Answer on Question #42789 – Physics – Mechanics | Kinematics | Dynamics

Simple harmonic motion takes place under
(a)non conservative force
(b)constant force
(c)conservative force
(d)both conservative and constant force

Solution:

The oscillations of a system in which the net force can be described by Hooke's law are of special importance, because they are very common. They are also the simplest oscillatory systems.

Simple Harmonic Motion (SHM) is the name given to oscillatory motion for a system where the net force can be described by Hooke's law , and such a system is called a simple harmonic oscillator.

If the net force can be described by Hooke's law (spring force is **conservative**, hence strain potential energy) and there is no damping (by friction or other non-conservative forces), then a simple harmonic oscillator will oscillate with equal displacement on either side of the equilibrium position.

In a free oscillation, since the only force doing work is **conservative** the total mechanical energy (KE + PE) of the system is a constant.

Answer: (c)conservative force