

CLASS-IX PHYSICS

MOTION

Assignment-5

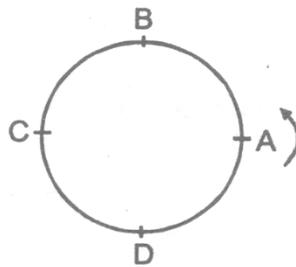
MULTIPLE CHOICE QUESTION 5.1

1. 1° is equal to :
(A) 57.3° (B) 573° (C) 180° (D) 360°
2. An athlete complete one round of a circular track of diameter 200 m in 40 s. What will be the displacement at the end of 2 minutes 40 s.?
(A) 2200 m (B) 220 m (C) 22 m (D) Zero
3. What will be the distance in the above equation ?
(A) 2512 m (B) 2500 m (C) 2200 m (D) Zero
4. The distance traveled by a body is directly proportional to the time, then the body is said to have :
(A) Zero speed (B) Zero velocity (C) Constant speed (D) None of these
5. An athlete runs along a circular track of diameter 28m. The displacement of the athlete after he completes one circle is :
(A) 28 m (B) 88 m (C) 44 m (D) Zero
6. A boy is running along a circular track of radius 7 m. He completes one circle in 10 second. The average velocity of the boy is :
(A) 4.4 m^{-1} (B) 0.7 ms^{-1} (C) Zero (D) 70 ms^{-1}
7. A body is moving with a uniform speed of 5 ms^{-1} in a circular path of radius 5 m. The acceleration of the body is :
(A) 25 ms^{-2} (B) 15 ms^{-2} (C) 5 ms^{-2} (D) 1 ms^{-2}
8. Unit of angular velocity is :
(A) red (B) m/s (C) rad/s^2 (D) rad/s
9. The bodies in circular paths of radii 1 : 2 take same time to compete their circles. The ratio of their linear speeds is :
(A) 1 : 2 (B) 2 : 1 (C) 1 : 3 (D) 3 : 1
10. In a circular path of radius 1m, a mass of 2kg moves with a constant speed 10 ms^{-1} . The angular speed in radian/sec. is :
(A) 5 (B) 10 (C) 15 (D) 20
11. The relation among v , ω and r is :
(A) $\omega = \frac{v}{r}$ (B) $v = \frac{\omega}{r}$ (C) $\omega = \frac{r}{v}$ (D) None of these
12. Uniform circular motion is an example of :
(A) Variable acceleration (B) Constant acceleration
(C) A and B both (D) None of these
13. Rate of change of angular velocity refer to :
(A) angular speed (B) angular displacement
(C) angular acceleration (D) None of these
14. A car travels $\left(\frac{1}{4}\right)^{\text{th}}$ of a circle with radius r . The ratio of the distance to its displacement is :

- (A) $1; \frac{\pi}{2\sqrt{2}}$ (B) $\frac{\pi}{2\sqrt{2}}:1$ (C) $2\sqrt{2}:\pi$ (D) $\pi 2\sqrt{2}:1$

SUBJECTIVE QUESTION 5.2

1. The wheel of a cycle of radius 50 cm is moving with a speed 14 ms^{-1} . Calculate the angular velocity of the wheel.
2. An air craft completes a horizontal loop of radius 1 km with a uniform speed of 900 kmh^{-1} . Find the angular velocity of the air craft.
3. A artificial satellite takes 90 minutes to complete its revolution around the earth. Calculate the angular velocity of the satellite.
4. A particle moves along a circle of radius R as shown in figure. It starts from A and moves in anticlockwise direction.



- Calculate the distance traveled and displacement :
- (i) From A to B (ii) From A to C (iii) From A to D
5. Name a physical quantity that (i) varies (ii) remains same in a circular motion.
 6. Define angular speed write its S.I. unit.
 7. Define the time period and find the relation between v and ω .