1. What is the SI unit of speed?
   A. km/h B. m/s
   C. cm/s D. m/h (B)

Explanation : Speed is measured in metres per second in SI units, denoted as m/s or m s^{-1}.

2. Which of the following is a vector quantity?
   A. Distance B. Speed
   C. Displacement D. Time (C)

Explanation : Displacement has both magnitude and direction, making it a vector quantity.

3. Which graph represents an object in uniform motion?
   A. Curved distance-time graph
   B. Straight line sloping distance-time graph
   C. Zigzag line on time axis
   D. Parabolic velocity-time graph (B)

Explanation : A straight sloping distance-time graph indicates equal distance in equal time, i.e., uniform motion.

4. What is the average speed of an object that travels 32 m in 6 seconds?
   A. 4 m/s B. 5.33 m/s
   C. 6 m/s D. 3.5 m/s (B)

Explanation : Average speed = Total distance / Total time = 32 ÷ 6 = 5.33 m/s.

5. Which of the following quantities can be zero for a moving object?
   A. Distance B. Speed
   C. Displacement D. Time (C)

Explanation : If the object returns to its starting point, displacement is zero though distance may not be.

6. A car accelerates uniformly from 5 m/s to 10 m/s in 5 seconds. What is the acceleration?
   A. 1 m/s^2 B. 0.5 m/s^2
   C. 2 m/s^2 D. 3 m/s^2 (A)

Explanation : Acceleration = (Final velocity – Initial velocity) / Time = (10 – 5)/5 = 1 m/s^2.

7. What does the area under a velocity-time graph represent?
   A. Acceleration B. Speed
   C. Distance/Displacement D. Time (C)

Explanation : The area under a velocity-time graph gives the displacement of the object.

8. An object is moving with uniform circular motion. What remains constant?
   A. Velocity B. Speed
   C. Direction D. Displacement (B)

Explanation : In uniform circular motion, speed remains constant but direction changes continuously.

9. What would be the displacement of a particle moving in a circular path of radius r after a displacement of half a circle?
   A. $2\pi r$
   B. πr
   C. 2r
   D. Zero (C)

Explanation : After half a circle, the particle will be diametrically opposite to its origin. Hence, displacement is equal to the diameter.

10. If a train moves with uniform acceleration and covers 3 km in 300 s, what is the acceleration if final speed is 20 m/s and initial speed is 0?
    A. 0.25 m/s^2 B. 1.0 m/s^2
    C. 1/15 m/s^2 D. 0.5 m/s^2 (C)

Explanation : Using v = u + atv = u + at, a = (20 – 0) / 300 = 1/15 m/s^2.