Assignment 12
The due date for submitting this assignment is Oct 10.

1. A simple oscillating spring-mass system is set in motion. The mass is 1 kg and the spring constant is 4 N/m. If the mass is displaced by 0.2 m from its equilibrium position and released, what is the period of oscillation? (A) 4.44 s  (B) 4.44 s  (C) 4.44 s

2. Calculate the work done by a force of 3 N over a distance of 5 m. (A) 15 J  (B) 15 J  (C) 15 J

3. The force is a function of the position. Which of the following equations can represent a possible force function? (A) f(x) = 2x  (B) f(x) = 2x  (C) f(x) = 2x

4. State the principle of conservation of energy. (A) The work-energy theorem  (B) The work-energy theorem  (C) The work-energy theorem

5. State the second law of thermodynamics. (A) Conservation of energy  (B) Conservation of energy  (C) Conservation of energy

6. State the first law of thermodynamics. (A) Conservation of energy  (B) Conservation of energy  (C) Conservation of energy

7. A simple pendulum is set in motion. Its length is 1 m and its mass is 0.5 kg. What is the period of oscillation? (A) 1.4 s  (B) 4.44 s  (C) 4.44 s

8. The temperature of a substance increases from 30°C to 50°C. The specific heat capacity of the substance is 0.5 J/g°C. How much heat is absorbed by the substance? (A) 40 J  (B) 40 J  (C) 40 J