MOTION (1 D & 2 D)

Q 1) A ball is thrown vertically upwards with an initial speed u from a height h above the ground. The ball eventually hits the ground with a speed v. the acceleration due to gravity is g and the air resistance is negligible.

What is the average speed of the ball

And average velocity of the ball

over its entire trajectory?

a) $\frac{u^2+v^2}{2(u+v)}$ b) $\frac{u+v}{2}$ c) $\frac{gh}{u+v}$ d) $\frac{gh}{2(u+v)}$

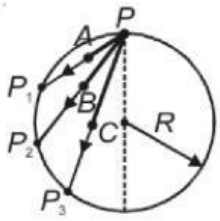
Q2) Time taken by an object falling from rest to cover the height of h_1 and h_2 is respectively t_1 and t_2.

Then $t_1 : t_2$:

(Hint: drag and drop)

h_1 h_2 $\sqrt{h_2}$ $2\,h_1$ $2h_2$ $\sqrt{h_1}$

Q3) There are three smooth wires PP1, PP2 and PP3 tightly stretched on a vertically fixed ring of radius R. three beads A,B and C are free to slide on these wires. If the beads start from the point P, to reach P1,P2 and P3 along the three paths.



Click on the right statements

- a) Average speed of the beads are equal.
- b) They reach their respective destinations in equal time.
- c) The final velocities are directly proportion to cosine angle with the vertical.
- d) Acceleration of beads are identical in magnitude.

Q4) A bird flies for 4s with a velocity of (t-2) m/s in a straight line, where t= time in seconds. It covers a distance of

2 m 4 m 6 m 8 m

VVA RAO ZIET BBSR

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