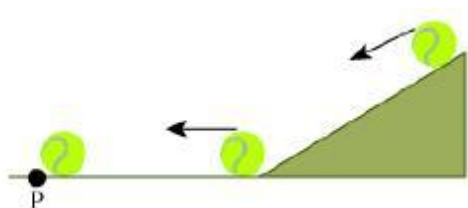


CLASS – IX
PHYSICS
WORK AND ENERGY(ASSIGNMENT I)

1. A spherical ball rolls down a slope of certain height, as shown in the figure.



The ball travels a distance before coming to rest at point P because it acquires

- A :** kinetic energy at the foot of the slope
 - B :** potential energy at the foot of the slope
 - C :** both potential and kinetic energies at the foot of the slope
 - D :** neither potential nor kinetic energy at the foot of the slope
2. Use the following information to answer the next question.
- Daniel got a toy car on his birthday which moves when it is wound up. Daniel observes that the more he winds up the car, the more distance it covers.
- Which of the following statements explains the above observation?
- A :** The winding of the spring stores energy in the spring. This energy gets converted into kinetic energy of the car.
 - B :** The winding of the spring reduces the friction between the tires of the car and the surface.
 - C :** The winding of the spring produces heat energy, which enables the car to move forward
 - D :** The winding of the spring charges the batteries of the car. This enables the car to move forward
3. Define the SI unit of work.

4. What kind of energy transformation takes place when a body is dropped from some height?
5. Name the kind of energy transformation that takes place in the following examples:
 - a) Electric heater
 - b) Dynamo
 - c) Microphone
 - d) Electric cell
 - e) Headphone
6. A body of mass M falls from a height h_1 to a height h_2 , above the ground ($h_1 > h_2$). Then, the change in its potential energy is given by _____.
 - A) $Mg(h_1 - h_2)$
 - B) $Mg(h_1 + h_2)$
 - C) $Mg(h_2 - h_1)$
 - D) $Mg(h_1 \times h_2)$
7. Is it possible to do work on an object that remains at rest?
 - 1) Yes 2) No
8. A ball tied to a string is being whirled around in a circle. What can you say about the work done?
 - 1) no work at all 2) negative work 3) positive work
9. You lift a book with your hand in such a way that it moves upto height h at constant speed., what is the total work done on the book?
 - 1) $mg \times h$ 2) $F_{HAND} \times h$
 - 3) $(F_{HAND} + mg) \times h$ 4) zero 5) none of the above
10. By what factor does the kinetic energy of a car change when its speed is tripled?
 - 1) no change at all 2) factor of 3
 - 3) factor of 6 4) factor of 9 (5) factor of 12.
11. Two stones, one twice the mass of the other, are dropped from a cliff. Just before hitting the ground, what is the kinetic energy of the heavy stone compared to the light one?
 - 1) quarter as much 2) half as much
 - 3) the same 4) twice as much 5) four times as much
12. Is it possible for the gravitational potential energy of an object to be negative?
 - 1) yes 2) no

13. What will be the work done by a force if displacement of the body is zero?
14. When is work done on a body positive?
15. What are the conditions where the work can be zero?
16. Why work done is zero in satellite moving in circular path?
17. Define average power?