# ATOMIC ENERGY CENTRAL SCHOOL,ANUPURAM

## CH-6 Work Power and Energy(Handout 2/6)



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- **Energy**

The energy of a body is its capacity to do work. Anything which is able to do work is said to possess energy. Energy is measured in the same unit as that of work, namely, Joule.

Mechanical energy is of two types: Kinetic energy and Potential energy.

- **Kinetic Energy**

The energy possessed by a body by virtue of its motion is known as its kinetic energy.

For an object of mass m and having a velocity v, the kinetic energy is given by:

K.E. or $K = 1/2 \ mv^2$

- **Potential Energy**

The energy possessed by a body by virtue of its position or condition is known as its potential energy.

- There are two common forms of potential energy: gravitational and elastic.
  : Gravitational potential energy of a body is the energy possessed by the body by virtue of its position above the surface of the earth. It is given by
  (U)P.E. = mgh
  where m = mass of a body
  g= acceleration due to gravity on the surface of earth. h =height through which the body is raised.
  When an elastic body is displaced from its equilibrium position, work is needed to be done against the restoring elastic force. The work done is stored up in the body in the form of its elastic potential energy.
  If an elastic spring is stretched (or compressed) by a distance Y from its equilibrium position, then its elastic potential energy is given by
  $U = 1/2\ kx^2$

- **Work-Energy Theorem**

  According to work-energy theorem, the work done by a force on a body is equal to the change in kinetic energy of the body.