

PHYSICS
WORK AND ENERGY

I. (Continuation):-

17. Illustrate the law of conservation of energy by discussing the energy changes which occur when we draw a pendulum bob to one side and allow it oscillate. Why does the bob eventually come to rest? What happens to its energy eventually? Is it a violation of the law of conservation of energy?

Ans. When a bob of simple pendulum oscillate in air the air friction opposes its motion. As a bob of pendulum strikes the air molecule, kinetic energy of the bob is converted into a heat energy.

The amplitude of pendulum decreases and finally it stops. Here one form of energy is converted into another form of energy. So the law of conservation of energy is not violated.

18. Soni says that the acceleration in an object could be zero when several forces are acting on it. Do you agree with her? Why?

Ans. Yes, she is right because several forces acting on an object and balanced force their result i.e zero (0). Then there is no acceleration of the object.

19. A freely falling object eventually stops on reaching the ground. What happens to its kinetic energy?

Ans. A freely falling object before hitting the ground has maximum kinetic energy after falling, it rolls on kinetic energy and finally comes to rest.

The kinetic energy of an object is used up in doing work against it is used up in doing work against friction.