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1) How is work related to energy?

Ans- "Energy is the capacity of doing work".
Every form of energy is work. That is work done on body is stored in the form of Energy. Energy is spent when a body does work. Thus to do more amount of work, more energy is needed.

2) What is potential energy? State its unit.

Ans- Potential Energy :- (P.E or V)
"The energy possessed by a body due to its state of rest or position."
The unit of P.E = Joule (J)

3) Give one example of a body that has potential energy, in each of the following:

a) due to its position at a height:

Ans- Water at a height has P.E. stored in it. Falling water from a height can be used to do

work like turning a wheel.

b) Due to its elongated stretched state.

Ans- P.E. due to stretched rubber band has potential energy. It does work in restoring itself to its original state. A pebble placed on the stretched rubber catapult, is thrown away when it is released to restore its original state.

4) State two factors on which the potential energy of a body at a certain height above the ground depends.

Ans- Potential energy = mgh

P.E = m x h x g

g is constant depends upon m and h

Two factors on which P.E. depends:

i. Mass: Greater the mass, greater is P.E.

ii. Height Above the Ground: Higher the height of body, greater is P.E.

5) A body of mass m is moved from ground to a height h. If force of gravity on mass of 1kg is g newton, find:

a. The force needed to lift the body,

Ans- When a body of mass m at A on ground is raised above ground through height h at B force is applied.

This force applied = Weight of body

Force on mass m = F = mg

Where 'g' is the force of gravity on a mass of 1 kg.

b. The work done in lifting the body

Ans- Work done in lifting the body

= Force X displacement h

$\Rightarrow W = mg \times h$

c. The potential energy stored in the body.

Ans- This work done W is stored in body in the form of Potential energy P.E. mgh.

6) Name the type of energy (kinetic or potential) possessed by the

following:

a. A moving cricket ball: Due to motion possesses Kinetic Energy.

b. A stone at rest on the top of a building: Possesses potential energy due to height above ground.

c. A compressed spring: possesses potential energy due to changed position of spring.

d. A moving bus: Possesses Kinetic energy.

e. A bullet fired from a gun: Possesses Kinetic energy

f. Water flowing in a river: Possesses Kinetic energy due to motion.

g. A stretched rubber band: possesses potential energy due to changed position.

X