

## Work and Energy Exercise

## 1. What is work?

- When a force is applied to an
- a) **object and the object moves in the direction of the force.** ✓
  - b) Can be transferred from 1 object to another or can be transformed from one to another.
  - c) Work is there when energy is being created.
  - d) The total effort that is being put into something.

## 2. What do the arrows in a Sankey diagram represent?

- The flow of work. Their width
- a) proportional to the quantity being transferred.
  - b) The flow of energy. The wider the arrow, the faster something moves.
  - c) The flow of work. The wider the arrow, the faster something moves.
  - d) **The flow of energy. Their width proportional to the quantity being transferred.** ✓

## 3. What is the formula of work?

- a)  $W = \frac{1}{2} \times m \times v^2$
- b)  $W = w/t$
- c)  **$W = f \times d$**  ✓
- d) Useful output energy/Total input energy  $\times 100\%$

## 4. What is sustainable energy?

- Sustainable energy is renewable, clean, and long-term
- a) **cost-effective energy sources with little negative impact on the environment and society.** ✓
  - b) Sustainable energy is renewable, clean, and long-term cost-effective energy sources with no negative impact on the environment and society.
  - c) Sustainable energy is a type of energy that can be created or destroyed.
  - d) Sustainable energy is a type of energy that never runs out.

## 5. Which of the below is a type of energy? (2 correct answers)

- a) Gravity Energy
- b) **Thermoelectric Energy** ✓
- c) Cold Energy
- d) Quantum Energy

## 6.

Which is the true statement of potential energy?

- a) Potential energy is the energy of motion.
- b) Potential energy is energy that only exists when a person is moving.
- c) Potential energy is the energy that is stored in an object due to its position ✓
- d) Potential energy is the energy of an object when it's at absolute zero temperature.

7. What is the unit of energy?

- a) Watts (W)
- b) Joules per second (J/s)
- c) Kilowatts per hour (kWh)
- d) Joules (J) ✓

8. What is not an example of sustainable energy?

- a) Solar Panels
- b) Wind Turbines
- c) Coal ✓
- d) Algae Biofuel

9. What formula is  $\frac{\text{Useful output energy}}{\text{Total input energy}} \times 100\%$  for?

Efficiency

10. What is the input in a Sankey diagram?

Energy

11. What is chemical energy and give an example of chemical energy!

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12. What is conservation of energy and what is the example?

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Chemical energy is the energy that is stored in a chemical substance. The energy is released when there is a chemical reaction. Example; batteries and combustion.

Conservation energy is a principle that states that energy can't be created or destroyed, but can be transformed from one form to another with the same amount of total energy. For example when you drop a ball, its potential energy converts to kinetic energy as it falls, but the total energy remains the same throughout the process.