

Chapter
Test

Energy

I. Testing Concepts

Directions: Determine whether the italicized term makes each of the following statements true or false. If the statement is true, write **true** in the blank. If the statement is false, write in the blank the term that makes the statement true.

- _____ 1. Energy in the form of motion is *potential* energy.
- _____ 2. The greater *mass* a moving object has, the more kinetic energy it has.
- _____ 3. A rock at the edge of a cliff has *kinetic* energy because of its position.
- _____ 4. Friction causes some mechanical energy to change to *thermal* energy.
- _____ 5. Energy that is stored is *kinetic* energy.
- _____ 6. *Mass* is measured in joules.
- _____ 7. Doubling an object's velocity will *double* its kinetic energy.
- _____ 8. *Chemical potential* energy is energy stored in chemical bonds.
- _____ 9. *Thermal* energy is energy stored by things that stretch or compress.
- _____ 10. A book and a feather sitting next to each other on a shelf have *different* potential energies.
- _____ 11. Two copies of the same book are in a book case. One book is twice as high as the other. They have *the same* potential energy.
- _____ 12. A toaster uses *chemical* energy to make toast.
- _____ 13. *Mechanical* energy is the total amount of potential and kinetic energy in a system.
- _____ 14. When a plant falls from a window its *thermal* energy is transformed into kinetic energy.
- _____ 15. The *law of conservation of energy* states that although energy can change forms it can never be created or destroyed.

Directions: In the blank at left, write the letter of the term or phrase that correctly answers each question or best completes each statement.

- _____ 16. Which of the following is not used to calculate kinetic energy?
- | | |
|-----------|-------------|
| a. mass | c. height |
| b. weight | d. velocity |
- _____ 17. Which of the following is not used to calculate potential energy?
- | | |
|-------------------------------|-------------|
| a. mass | c. height |
| b. gravitational acceleration | d. velocity |

Chapter Test (continued)

- _____ 18. Thermal energy is measured in _____.
a. joules b. N c. °C d. j/kg
- _____ 19. The _____ energy of an object increases with its height.
a. chemical c. thermal
b. kinetic d. potential
- _____ 20. The kinetic energy of an object increases as its _____ increases.
a. height above Earth c. potential energy
b. velocity d. volume
- _____ 21. Mechanical energy is the total kinetic and _____ energies in a system.
a. thermal b. chemical c. potential d. electrical
- _____ 22. _____ can cause kinetic energy to change into thermal energy.
a. friction b. gravity c. potential energy d. heat
- _____ 23. Green plants convert light energy from the sun into _____.
a. gravitational potential energy c. thermal energy
b. chemical potential energy d. mechanical energy
- _____ 24. The mechanical energy of a coconut falling from a tree _____.
a. doesn't exist b. increases c. decreases d. remains constant
- _____ 25. The law of _____ states that energy in a system can change forms but can never be created or destroyed.
a. conversion of energy c. conservation of energy
b. consecration of energy d. construction of energy

II. Understanding Concepts

Directions: Read the paragraph below. Use the information in the paragraph to answer questions 1 through 4.

A carpenter lifts a 10-kg piece of wood to his shoulder 1.5 m above the ground. He then sets the wood on his truck at 1.0 m above the ground and makes his delivery going 10 m/s.

1. a. What is the wood's potential energy on the carpenter's shoulder? _____
b. On the truck? _____
2. What is the wood's kinetic energy during the delivery? _____
3. If the wood drops from the carpenter's shoulder, what would its maximum kinetic energy be? (Hint: Use the law of conservation of energy.) _____