

Home Work

1. How is work related to energy?

Ans - The work done on a body in changing its state is said to be the energy possessed by the body.

2. What is potential energy? state its unit.

Ans - Potential energy of a body is the energy possessed by it due to its state of rest or position. This is equal to the work done on the body to bring it to that state of rest or position. Its unit is Joule.

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 - A rock lying on top of a high hill has potential energy.

b. Due to its elongated stretched state.

Ans - A stretched rubber band has potential energy.

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

Ans - The potential energy of a body in the raised position depends upon the following two factors:

i) The mass of the body

ii) ~~Its~~ Its height above the ground.

5. A body of mass m is moved from ground to a height h . If force of gravity on mass of 1 kg is 9 newton ,

a. Find the force needed to lift the body.

ans- Force needed $F = Mg \text{ N}$

b. Find the work done in lifting the body.

ans- work done $W = \text{force} \times \text{distance moved}$
 $= mg \times h \text{ Joule}$

c. Find the potential energy stored in the body.

ans- Gravitational potential energy,
 $P.E. \text{ (or } U) = mgh$

6. Name the type of energy (Kinetic or Potential)

a) A moving cricket ball Ans- Kinetic

b) A stone at rest on the top of a building Ans- Potential

c) A compressed spring Ans- Potential

d) A moving bus Ans- Kinetic

e) A bullet fired from a gun Ans- Kinetic

f) Water flowing in a river Ans- Kinetic

g) A stretched rubber band Ans- Potential.