

Energy Notebook Check

True/False

Indicate whether the statement is true or false.

- ___ 1. Energy from the Sun and energy from food are just different forms of the same thing.
- ___ 2. Conduction is the transfer of energy by the bulk movement of matter.
- ___ 3. Energy is measured in joules.
- ___ 4. Carbohydrates and fats provide our bodies with energy in the form of calories.
- ___ 5. Solar energy can be changed into thermal energy without any work being done.
- ___ 6. Winds are examples of convection currents.
- ___ 7. When you ride a playground swing, your potential energy is greatest at the highest point.
- ___ 8. Radiation is the transfer of energy in the form of particles.
- ___ 9. In a car engine, burning fuel produces heat, which causes gases to expand, producing kinetic energy.
- ___ 10. As an object falls its potential energy is lost to the air around it.
- ___ 11. Lowering an object decreases its potential energy.
- ___ 12. In a forced-air heating system, the warm air circulates by convection.

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

- ___ 13. Energy stored in food you eat is chemical potential energy. _____
- ___ 14. According to the law of conservation of energy, mechanical energy can be changed to heat energy.

- ___ 15. Energy that is stored is kinetic energy. _____
- ___ 16. When you put on the brakes of a bicycle, friction causes some of the mechanical energy to change to thermal energy. _____
- ___ 17. According to the law of conservation of energy, energy can be created or destroyed.

- ___ 18. A rock at the edge of a cliff has kinetic energy because of its position. _____
- ___ 19. Energy is measured in joules. _____
- ___ 20. Energy in the form of motion is potential energy. _____
- ___ 21. Compression energy is stored in a stretched rubber band. _____
- ___ 22. A book sitting on a shelf has gravitational potential energy. _____

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 23. Which of the following devices does not make use of electrical energy?
- radio
 - toaster
 - upright piano
 - digital camera
- ____ 24. In a nuclear fusion reaction, mass is transformed into ____.
- nuclei
 - matter
 - light
 - energy
- ____ 25. You can calculate gravitational potential energy by using the equation ____.
- $GPE (J) = 1/2 h (m) \times w (m)$
 - $GPE (J) = 1/2 m (kg) \times 1/2 h (m)$
 - $GPE (J) = h (m) \times 9.8 m/s^2$
 - $GPE (J) = m (kg) \times 9.8 m/s^2 \times h (m)$
- ____ 26. A bus engine transfers chemical potential energy into ____ so that the bus moves.
- kinetic energy
 - gravitational potential energy
 - thermal energy
 - electrical energy
- ____ 27. You can calculate kinetic energy by using the equation ____.
- $KE (J) = m (kg) \times 9.8 m/s^2 \times h (m)$
 - $KE (J) = w (m) \times h (m)$
 - $KE (J) = 1/2 m (kg) \times v^2 (m^2/s^2)$
 - $KE (J) = 9.8 m/s^2 \times 1/2 m (kg)$
- ____ 28. Energy from the Sun travels to Earth as ____.
- radiant energy
 - chemical energy
 - mechanical energy
 - combustion
- ____ 29. Can you identify the item that is not a form of energy?
- echolation
 - nuclear
 - chemical
 - light
- ____ 30. Which of the following statements is false?
- Matter can be converted into energy.
 - Energy can be converted into matter
 - Energy can be converted into matter, and matter can be converted into energy.
 - Matter can be converted into energy, but energy cannot be converted into matter.
- ____ 31. All of the following are good conductors of heat EXCEPT ____.
- air
 - silver
 - aluminum
 - copper
- ____ 32. Which of the following is characteristic of work?
- Work is done when a force acts on an object and moves that object some distance
 - Work is done when a force acts on an object but does not move the object.
 - Work is done when an object moves without the application of force.
 - Work is does not involve the transfer of energy
- ____ 33. The transfer of energy that does NOT require matter is ____.
- combustion
 - radiation
 - conduction
 - convection
- ____ 34. According to the law of conservation of energy, the total amount of energy in the universe ____.
- changes constantly
 - remains constant
 - decreases
 - increases
- ____ 35. The SI unit for energy is the ____.
- calorie
 - kilogram
 - joule
 - meter per second
- ____ 36. Which of the following is a characteristic of energy transformations?
- Energy is destroyed when matter is burned.
 - The total amount of energy in a system increases with each transformation

- b. Energy can be created out of nothing if the conditions are right
- d. The total amount of energy in a system remains constant with each transformation