DELHI PUBLIC SCHOOL JAMMU

July, 2021

Assignment II

Class XI   **Sub:PHYSICS**

Topic: Kinematics

Based on your understanding of the e- lectures-cum-PPTs, video links and other e-resources shared with you, answer the following questions.

Q1. What is the nature of position-time graph for uniform motion and what does the slope

of position-time graph indicates?   (1mk)

Q2. A ball is thrown vertically upwards. Draw its velocity-time curve.   (1mk)

Q3. The v-t graphs of two objects making an angle of 30° and 60° with the time axis.

Find the ratio of their accelerations.   (1mk)

Q4. Define uniform velocity, variable velocity , average velocity and instantaneous

velocity.   (2 mks)

Q5. A ball is dropped from the top of a tower of height h. It covers a distance h/2 in the

last second of its motion. How long does the ball remain in air?   (2 mks)

Q6. A car moving with a speed of 50 kmh^{-1} can be stopped by brakes after at least 6m.

what will be the minimum stopping distance, if the same is moving at a speed

of 100 kmh^{-1}?   (3 mks)

Q7.Give the position-time (x-t) graph of

(a) Positive acceleration
(b) Negative acceleration
(c) Zero acceleration   (3 mks)

Q8. (a) Derive the three kinematic equations for uniformly accelerated motion graphically.

(b)If a body loses half of its velocity on penetrating 3 cm in a wooden block , then

how much will it penetrate more before coming to rest?   (3 mks)

Q9.(a) A body starts from rest and moves with constant acceleration. Find the ratio of the

distance covered in the nth second to the distance covered in n seconds.

Prove that the distance travelled by a body in n^{th} second of its motion is
Derive the three kinematic equations for uniformly accelerated motion graphically.

(b)If a body loses half of its velocity on penetrating 3 cm in a wooden block , then

how much will it penetrate more before coming to rest?   (3 mks)

Q10.A body starts from rest and moves with constant acceleration. Find the ratio of the distance covered in the nth second to the distance covered in n seconds.

(a) Prove that the distance travelled by a body in n^{th} second of its motion is
$S_{nth} = u + a/2(2n-1)$.   (3 mks)

YOU TUBE LINKS:
1. https://www.vedantu.com
2. https://www.learncbse.in/electric-charges-fields-cbse-notes-class-12-physics/
3. https://www.learncbse.in/electrostatic-potential-capacitance-cbse-notes-class-12-physics/

2. Send your assignment on the email ID of your respective subject teachers

Section XI A Sub Teacher: Mr. Mandeep Singh (email ID : mandy.7104@gmail.com)
Section XI B Sub Teacher: Ms Jyoti Pallalia (email ID : jyotijamwal50@gmail.com)
Section XI C Sub Teacher: Mr. Parshant Verma (email ID: prashant.dpsjmu@gmail.com
 Section XI D Sub Teacher:Ms Manika Verma (email ID : manikavermaWORK@gmail.com)

3. Students must mention their name, class/section and date in their assignments.
4. Your assignment will be marked for internal/term assessments. Therefore you are required to submit it.