** | **Salt water** | **Water** | **Dry** |
| 72 °F | 82 °F | 78 °F | 78 °F | 83 °F |

Which liquid evaporates **fastest**?

|  |  |
| --- | --- |
| **A** | alcohol |
| **B** | mineral oil |
| **C** | salt water |
| **D** | water |

**\_\_\_\_ 3.** After playing soccer in the sun for one hour, Cami is hot. Luckily, her skin produces sweat, which contains water and salt. How does Cami’s skin keep her body cool?

|  |  |
| --- | --- |
| **A** | Salt traps heat near the skin. |
| **B** | Water keeps the skin from getting too dry. |
| **C** | Waste salt is removed from the body in sweat. |
| **D** | Evaporation of water removes heat from the body. |

**\_\_\_\_ 4.** Aaron wonders how the skin uses sweat to cool the body. He wraps each of four identical thermometers in a paper towel. He adds a different liquid to three of the paper towels as shown in the figure.



He lets the paper towels dry for 10 min in front of a fan. What will a difference in the temperature of each thermometer tell Aaron about evaporation?

|  |  |
| --- | --- |
| **A** | Evaporation does not occur at room temperature. |
| **B** | Liquids that evaporate quickly lower temperature quickly. |
| **C** | Coverings keep thermometers warm and stop evaporation. |
| **D** | Thermometers wrapped in different ways measure temperature differently. |

**\_\_\_\_ 5.** Jack wants to test a hypothesis he has about sweat evaporation and body cooling. He swabs one of his brother’s arms with water. He swabs his other arm with rubbing alcohol. Then he asks him to describe which liquid feels cooler as it dries. His brother says that the arm with rubbing alcohol feels cooler. Why is Jack’s test **not** a scientific way of testing evaporation and cooling?

|  |  |
| --- | --- |
| **A** | No evaporation takes place. |
| **B** | He does not apply the test on his own arms. |
| **C** | His brother’s opinion is not a verifiable observation. |
| **D** | The amounts of water and alcohol are not the same. |

**\_\_\_\_ 6.** Maya is interested in the process the body uses to cool itself. She sets up the following tests to compare how the evaporation of alcohol and water decrease temperature.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test A** | **Test B** | **Test C** | **Test D** |
| She swabs her right arm with water and her left arm with alcohol. She waits 5 min and describes which arm feels cooler. | She swabs one thermometer with water and another with alcohol. She waits 5 min and checks to see which thermometer has a cooler temperature. | She dips one finger in water and waits 5 min. She dips the same finger in alcohol and waits another 5 min. She describes which experience feels coolest. | She pours a spoonful of alcohol and a spoonful of water on the sidewalk. She waits 10 min and checks which one evaporates first. |

Which test verifies that the evaporation of alcohol decreases temperature more quickly than the evaporation of water?

|  |  |
| --- | --- |
| **A** | Test A |
| **B** | Test B |
| **C** | Test C |
| **D** | Test D |

**\_\_\_\_ 7.** Compare the human body to an oak tree. A human’s skin is **most** like which part of an oak tree?

|  |  |
| --- | --- |
| **A** | acorn |
| **B** | bark |
| **C** | leaf |
| **D** | root |

**\_\_\_\_ 8.** The sense of hearing depends on which specialized cells?

|  |  |
| --- | --- |
| **A** | hair cells |
| **B** | taste buds |
| **C** | rods and cones |
| **D** | Chemoreceptors |

**\_\_\_\_ 9.** During recess, Nathan scraped his knee, so the nurse put a bandage on it. Which of the functions below that are normally provided by skin is now being provided by the bandage?

|  |  |
| --- | --- |
| **A** | preventing dehydration |
| **B** | regulating body temperature |
| **C** | sensing when it is being touched |
| **D** | keeping bacteria out of the body |

**\_\_\_\_ 10.** Vaccines are used to prevent illness. Most vaccines are given as injections or shots. Before a doctor gives a patient a shot, the doctor wipes the skin with rubbing alcohol. What is the **main** reason for wiping off the skin?

|  |  |
| --- | --- |
| **A** | to prevent pain |
| **B** | to prevent swelling |
| **C** | to prevent bleeding |
| **D** | to prevent infection |

**\_\_\_\_ 11.** Plants and animals have highly organized systems. Which of these shows the level of complexity, from **simplest** to **most** **complex**?

|  |  |
| --- | --- |
| **A** | organism - organs - organ systems |
| **B** | organs - organ systems - organism |
| **C** | organ systems - organism - organs |
| **D** | organs - organism - organ systems |

**\_\_\_\_ 12.** The human body receives sensory information from its surroundings. The body knows when food is warm or cold and whether an object is smooth or fuzzy. The body sends signals to other parts of the body, which then respond to the information. Which organ processes the sensory information the body receives?

|  |  |
| --- | --- |
| **A** | brain |
| **B** | heart |
| **C** | skin |
| **D** | Stomach |

**Short Answer**

**1.** After hiking on a warm day, Emilie’s body feels hot. Her skin begins to sweat. Describe how the body uses sweat to cool itself.

**2.** Bella is the goalie for her soccer team.



Explain how these four parts of her nervous system work together to coordinate Bella’s muscle movements as she tries to block the ball.

**3.** Skin protects the human body in many ways. Identify one way and explain why it is important

**Unit 9, Lesson 1 & 2 Review Quiz**

**Answer Section**

**MULTIPLE CHOICE**

**1.** D

**2.** A

**3.** D

**4.** B

**5.** C

**6.** B

**7.** B

**8.** A

**9.** D

**10.** D

**11.** B

**12.** A

**SHORT ANSWER**

**1.** Sample answer: When the body sweats, water comes to the surface of the skin. As the sweat or water evaporates, it absorbs heat from the body. This process lowers the temperature of the body, cooling it.

-Students’ answers should include:

• Evaporation of water absorbs heat.

• Loss of heat causes the body to cool.

**2.** Sample answer: Bella’s eyes will see the image of the ball and send signals to the brain. The brain will interpret those images. As the ball gets closer, her eyes will continue to relay messages to the brain. The brain will send messages to the leg and arm muscles to block the ball. These messages travel along the nerves to the muscles. The muscles contract and Bella blocks the ball.

-Students’ answers should include:

• The eyes sense light and send messages to the brain.

• The brain processes those messages.

• The brain commands the muscles to move.

• Those commands travel along nerves to muscles.

**3.** Sample answer: The skin protects the body from overheating by using sweat to cool the body. This is important because humans need to maintain a constant body temperature in order for all of our organs and systems to function properly.

-Students’ answers should include one of the following:

• The skin protects the body from overheating by producing sweat.

• The skin acts as a water barrier, preventing too much water from being lost or absorbed.

• The skin protects the body from infection by preventing organisms from entering and infecting the body.

• The skin acts as an initial barrier against physical damage to delicate tissues within the body.