JUBAIL UNIVERSITY COLLEGE

Semester 312

Homework 2 Course: SCI 051, Physics Part

Student Name:_____ I.D:_____ section:

Q.1 Choose the correct answer:

1. Thermal energy that flows from hot object to cold object is called _____.
   a) temperature c) heat
   b) thermal energy d) kinetic energy

2. "Whenever heat flows into or out of a system, the gain or loss of thermal energy equals the amount of heat transferred" is what law of thermodynamics.
   a) First law
   b) Second law
   c) Third law
   d) none of these.

3. A 6 Ω resistance carries 4 amperes. The voltage across the resistor is
   a) Zero
   b) 24 Volt
   c) 1.5 Volt
   d) 0.6 Volt

4. Temperature is generally proportional to a substance's _____.
   a) thermal energy c) average translational kinetic energy
   b) Potential energy d) vibrational kinetic energy.

5. As more lamps are connected to a series circuit, the overall current in the power source
   a) increases.
   b) decreases.
   c) remain the same
   d) None of these.

Q.2 True or False. Underline the wrong word if False and give the correct word on the space provided.

1. Charged atom becomes negative charged when it loose electrons. (False. True)
2. Battery produces alternating current. (False, True)
3. Thick wire gives less resistance. (False, True)
4. At constant voltage, electric current increase as resistance decreases. (False, True)
5. When heat is applied, water warms up faster than sand. (False, True)

Q.3 Answer completely.

1) What is the power rating of a lamp connected to a 10 volt source when it carries 2amper?

2) How is the direction of an electric field of positive and negative charge defined?

3) Which generally expand more for an equal increase in temperature—solids or liquids? Why

4) What is the effect on current through a circuit of constant resistance when the voltage is doubled? What if both voltage and resistance are doubled?

5) To connect a pair of resistance so that their equivalent resistance is less than the resistance of either one, should you connect them in series or in parallel?