**MONDAY’S HOMEWORK**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Class:\_\_\_\_\_\_\_

1. What is heat?
   1. temperature c. electricity
   2. thermal energy d. electromagnetic energy
2. Which of the following explains the process of radiation?

a. When heat gets transferred through objects that are touching

b. When the measurement of heat in the atmosphere goes down.

c. When heat gets transferred through electromagnetic waves that move through space

d. When heat gets transferred through a liquid or a gas

1. How does heat transfer through conduction?
   1. From warm object to cool object
   2. From the cool object to warm object
   3. From the warm object into the air
   4. From the air to the cool object
2. What is the difference between a conductor and an insulator?

a. a conductor can get heat transfer through convection and conduction, and an insulator can only get heat transfer from radiation.

b. a conductor can let heat pass through easily, and an insulator does not let it pass through easily.

c. a conductor can only get heat transfer through conduction and an insulator from radiation

d. a conductor is unaffected by heat, and an insulator is extremely affected by heat.

1. Why does a swimming pool stay cool on a hot, sunny day?
   1. Because radiation has no effect on water
   2. Because of convection
   3. Because the pool is a good insulator
   4. Because the sun’s rays are reflected off the pool’s surface
2. Which method of heat transfer of heat through a liquid or gas?

a. convection b. reflection

c. conduction d. radiation

1. Which two forms of heat transfer work together to heat water in a plastic bottle?

a. radiation and convection

b. conduction and convection

c. radiation and reflection

d. convection and reflection

1. Which types of heat transfer involve heat flow from hot objects to colder objects?

|  |  |  |
| --- | --- | --- |
|  | A. | convection and radiation, but not conduction |

|  |  |  |
| --- | --- | --- |
|  | B. | convection, conduction, and radiation |

|  |  |  |
| --- | --- | --- |
|  | C. | convection, but not conduction or radiation |

|  |  |  |
| --- | --- | --- |
|  | D. | convection and conduction, but not radiation |
|  |  |  |

9. If Cindy's hands are very cold and the cup is very hot, heat energy transfers from the cup to her hands because

|  |  |  |
| --- | --- | --- |
|  | A. | one is a solid and the other is mostly a liquid. |

|  |  |  |
| --- | --- | --- |
|  | B. | cold energy spreads from cool objects to warm objects. |

|  |  |  |
| --- | --- | --- |
|  | C. | of the temperature difference between them. |

|  |  |  |
| --- | --- | --- |
|  | D. | of the size difference between them. |

10. Once heat from the Sun penetrates the Earth's atmosphere, the heat is circulated as warm air rises and cold air sinks. What is this process called?

|  |
| --- |
| A. radiation |

|  |  |  |
| --- | --- | --- |
|  | B. | conduction |

|  |  |  |
| --- | --- | --- |
|  | C. | reflection |

|  |  |  |
| --- | --- | --- |
|  | D. | convection |

11. Which of the following processes transfers heat?

|  |  |  |
| --- | --- | --- |
|  | A. | convection |

|  |  |  |
| --- | --- | --- |
|  | B. | conduction |

|  |  |  |
| --- | --- | --- |
|  | C. | radiation |

|  |  |  |
| --- | --- | --- |
|  | D. | all of these |
|  |  |  |
|  |  |  |

12. Which of the following is a true statement about heat transfer?

|  |  |  |
| --- | --- | --- |
|  | A. | Heat always flows from cooler objects to warmer objects. |

|  |  |  |
| --- | --- | --- |
|  | B. | Heat never travels in a similar pattern. |

|  |  |  |
| --- | --- | --- |
|  | C. | Heat always flows from warmer objects to cooler objects. |

|  |  |  |
| --- | --- | --- |
|  | D. | Heat never transfers from solids to liquids. |

**Wednesday’s Homework**

1. What property of a stainless steel cooking pot makes it useful for cooking?

|  |  |  |
| --- | --- | --- |
|  | A. | hardness |

|  |  |  |
| --- | --- | --- |
|  | B. | thermal conduction |

|  |  |  |
| --- | --- | --- |
|  | C. | thermal insulation |

|  |  |  |
| --- | --- | --- |
|  | D. | metallic shine |
|  |  |  |

2. A hot saucepan is placed on a cold bench. Heat will flow from the saucepan to the bench until

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| --- | --- | --- |
|  | A. | the bench is as hot as the saucepan was. |

|  |  |  |
| --- | --- | --- |
|  | B. | the bench is warmer than the saucepan. |

|  |  |  |
| --- | --- | --- |
|  | C. | the saucepan and bench are at the same temperature. |

|  |  |  |
| --- | --- | --- |
|  | D. | the saucepan has lost all of its heat. |

3. Sandy has just made a pitcher of hot tea. She pours the tea into a cup and picks it up. The cup acts as an insulator, so Sandy can pick up the cup even though the liquid inside is hot.  
Of what material could the cup be made?

