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°

Ouestion 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

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

▼ Answer

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

Ouestion 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) $\frac{1}{2} \text{ mv}^2$ (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.		





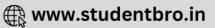
Answer: James Prescott Joule		
Question 15. The kinetic energy of an object with its speed.		
▼ Answer		
Answer: increases		
Question 16. An object in motion possesses what is known as the of the object.		
▼ Answer		
Answer: kinetic energy		
Question 17. The S.I. unit of power is		
▼ Answer		
Answer: 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.





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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.

Ouestion 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

Ouestion 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, $E_K = \frac{1}{2} \text{ mv}^2$

Ouestion 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

