

NEET MOTION IN A STRAIGHT LINE — AVERAGE AND INSTANTANEOUS VELOCITY AND SPEED — PYQS

Max. Marks: 24

Questions: 6

Section A (MCQ) — 6 questions

- Q.1** Consider a particle moving along a straight line, whose position as a function of time is given by $s(t) = \alpha t^2 - \beta t + \gamma$, where $\alpha = 1 \text{ m s}^{-2}$, $\beta = 6 \text{ m s}^{-1}$ and $\gamma = 5 \text{ m}$. The average speed of the particle, in m s^{-1} from $t = 0$ to $t = 6 \text{ s}$ is: [RE-NEET (UG) 2026]
- (1) 0 (2) 12 (3) 6 (4) 3

 Scan or tap for the
full solution


- Q.2** A vehicle travels half the distance with speed v and the remaining distance with speed $2v$. Its average speed is: [NEET (UG) 2023]
- (1) $\frac{2v}{3}$ (2) $\frac{4v}{3}$ (3) $\frac{3v}{4}$ (4) $\frac{v}{3}$

 Scan or tap for the
full solution


- Q.3** A toy car with charge q moves on a frictionless horizontal plane surface under the influence of a uniform electric field $\vec{E}$. Due to the force $q\vec{E}$, its velocity increases from 0 to 6 m s^{-1} in one second duration. At that instant the direction of the field is reversed. The car continues to move for two more seconds under the influence of this field. The average velocity and the average speed of the toy car between 0 to 3 seconds are respectively

[NEET 2018]

- (1) 2 m s^{-1} , 4 m s^{-1} (2) 1 m s^{-1} , 3 m s^{-1}
 (3) 1 m s^{-1} , 3.5 m s^{-1} (4) 1.5 m s^{-1} , 3 m s^{-1}

 Scan or tap for the
full solution


- Q.4** Two cars P and Q start from a point at the same time in a straight line and their positions are represented by $x_P(t) = (at + bt^2)$ and $x_Q(t) = (ft - t^2)$. At what time do the cars have the same velocity?

[NEET 2016 (Phase 2)]

- (1) $\frac{a-f}{1+b}$ (2) $\frac{a+f}{2(b-1)}$
 (3) $\frac{a+f}{2(1+b)}$ (4) $\frac{f-a}{2(1+b)}$

 Scan or tap for the
full solution


- Q.5** A particle covers half of its total distance with speed v_1 and the rest half distance with speed v_2 . Its average speed during the complete journey is

[AIPMT 2011 (Mains)]

- (1) $\frac{v_1 + v_2}{2}$ (2) $\frac{v_1 v_2}{v_1 + v_2}$ (3) $\frac{2v_1 v_2}{v_1 + v_2}$ (4) $\frac{v_1^2 v_2^2}{v_1^2 + v_2^2}$

 Scan or tap for the
full solution


- Q.6** A car moves from X to Y with a uniform speed v_u and returns to X with a uniform speed v_d . The average speed for this round trip is [AIPMT 2007]

- (1) $\sqrt{v_u v_d}$ (2) $\frac{v_d v_u}{v_d + v_u}$ (3) $\frac{v_u + v_d}{2}$ (4) $\frac{2v_d v_u}{v_d + v_u}$

 Scan or tap for the
full solution


ANSWER KEY

Ques.	1	2	3	4	5	6				
Ans.	4	2	2	4	3	4				