Yakeen NEET 2.0 2026

Physics by MR Sir

Motion in a Straight Line

DPP: 2

Q1 Given below are some statements regarding distance and displacement.
I. Distance is always greater than displacement.
II. Distance can be equal to displacement.
III. Displacement can be zero.
Which one of the following statement(s) is/are correct?
(A) I,II and III are correct.
(B) II and III are correct.
(C) Only I is correct.
(D) All statements are incorrect.

Q2 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Displacement may be equal to the distance covered.
Reason R: For a body moving in a circle, direction of velocity is expressed by tangent drawn at that point.
(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is not the correct explanation of A.
(C) A is true but R is false.
(D) A is false but R is true.

Q3 Assertion: Speed can't be negative, but velocity can be negative.
Reason: Distance can't be negative but displacement can be negative.
(A) Both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
(B) Both Assertion and Reason are true and the Reason is not a correct explanation of the Assertion.
(C) Assertion is true but Reason is false.
(D) Assertion is false and Reason is true

Q4 An object is located at any point O at $t = 0$ s. From $t = 0$ s to $t = 5$ s, it continuously changes its position and reaches point P. In the next 5 s, it does not change its position. For the above situation, which of the following statement is/are correct?
I. The object is in motion from point O to point P.
II. The object is at rest from $t = 5$ s to $t = 10$ s.
III. The object is in motion from $t = 0$ s to $t = 10$ s.
(A) Only I
(B) Only II
(C) Both I and III
(D) Both I and II

Q5 A boy completes one round of a circular track of radius 20 m in 50 seconds. The displacement at the end of 4 minute 10 second will be
(A) 40 m
(B) 20 m
(C) 80π m
(D) Zero

Q6 A car moves with speed 60 km/h for 1 hour in east direction and with same speed for 30 min in south direction. The displacement of car from initial position is
(A) 60 km
(B) $30\sqrt{3}$ km

(C) $30\sqrt{5}$ km
(D) $60\sqrt{2}$ km

Q7 A body is moving along a straight line path with constant velocity. At an instant of time the distance travelled by it is S and its displacement is D. then
(A) $D = S$
(B) $D \leq S$
(C) $D > S$
(D) $D < S$

Q8 A car travels a distance d on a straight road in two hours and then returns to the starting point in next three hours. Its average speed is:
(A) $\frac{3d}{5}$
(B) $\frac{2d}{5}$
(C) $\frac{d}{2} - \frac{d}{3}$
(D) none of these

Q9 A particle moves along x-axis with speed $6\ \mathrm{m/s}$ for the first half distance of a journey and the second half distance with a speed $3\ \mathrm{m/s}$. The average speed in the total journey is
(A) $5\ \mathrm{m/s}$
(B) $4.5\ \mathrm{m/s}$
(C) $4\ \mathrm{m/s}$
(D) $2\ \mathrm{m/s}$

Q10 A person travels along a straight road for the first $\frac{t}{3}$ time with a speed v_1 and for next $\frac{2t}{3}$ time with a speed v_2. Then the mean speed v is given by
(A) $v = \frac{v_1 + 2v_2}{3}$
(B) $\frac{1}{v} = \frac{1}{3v_1} + \frac{2}{3v_2}$
(C) $v = \frac{1}{3}\sqrt{2v_1 v_2}$
(D) $v = \sqrt{\frac{3v_2}{2v_1}}$

Q11 A car travels a distance of $2000\ \mathrm{m}$. If the first half distance is covered at $40\ \mathrm{km/}$ hour and the second half at velocity v and if the average velocity is 48 $\mathrm{km/}$ hour, then the value of v is
(A) $56\ \mathrm{km/}$ hour
(B) $60\ \mathrm{km/}$ hour
(C) $50\ \mathrm{km/}$ hour
(D) $48\ \mathrm{km/}$ hour

Q12 A car runs at constant speed on a circular track of radius $100\ \mathrm{m}$ taking $62.8\ \mathrm{s}$ on each lap. What is the average speed and average velocity on each complete lap?
(A) Velocity $10\ \mathrm{m/s}$ speed $10\ \mathrm{m/s}$
(B) Velocity zero, speed $10\ \mathrm{m/s}$
(C) Velocity zero, speed zero
(D) Velocity $10\ \mathrm{m/s}$, speed zero

Answer Key

Q1	(B)
Q2	(B)
Q3	(A)
Q4	(D)
Q5	(D)
Q6	(C)
Q7	(A)
Q8	(B)
Q9	(C)
Q10	(A)
Q11	(B)
Q12	(B)