

Work and Energy

Multiple Choice Questions

Question 1.

When a body falls freely towards the earth, then its total energy:

- (a) increases
- (b) decreases
- (c) remains constant
- (d) first increases and then decreases

▼ [Answer](#)

Answer: (c) remains constant

Question 2.

In case of negative work, the angle between the force and displacement is:

- (a) 0°
- (b) 45°
- (c) 90°
- (d) 180°

▼ [Answer](#)

Answer: (d) 180°

Question 3.

Water stored in a dam possesses:

- (a) no energy
- (b) electrical energy
- (c) kinetic energy
- (d) potential energy

▼ [Answer](#)

Answer: (d) potential energy

Question 4.

Which one of the following is not the unit of energy?

- (a) Joule
- (b) Newton meter
- (c) Kilowatt
- (d) Kilowatt hour

▼ [Answer](#)

Answer: (c) Kilowatt

Question 5.

A body is falling from a height h , After it has fallen a height $\frac{h}{2}$, it will possess:

- (a) only potential energy
- (b) only kinetic energy
- (c) half potential and half kinetic energy
- (d) more kinetic and less potential energy

▼ [Answer](#)

Answer: (c) half potential and half kinetic energy

Question 6.

The capacity of a body to perform work is called:

- (a) Energy
- (b) Work
- (c) Power
- (d) Heat

▼ [Answer](#)

Answer: (a) Energy

Question 7.

The rate of work done is called:

- (a) Energy
- (b) Power
- (c) Capacity
- (d) All of these

▼ [Answer](#)

Answer: (b) Power

Question 8.

The capacity to perform work is obtained from :

- (a) Food
- (b) Energy
- (c) Power
- (d) All of these

▼ [Answer](#)

Answer: (b) Energy

Question 9.

An object of mass, m moving with velocity v has a kinetic energy of:

- (a) $\frac{1}{2}mv^2$
- (b) mgh
- (c) $\frac{2m}{v^2}$
- (d) $2mv^2$

▼ [Answer](#)

Answer: (a) $\frac{1}{2}mv^2$

Question 10.

The gravitational potential energy of an object of mass, m raised through a height, h from the earth's surface is given by:

- (a) $\frac{1}{2} mv^2$
- (b) mgh
- (c) $\frac{1}{2} mgh$
- (d) $2mgh$

▼ [Answer](#)

Answer: (b) mgh

Question 11.

If the displacement of the object is zero then the work done on an object by a force would be:

- (a) 1 Joule
- (b) 0.1 Joule
- (c) 3.6×10^6 Joule
- (d) zero

▼ [Answer](#)

Answer: (d) zero

Question 12.

What is the energy possessed by an object due to its motion?

- (a) Potential energy
- (b) Electrical energy
- (c) Kinetic energy
- (d) None of them

▼ [Answer](#)

Answer: (c) Kinetic energy

[Fill in the Blanks.](#)

Question 13.

1 kJ equals _____

▼ [Answer](#)

Answer: 1000 J

Question 14.

_____ formulated a law for the heating effect of electric current.

▼ [Answer](#)

Answer: James Prescott Joule

Question 15.

The kinetic energy of an object _____ with its speed.

▼ [Answer](#)

Answer: increases

Question 16.

An object in motion possesses what is known as the _____ of the object.

▼ [Answer](#)

Answer: kinetic energy

Question 17.

The S.I. unit of power is _____

▼ [Answer](#)

Answer: Watt

Question 18.

The energy total of every system always remains _____

▼ [Answer](#)

Answer: constant

Question 19.

The energy stored in the water-filled in the dam is _____

▼ [Answer](#)

Answer: potential energy

Question 20.

The S.I. unit of kinetic energy is _____

▼ [Answer](#)

Answer: Joule

Question 21.

The S.I. unit of work is _____

▼ [Answer](#)

Answer: Joule

Question 22.

The rate of work done is called _____

► [Answer](#)

[True/False.](#)

Question 23.

The energy used in one hour at the rate of 1 kW is called 1 kWh.

▼ [Answer](#)

Answer: True

Question 24.

James Prescott Joule is best known for his research in electricity and thermodynamics.

▼ [Answer](#)

Answer: True

Question 25.

Any object that does not possess energy can do work.

▼ [Answer](#)

Answer: False

Question 26.

The unit of energy is, the same as that of work.

▼ [Answer](#)

Answer: True

Question 27.

Work = Force $\times$ Displacement along the direction of the force.

▼ [Answer](#)

Answer: True

Question 28.

The formula of kinetic energy is $E_K = mgh$.

▼ [Answer](#)

Answer: False

Question 29.

Work is a vector quantity.

▼ [Answer](#)

Answer: False

Question 30.

The unit of energy in the C.G.S. system is erg.

▼ [Answer](#)

Answer: True

Question 31.

The palm gets warmed while rubbing due to performing work.

▼ [Answer](#)

Answer: True

Question 32.

Work has only magnitude and no direction.

▼ [Answer](#)

Answer: True

[Match the Column.](#)

Question 33.

A B

- | | |
|--------------------|--------------------------------------|
| 1. 1 Joule | (i) Scalar quantity |
| 2. Work | (ii) 746 Watt |
| 3. Power | (iii) Force $\times$
Displacement |
| 4. 1
horsepower | (iv) 1 Newton $\times$ 1 meter |
| 5. Energy | (v) Work/Time |

▼ [Answer](#)

Answer:

- | A | B |
|--------------------|--------------------------------------|
| 1. 1 Joule | (iv) 1 Newton $\times$ 1 meter |
| 2. Work | (iii) Force $\times$
Displacement |
| 3. Power | (v) Work/Time |
| 4. 1
horsepower | (ii) 746 Watt |
| 5. Energy | (i) Scalar quantity |
-

[Answer in one Word/Sentence.](#)

Question 34.

Is work done or energy a scalar or a vector quantity?

▼ [Answer](#)

Answer: Scalar

Question 35.

Is power is a scalar or a vector quantity?

▼ [Answer](#)

Answer: Scalar

Question 36.

Who verified experimentally the law of conservation of energy and discovered the value of the mechanical equivalent of heat?

▼ [Answer](#)

Answer: James Prescott Joule

Question 37.

Write an expression for the kinetic energy of an object.

▼ [Answer](#)

Answer: Kinetic energy, $E_K = \frac{1}{2} mv^2$

Question 38.

What is called the sum of the kinetic and potential energies of an object?

▼ [Answer](#)

Answer: Mechanical energy

Question 39.

Write the S.I. unit of power.

▼ [Answer](#)

Answer: Watt

Question 40.

What is defined as the capacity of doing work?

▼ [Answer](#)

Answer: Energy
