



# DELHI PUBLIC SCHOOL, SAIL TOWNSHIP RANCHI

## ASSIGNMENT (PHYSICS – IX) , SESSION- 2018-19

### INSTRUCTIONS:-

- A) The work mentioned below has to be done in A<sub>4</sub> sheets properly filed and presentable.
  - B) This work has to be submitted by 16<sup>th</sup> November 2018.
  - C) This project work will be marked and submitted to the school as evidence.
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*“Diyas are God’s way of telling us that there will be light to drive away darkness ”*

*“An offering of arghya to God sun to thank him for giving sunlight and heat to earth”*

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1. A force of 20 N displaces an object through 2 m in its own direction. Calculate the work done by the force.
  2. An object moves through 4 m on rough surface by applying an external force of 20 N in the direction of displacement. The force of friction between the object and surface is 10 N. Find the work done by applied force and frictional force.
  3. An object moves through 8 m along horizontal direction on applying a force of 15 N at an angle of 60° with horizontal. Find the work done by the force.
  4. A work of 1000 J is done on an object while moving by a force of 100 N. Find the distance through which object is displaced.
  5. A body moving at a speed of 2 m/s has a kinetic energy of 10 J. Find the mass of the body.
  6. An object of mass 2 kg has a kinetic energy of 16 J. Find the speed of the object.
  7. Two objects of masses 2 m and m are moving with velocities  $v$  and  $2v$ , respectively. Find the ratio of their kinetic energies.
  8. The velocity of an object changes from 5 m/s to 3 m/s while moving on a rough surface. The mass of the object is 10 kg. Find the work done by frictional force.
  9. A block of 5 kg is allowed to fall from certain height. Find the work done by gravity in one second after the block is dropped.
  10. Calculate the height to which an object of mass 50 kg should be raised, so that its potential energy is 5000 J. ( $g = 10 \text{ m/s}^2$ )
  11. A ball is thrown upward with a kinetic energy of 20 J. Find the mass of the ball if it goes to a maximum height of 2 m.
  12. A body of mass 20 kg is dropped from a height of 20 m. Calculate the kinetic energy of the body just before it touches the ground. What is its speed at this instant? (Take  $g = 10 \text{ m/s}^2$ )
  13. A force 20 N moves a body with a constant velocity of 2 m/s. Calculate the power of the body.
  14. An electric heater rated 1500 W, is used for 10 h everyday. How much energy does it use in the month of June.
  15. The kinetic energy of an object moving with certain velocity is 50 J. What will be its kinetic energy when its (a) velocity is doubled (b) velocity is tripled.
  16. Find the energy in kWh consumed in 10 hours by four devices of power 500 W each.
  17. The power of a motor is 1500 W. How much water per minute can the pump raise to a height of 10 m? (Given  $g = 10 \text{ m/s}^2$ )
  18. A boy does 200 J of work in 10 seconds and a girl does 100 J of work in 4 seconds. Find the ratio of power of boy to that of girl.
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