WORK POWER ENERGY

A body is acted upon by a force which is inversely proportional to the distance covered. The work done will be proportional to:

(A) s (B) s^2 (C) $\sqrt{s}$ (D) None of these

If the kinetic energy of a body is directly proportional to time t, the magnitude of the force acting on the body is:

(A) directly proportional to $\sqrt{t}$ (B) inversely proportional to $\sqrt{t}$

(C) directly proportional to the speed of the body (D) inversely proportional to the speed of the body

The kinetic energy of a particle continuously increases with time

(A) the resultant force on the particle must be parallel to the velocity at all instants

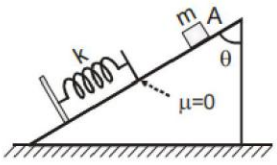
(B) the resultant force on the particle must be at an angle less than 90° all the time

(C) its height above the ground level must continuously decrease

(D) the magnitude of its linear momentum is increasing continuously

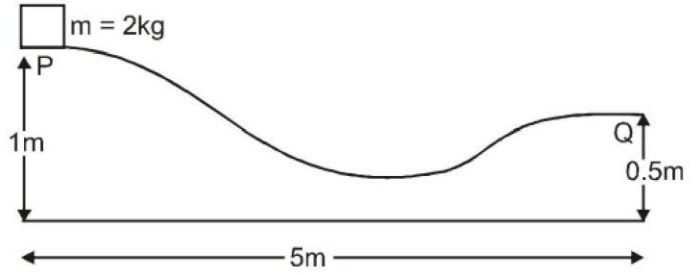
A block of mass 'm' is released from rest at point A. The compression in spring, when the speed of block is maximum :

(A) $\frac{mg\sin\theta}{k}$ (B) $\frac{2mg\sin\theta}{k}$



(C) $\frac{mg\cos\theta}{k}$ (D) $\frac{mg}{k}$

Find the horizontal velocity of the particle when it reach the point Q. Assume the block to be frictionless. Take g = 9.8 m/s².



(A) 4 m/s (B) 5 m/s (C) $\sqrt{g}$ m/s (D) 3.6 m/s

ANSWER KEY

1.(D) 2.(D) 3.(D) 4.(C) 5.(C)