Vasquez High School -- Physical Science -- Quest #4 -- Chapter 5 -- 60 points

Write TRUE if the statement is true OR write the word(s) that substitutes for the underlined word(s) that make it true. Writing false only earns partial credit. Three points each.

_____ 1) Any material in which thermal energy does not flow easily is a(n) conductor.

_____ 2) The second law of thermodynamics says temperature is always increasing on its own.

_____ 3) The sum of the kinetic and potential energy of the particles in an object is called the thermal energy of the object.

_____ 4) We used ice cubes in hot water to show that molecules in hot water move faster.

_____ 5) The type of energy transfer that does not require matter is potential.

Short Answer/Fill-in. Be neat and complete. If I cannot read it, you don't score. Three points.

6) Define heat and temperature. _____

_____.

7) How does a refrigerator reverse the second law of thermodynamics? _____

_____.

8) Give one way to express the first law of thermodynamics: _____

_____.

9) The proper name for how difficult it is to heat up a certain material is called its _____.

10) Wind and ocean currents are caused by _____.

11) For six points, give the three types of thermal energy transfer and a clear example of each not mentioned on the test.

a) _____ _____

b) _____ _____

c) _____ _____

12) Name three types of heaters: _____, _____ and

_____.

13) The word that means changing heat and is the study of the relationships among thermal energy, heat and

work is _____.

Calculation Section. Five points each. Use c = 4.2 J/g°C. Write the proper equation.

14) A glass containing 200 g water is heated from 20 °C to 50 °C. How many joules of energy does it take?

15) A 20 g piece of an unknown metal requires 6000 J of energy to heat it from 50 °C to 450 °C. What is the specific heat of this metal?

(Give complete answers here)

16) Why do we normally wear lighter colors in the summer and darker colors in the winter?

_____

_____

17) Why does hotter air rise and cooler air falls? _____

_____

_____

EXTRA CREDIT. Three points. All or nothing. If it is 27 °C today, and it will be twice as cold tomorrow, what will the temperature be tomorrow?