

# Work and energy 9th class important questions

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## One Mark short answer questions

1. What is the work done by a force equal to?
2. Name two factors on which kinetic energy depends.
3. What is the commercial unit of energy?
4. Relate 1 kWh with joule.
5. State the law of conservation of energy.
6. Why do we say work done against gravity is negative?
7. What is average power?
8. When the speed of a body is doubled, what is the change in its kinetic energy?
9. What is the difference between potential energy and kinetic energy?
10. What change should be affected in the velocity of the body to maintain same kinetic energy if its mass is increased two times?
11. Difference between energy and power?
12. A machine does 2060 joule of work in 4 minutes. What is its power?
13. Can a body have energy without momentum?
14. What is the relation between kinetic energy and momentum?
15. Is it necessary for force to do work always?
16. Name two forms of mechanical energy.
17. When is the work done by a force (a) positive (b) negative (c) zero?
18. Give example of Kinetic energy.
19. Which form of energy does the flowing water possess?
20. What is the unit of power?
21. A light and heavy body have equal momenta. Which one has greater kinetic energy?

## True and False questions

1. If air resistance is negligible, the sum total of potential and kinetic energies of a freely falling body remains constant
2. Work is a vector quantity
3. Power is a scalar quantity
4. Momentum is a vector quantity
5. KWh is the unit of power
6. An object moving in a circular orbit. The work done by the centrepetal force acting on the object is non zero
7. kinetic energy of the body can be negative

## Fill in the blanks

1. Force acting on a body shows a displacement in the direction normal to the direction of the force. It is said \_\_\_\_\_ done on the body.
2. Force acting on a body shows a displacement in the direction of the force. It is said \_\_\_\_\_ is done on the body.
3. Work done is defined as the product of \_\_\_\_\_ and \_\_\_\_\_ in the direction of force.
4. SI Unit of work is \_\_\_\_\_.
5.  $1 \text{ kWh} = \text{_____ J}$
6. Work done on an object is \_\_\_\_\_ if displacement is zero.
7. Work done is + when the angle between force and displacement is \_\_\_\_\_
8. Work done is i when the angle between force and displacement is \_\_\_\_\_
9. Work done against a force is stored as \_\_\_\_\_.
10. Ability to do work is called \_\_\_\_\_.
11. Ability of a body to do work due to its position or configuration is known as \_\_\_\_\_ of the body.
12. A form of energy an object has because of its motion is called \_\_\_\_\_.
13. A stretched springs acquires \_\_\_\_\_ (potential/kinetic) energy.

14. Work done against gravity in lifting a mass is stored as \_\_\_\_\_. Numerically, it is equal to  $m \times \_ \times \_$ .
15. Work done by gravity on a falling body is available as \_\_\_\_\_ (kinetic/potential) energy on reaching the ground.
16. if mass is  $m$  and velocity is  $v$ , then Kinetic Energy =  $\frac{1}{2} \times \_ \times \_$
17. If the mass is tripled while its speed remains the same, the kinetic energy will be \_\_\_\_\_ of the initial kinetic energy.
18. The sum of P.E. and K.E. is called \_\_\_\_\_.
19. The other name of Nm is \_\_\_\_\_.
20. A body of mass 6 kg is dropped from the height of 1m. The kinetic energy of the body will be ----- when it touches the ground
21. Two objects of masses 2Kg and 3Kg have equal momentum. The ratio of their kinetic energies is .....
22. Two bodies of masses  $a$  and  $b$  have equal kinetic energies. If  $x$  and  $y$  are their respective momentum, then ratio  $x : y$  is ....
23. If the speed of an object is doubled then its kinetic energy is \_\_\_\_\_
24. The type of energy possessed by a simple pendulum, when it is at the mean position is \_\_\_\_\_
25. the physical quantity which is equal to the product of force and velocity is .....