What Are the Forms of Energy?

Worksheet

The forms of energy are kinetic (motion), potential (position or state), thermal (heat), chemical (bonds), electrical (charge flow), electromagnetic/radiant (light), nuclear (atomic bonds), and sound. Energy can convert between these forms but the total amount is always conserved.

Questions

1. Which form of energy does a stretched rubber band have?

A) Kinetic energy
B) Elastic potential energy
C) Thermal energy
D) Nuclear energy

2. What type of energy is released when wood burns?

A) Nuclear energy
B) Electrical energy
C) Chemical energy
D) Sound energy

3. A car moving at high speed mainly has which energy?

A) Potential energy
B) Kinetic energy
C) Nuclear energy
D) Chemical energy only

4. According to the law of conservation of energy...

A) Energy can be created
B) Energy can be destroyed
C) Energy only changes form, total stays constant
D) Energy disappears over time

5. A 5 kg ball moves at 4 m/s. Find its kinetic energy.

6. A 2 kg book sits on a shelf 10 m high (g = 9.8 m/s). Find its gravitational potential energy.

7. A 100 W light bulb runs for 2 hours. How much electrical energy does it use?

8. Define: What is kinetic energy?

9. Define: What is potential energy?

10. Define: What is thermal energy?

Answer Key

1. B) Elastic potential energy - A stretched rubber band stores elastic potential energy due to its deformation.
2. C) Chemical energy - Burning wood releases chemical energy stored in molecular bonds as heat and light.
3. B) Kinetic energy - Motion means kinetic energy: KE = mv.
4. C) Energy only changes form, total stays constant - Energy is never created or destroyed, only converted between forms.
5. KE = mv KE = 5 4 = 5 16 KE = 40 J
6. PE = mgh PE = 2 9.8 10 PE = 196 J
7. E = P t t = 2 h = 7200 s E = 100 7200 = 720,000 J = 720 kJ (or 0.2 kWh)
8. Energy of motion: KE = mv.
9. Stored energy due to position or state, e.g. gravitational PE = mgh.
10. The energy of moving/vibrating particles within a substance, related to temperature.