

PHYSICAL SCIENCE

CLASS - IX

Chapter : Work, Power & Energy

1. Which type of mechanical energy can be negative? Explain.

Ans . Mechanical energy is of two types – (i) Potential Energy; (ii) Kinetic Energy.

Kinetic energy cannot be negative, since kinetic energy = $\frac{1}{2}mv^2$, where m = mass of the body and v = velocity of the body. Here m and v² both are always positive.

Potential energy can be negative, since gravitational potential energy = mgh where g = acceleration due to gravity and h = height of the body from reference plane.

If the body is above the reference plane, then h is positive and gravitational potential energy is positive. If the position of the body is below the reference plane, then h is negative. As a result gravitational potential energy is negative.

2. If there is more work, will there be more power? Explain.

Ans. Since, Power = $\frac{\text{Work done}}{\text{Time}}$

So, power will be more if more work is done in a given time. Or same work is done in a shorter time.

If there is more work, there will not be always more power. If more time is required to do the work, in that case power will be less.