

H.W

① How is work related to energy?

ans → Work is nothing but the force. Energy is always transferred ~~to~~ to an object for motion. This transfer of energy is done when force is applied. Therefore we can say that work is related to energy.

② What is potential energy? state its unit.

ans → Potential energy is the energy possessed by an object due to its state of rest or motion.

→ SI unit of P.E is Joules (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 → position at a height stores gravitational potential energy.

e.g. → A rock lying on the top of hill.

b) due to its elongated stretched state.

ans → rubber band.

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

ans → ~~Gravity~~ and Potential energy of a body at a certain height depends on mass of the body and height from ground.

Q A body of mass m is moved from ground to a height. If force of gravity on mass of 1 kg is $g \text{ newton}$.

a) Find the force needed to lift the body.

sol: Force of ~~grav~~ on 1 kg body = $g \text{ newton}$
" on $m \text{ kg}$ body = $(g \times m) \text{ newton}$

b) Find the work done in lifting the body.

sol: Work done = Force \times distance moved
 $= mg \times h$
 $= mgh$

c) Find the potential energy stored in the body.

sol: P.E = mgh

\therefore The work done is stored in body as potential energy.

6) Name the type of energy (Kinetic or potential) possessed by the following:

- a) A moving cricket ball = Kinetic energy
- b) A stone at rest on top of building. = Potential energy
- c) A compressed spring. = Potential energy
- d) A moving bus = Kinetic energy
- e) A bullet fired from gun = Kinetic energy
- f) Water flowing in a river = Kinetic energy
- g) A stretched rubber band. Potential energy.