VIDYA BHAVAN, BALIKA VIDYAPEETH

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SUBJECT:- PHYSICS CLASS:- IXTH DATE:- 20/05/XXI

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 1. (MOTION)(BASED ON NCERT PATTERN)

1. A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of 10 m s^{-2}, with what velocity will it strike the ground? After what time will it strike the ground?

Answer:- Assume, the final velocity with which the ball will strike the ground be 'v'and time it takes to strike the ground be 't' ;

Initial Velocity of ball, u =0

Distance or height of fall, s =20 m

Downward acceleration, a =10 m s^{-2}

As we know, $2as = v^2-u^2$

$v^2 = 2as+ u^2$

= 2 x 10 x 20 + 0. = 400

∴ Final velocity of ball, v = 20 ms^{-1}

t = (v-u)/a

∴Time taken by the ball to strike = (20-0)/10

= 20/10 = 2 seconds

2.. State which of the following situations are possible and give an example for each of these:
(a) an object with a constant acceleration but with zero velocity.

(b) An object moving in a certain direction with acceleration in the perpendicular direction.

Answer: (a) Possible because when a ball is thrown up at maximum height, it has zero velocity, although it will have constant acceleration due to gravity, which is equal to 9.8 m/s2.

(b) Possible because When a car is moving circular track, its ‘a’ is perpendicular to its direction.

NOTE:- MOTION CHAPTER ENDS NOW THROUGH PDF CLASSES. ALL TOPICS INCLUDING NCERT QUESTIONS AND ANSWERS ALONGWITH SOME IMPORTANT S. CHAND QUESTIONS ALLS COMES TO AN END. FROM NEXT CLASS CHAPTER-2 i.e. FORCE & LAWS OF MOTION WILL START.