

Understanding Energy and Heat Transfer

Physics · Answer Key · 15 Questions

1. What is the unit used to measure energy and work?

- A) Watts
- B) Joules**
- C) Newtons
- D) Amperes

2. Which type of energy is stored in a stretched or compressed object?

- A) Kinetic
- B) Gravitational Potential
- C) Elastic Potential**
- D) Chemical

3. What is the law that states energy cannot be created or destroyed, only transformed?

- A) Law of Gravity
- B) Law of Motion
- C) Law of Conservation of Energy**
- D) Law of Thermodynamics

4. Which method of heat transfer occurs through collisions between particles in solids?

- A) Convection
- B) Radiation
- C) Conduction**
- D) Evaporation

5. What type of energy is possessed by objects due to their motion?

- A) Kinetic energy**
- B) Potential energy
- C) Thermal energy
- D) Nuclear energy

6. Which heat transfer method does not require particles to travel and can move through a vacuum?

- A) Conduction
- B) Convection
- C) Radiation**
- D) Sublimation

7. What is the measure of the total kinetic energy of particles in an object?

- A) Temperature
- B) Thermal energy**
- C) Pressure
- D) Density

8. In an open system, what can be transferred to the surroundings?

- A) Only energy
- B) Only matter
- C) Both matter and energy**
- D) Neither matter nor energy

9. What type of energy is stored in the chemical bonds of substances like food?

- A) Nuclear
- B) Chemical potential**
- C) Electrical
- D) Mechanical

10. Which term describes the movement of heat in liquids and gases due to density differences?

- A) Conduction
- B) Radiation
- C) Convection**
- D) Insulation

11. What do we call a system that allows energy transfer but not matter transfer to its surroundings?

- A) Open system
- B) Closed system**
- C) Isolated system
- D) Simulated system

12. What is the energy stored inside the nucleus of an atom called?

- A) Atomic energy
- B) Chemical energy
- C) Nuclear energy**
- D) Electrical energy

13. How is efficiency calculated for an energy device?

- A) Total input / Useful output
- B) Useful output / Total input**
- C) Useful output x Total input
- D) Total input - Useful output

14. When a light bulb is turned on, what is the primary useful output energy?

- A) Heat
- B) Sound
- C) Light**
- D) Chemical

15. What happens to particles in a substance when it is heated?

- A) They slow down
- B) They vibrate faster**
- C) They stop moving
- D) They lose mass