Assignment-07

1. A tank contains 500 kg of water at a temperature of 20°C. If the water is heated at a rate of 5°C per minute, how much heat is required to raise the temperature of the water to 100°C?

2. The specific heat of copper is 0.385 J/g°C. How much heat is required to raise the temperature of 200 g of copper from 20°C to 100°C?

3. A 1 kg block of ice at 0°C is placed in a 5 kg block of water at 20°C. What will be the final temperature of the system?

4. A 10 kg tank contains 100 kg of air at a temperature of 30°C. If the air is heated at a rate of 5°C per minute, how much heat is required to raise the temperature of the air to 100°C?

5. A 1 kg block of ice at 0°C is placed in a 5 kg block of water at 20°C. What will be the final temperature of the system?