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 × 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 × Displacement
4. 1 horsepower	(iv) 1 Newton × 1 meter
5. Energy	(v) Work/Time

▼ Answer

Answer:

A	B
1. 1 Joule	(iv) 1 Newton × 1 meter
2. Work	(iii) Force × 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
