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SUBJECT:- PHYSICS **CLASS:- IXTH** **DATE:- 16/05/XXI**

SUBJECT TEACHER:- MR. NEEL NIRANJAN

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

1. A stone is thrown in a vertically upward direction with a velocity of 5 m s^{-1}. If the acceleration of the stone during its motion is 10 m s^{-2} in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

Answer: Given Initial velocity of stone, u=5 m s^{-1} , Downward of negative Acceleration, a= 10 m s^{-2}

we know that 2 as= v^2 - u^2

Therefore, Height attained by the stone, s= $\frac{0^2}{5^2}$ x (-10) m

= $\frac{-25}{-20}$ m

= 1.25 m

Also we know that final velocity, v= u + at

or, Time, t= $\frac{v-u}{a}$

Therefore, Time, t taken by stone to attain the height, s= $\frac{0-5}{-10\ s}$

= 0.5 s

2. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 3.0 m s^{-2} for 8.0 s. How far does the boat travel during this time?

Answer: Given Initial velocity of motorboat, u = 0

Acceleration of motorboat, a = 3.0 m s^{-2}

Time under consideration, t = 8.0 s

Distance, s = ut + (1/2)at^2

Therefore, distance travel by motorboat = 0 x 8 + (1/2)3.0 x 8 2

= (1/2) x 3 x 8 x 8 m

= 96 m