Yakeen NEET 2.0 2026

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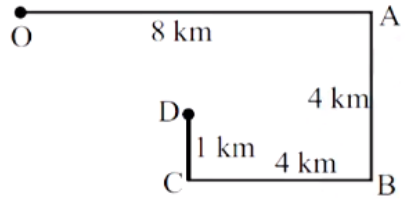
Motion in a Straight Line

DPP: 1

Q1 A car moves from O to D along the path $OABCD$ shown in figure. What is distance travelled and net displacement.



(A) 16,5
(B) 17,5
(C) 20,4
(D) 15,3

Q2 A particle starts from the origin, goes along the X-axis to the point $(20\ \text{m}, 0)$ and then returns along the same line to the point $(-20m, 0)$. Find the distance and displacement of the particle during the trip.
(A) $60, -20$
(B) $-60, 20$
(C) 60,20
(D) None of these

Q3 Which of the following statements is incorrect?
(A) Displacement is independent of the choice of origin of the axis.
(B) Displacement may or may not be equal to the distance travelled.
(C) When a particle returns to its starting point, its displacement is not zero.
(D) Displacement does not tell the nature of the actual motion of a particle between the points.

Q4 A body covered a distance of L m along a curved path of a quarter circle. The ratio of distance to displacement is
(A) $\frac{\pi}{2\sqrt{2}}$
(B) $\frac{2\sqrt{2}}{\pi}$
(C) $\frac{\pi}{\sqrt{2}}$
(D) $\frac{\sqrt{2}}{\pi}$

Q5 A person moves $30\ \text{m}$ north and then $20\ \text{m}$ towards east and finally $30\sqrt{2}\ \text{m}$ in south-west direction. The displacement of the person from the origin will be
(A) $10\ \text{m}$ along north
(B) $10\ \text{m}$ long south
(C) $10\ \text{m}$ along west
(D) Zero

Q6 A wheel of radius 1 meter rolls forward half a revolution on a horizontal ground. The magnitude of the displacement of the point of the wheel initially in contact with the ground is
(A) 2π
(B) $\sqrt{2}\pi$
(C) $\sqrt{\pi^2+4}$
(D) π

Q7 The numerical ratio of displacement to the distance covered is always:
(A) Less than one
(B) Equal to one
(C) Equal to or less than one
(D) Equal to or greater than one

Q8 A car travels half the distance with constant velocity of 40kmph and the remaining half with a constant velocity of 80kmph. The average velocity of the car is:
(A) $32\ \text{km/hr}$
(B) $53.3\ \text{km/hr}$
(C) $43.2\ \text{km/hr}$
(D) $42\ \text{km/hr}$

Q9

A particle is moving with a constant speed V in a circle. What is the magnitude of average velocity after one-fourth rotation?

(A) $\frac{\pi V}{\sqrt{2}}$ (B) $\frac{\sqrt{2}V}{\pi}$

(C) $\frac{2\sqrt{2}V}{\pi}$ (D) $\frac{\pi R}{2V}$

Q10 A person walks 12m in east direction and 4m in north direction. Then the person climbs a 3m high wall. What is the magnitude of displacement of person?

(A) 19 m (B) 12 m

(C) 13 m (D) 0 m

Answer Key

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