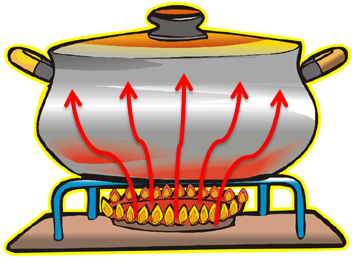
|  |  |  |
| --- | --- | --- |
|  | A. | wood |

|  |  |  |
| --- | --- | --- |
|  | B. | plastic |

|  |  |  |
| --- | --- | --- |
|  | C. | glass |

|  |  |  |
| --- | --- | --- |
|  | D. | all of these |

4. A pot is on a hot stove.



What carries most of the heat from the bottom of the pot to the top of the pot?

|  |  |  |
| --- | --- | --- |
|  | A. | flammable particles inside of the pot |

|  |  |  |
| --- | --- | --- |
|  | B. | collisions of energetic atoms and molecules |

|  |  |  |
| --- | --- | --- |
|  | C. | a heat force generated by the flames |

|  |  |  |
| --- | --- | --- |
|  | D. | particles of light shooting through the pot |

5. True/False

Air and plastics are insulators.

6. Jimmy held the end of a metal bar over a fire while holding on to the opposite end. After a few minutes, the end he was holding began to get very hot. Which process is illustrated in this example?

|  |  |  |
| --- | --- | --- |
|  | A. | convection |

|  |  |  |
| --- | --- | --- |
|  | B. | induction |

|  |  |  |
| --- | --- | --- |
|  | C. | conduction |

|  |  |  |
| --- | --- | --- |
|  | D. | radiation |
|  |  |  |

7. A light bulb lights up because energy, in the form of an electric current, is transferred from a power supply to the filament inside the light bulb. This kind of energy transfer is known as \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|  | A. | radiation |

|  |  |  |
| --- | --- | --- |
|  | B. | conduction |

|  |  |  |
| --- | --- | --- |
|  | C. | mechanical energy |

|  |  |  |
| --- | --- | --- |
|  | D. | convection |
|  |  |  |

8. Which types of heat transfer involve heat flow from hot objects to colder objects?

|  |  |  |
| --- | --- | --- |
|  | A. | convection and conduction, but not radiation |

|  |  |  |
| --- | --- | --- |
|  | B. | convection, but not conduction or radiation |

|  |  |  |
| --- | --- | --- |
|  | C. | convection, conduction, and radiation |

|  |  |  |
| --- | --- | --- |
|  | D. | convection and radiation, but not conduction |

9. Jackson is designing a new heater, and he wants to experiment with different thermally conductive materials. Which of these materials would be useful in conducting heat?

|  |  |  |
| --- | --- | --- |
|  | A. | wood |

|  |  |  |
| --- | --- | --- |
|  | B. | soil |

|  |  |  |
| --- | --- | --- |
|  | C. | aluminum |

|  |  |  |
| --- | --- | --- |
|  | D. | cork |

10. Before breakfast, Lacie dropped an ice cube into her coffee. After a few seconds, she noticed that the ice cube had melted in the coffee. Which of the following statements correctly explains what Lacie witnessed?

|  |  |  |
| --- | --- | --- |
|  | A. | The cold from the ice cube went into the air, which melted the ice. |

|  |  |  |
| --- | --- | --- |
|  | B. | The basic ice cube reacted with the acidic coffee, which caused the ice cube to melt. |

|  |  |  |
| --- | --- | --- |
|  | C. | The cold from the ice cube was transferred into the coffee, which melted the ice. |

|  |  |  |
| --- | --- | --- |
|  | D. | Heat from the coffee transferred into the ice cube, which melted the ice. |