Date) – 9.12.24

TENDER HEART HIGH SCHOOL, SEC-33B, CHD

CLASS-X ; Subject- PHYSICS

Work-Power and Energy Practice Assignment

(1) The diagram shows a pendulum having a Bob mass 80g. A and C are extreme positions and B is the mean position. The bob has a velocity 5m/s at position B. [g = 10N/kg]

(i) Which one of the statement is correct ?

(a) At point A bob has only K.E.

(b) At pt. B Bob will have only P.E.

(c) At pt. B bob will have maximum K.E.

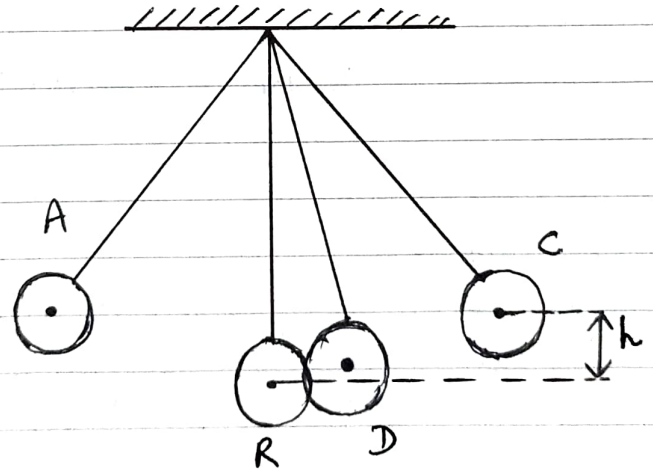
(d) " " D bob " " more P.E and less K.E

(ii) The height h is (a) 1.25cm

(b) 125m

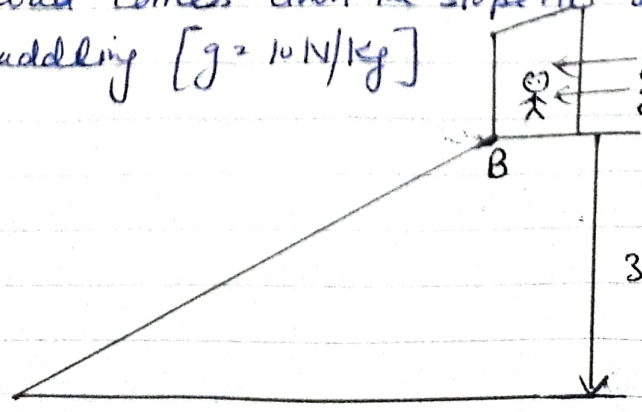
(c) 1.25m

(d) 0.125m



Ans 1.25m

(2) A girl at rest at a gate of her society which is 3.2 m above the road comes down the slope AB on a cycle without paddling [g = 10N/kg]



(i) The mechanical energy possessed by the girl is
(a) Elastical P.E (b) Gravitational P.E

(ii) The velocity with which girl reaches at point A is;
(a) 32 m/s (b) 10 m/s (c) 8 m/s (d) None of these
Ans 8 m/s

(iii) If the mass of the girl is 40 kg then K.E of the girl at A is [Assuming no loss of energy]
(a) 1280] (b) 1600] (c) 400] (d) 3200] Ans 1280]

(iv) The P.E of the girl (of mass 40 kg) when she reaches the mid point of Slope AB.
(a) 800] (b) 200] (c) 1600] (d) 640] Ans 640]

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(3) If A and B of the same mass can climb the third floor of the same building in 3 minutes and 5 minutes respectively; then the ratio of their Powers of A is to B in an ideal situation is
(a) 1:1 (b) 3:5 (c) 5:3 (d) 2:1

Ans 5:3

(4) Give an example of each :—
(a) Chemical Energy changes into Electrical Energy.
(b) Electrical energy changes in to sound Energy.

(5) A girl of mass 35 kg climbs up from the first floor of the building at a height 4m above the ground to the third floor at a height 12m above the ground. What will be the increase in her gravitational potential Energy? ($g = 10 m/s^2$)

Ans (2800])