

# Chapter 7: Motion Quiz

## Introduction to Motion

### 1. When is an object said to be in motion?

- When its position changes with time
- When it is invisible
- When it is heavy
- When it is hot

**Answer: When its position changes with time**

### 2. Can an object be moving for one person and stationary for another?

- Yes, motion is relative
- No, motion is absolute
- Only in space
- Never

**Answer: Yes, motion is relative**

### 3. What is indirect evidence of motion?

- Observing effects like dust movement
- Seeing the object move
- Measuring speed
- Hearing sound

**Answer: Observing effects like dust movement**

### 4. Which of these is NOT in motion?

- A parked car
- Blood flowing
- Earth rotating
- Atoms vibrating

**Answer: A parked car**

### 5. Sunrise and sunset are caused by?

- Motion of the earth
- Motion of the sun
- Motion of the moon
- Motion of stars

**Answer: Motion of the earth**

# Describing Motion

## 1. To describe position, we need a?

- Reference point
- Stopwatch
- Thermometer
- Compass

**Answer: Reference point**

## 2. The reference point is also called?

- Origin
- Destination
- Path
- Vector

**Answer: Origin**

## 3. If school is 2km north of station, what is the origin?

- Station
- School
- North
- 2km

**Answer: Station**

## 4. Can we choose any reference point?

- Yes
- No
- Only fixed ones
- Only moving ones

**Answer: Yes**

## 5. Location depends on?

- Reference point
- Time of day
- Weather
- Speed

**Answer: Reference point**

# Motion Along a Straight Line

**1. Total path length covered is called?**

- Distance
- Displacement
- Speed
- Velocity

**Answer: Distance**

**2. Shortest distance from initial to final position is?**

- Displacement
- Distance
- Path
- Length

**Answer: Displacement**

**3. Displacement has?**

- Magnitude and direction
- Only magnitude
- Only direction
- Neither

**Answer: Magnitude and direction**

**4. Can displacement be zero?**

- Yes
- No
- Never
- Only for light

**Answer: Yes**

**5. If you go 5m East and 5m West, displacement is?**

- 0m
- 10m
- 5m
- 25m

**Answer: 0m**

## Uniform and Non-Uniform Motion

**1. Equal distances in equal time intervals is?**

- Uniform motion
- Non-uniform motion
- Accelerated motion
- Circular motion

**Answer: Uniform motion**

**2. Unequal distances in equal time intervals is?**

- Non-uniform motion
- Uniform motion
- Constant speed
- Rest

**Answer: Non-uniform motion**

**3. A car in crowded traffic typically shows?**

- Non-uniform motion
- Uniform motion
- Constant velocity
- Zero acceleration

**Answer: Non-uniform motion**

**4. Planets revolving around sun is?**

- Uniform circular motion
- Linear motion
- Random motion
- Zigzag motion

**Answer: Uniform circular motion**

**5. For uniform motion, time interval should be?**

- Small
- Large
- Infinite
- Zero

**Answer: Small**

## Measuring the Rate of Motion

**1. Rate of motion is measured by?**

- Speed
- Distance
- Time
- Mass

**Answer: Speed**

**2. SI unit of speed is?**

- m/s
- km/h
- cm/s
- miles/hour

**Answer: m/s**

**3. Average speed is?**

- Total distance / Total time
- Total time / Total distance
- Distance x Time
- Speed x Time

**Answer: Total distance / Total time**

**4. Does speed specify direction?**

- No
- Yes
- Sometimes
- Only in space

**Answer: No**

**5. An object covers 16m in 4s. Speed is?**

- 4 m/s
- 64 m/s
- 12 m/s
- 0.25 m/s

**Answer: 4 m/s**

## Speed with Direction: Velocity

**1. Speed with direction is called?**

- Velocity
- Acceleration
- Distance
- Displacement

**Answer: Velocity**

**2. Velocity changes if?**

- Speed or direction changes
- Only time changes
- Only mass changes
- Nothing changes

**Answer: Speed or direction changes**

**3. Average velocity formula (uniform change) is?**

- $(u + v) / 2$
- $u + v$
- $v - u$
- $u \times v$

**Answer:  $(u + v) / 2$**

**4. If a car moves in a circle at constant speed, does velocity change?**

- Yes
- No
- Sometimes
- Never

**Answer: Yes**

**5. Unit of velocity is?**

- m/s
- m/s<sup>2</sup>
- m
- s

**Answer: m/s**

## Rate of Change of Velocity: Acceleration

**1. Acceleration is?**

- Change in velocity per unit time
- Change in distance
- Change in speed
- Change in position

**Answer: Change in velocity per unit time**

**2. Formula for acceleration is?**

- $(v - u) / t$
- $v \times t$
- $u + at$
- $s / t$

**Answer:  $(v - u) / t$**

**3. SI unit of acceleration is?**

- m/s<sup>2</sup>
- m/s
- km/h
- m

**Answer: m/s<sup>2</sup>**

**4. If velocity increases, acceleration is?**

- Positive
- Negative
- Zero
- Undefined

**Answer: Positive**

**5. If velocity is constant, acceleration is?**

- Zero
- Constant
- Increasing
- Decreasing

**Answer: Zero**

## Graphical Representation: Distance-Time Graphs

**1. Slope of distance-time graph gives?**

- Speed
- Acceleration
- Displacement
- Time

**Answer: Speed**

**2. For uniform speed, d-t graph is?**

- Straight line
- Curved line
- Circle
- Zigzag

**Answer: Straight line**

**3. Graph parallel to time axis means object is?**

- At rest
- Moving uniformly
- Accelerating
- Decelerating

**Answer: At rest**

**4. Curved d-t graph indicates?**

- Non-uniform speed
- Uniform speed
- Rest
- Zero speed

**Answer: Non-uniform speed**

**5. Distance is plotted on which axis?**

- Y-axis
- X-axis
- Z-axis
- Any axis

**Answer: Y-axis**

## Velocity-Time Graphs

**1. Area under v-t graph gives?**

- Displacement
- Acceleration
- Speed
- Time

**Answer: Displacement**

**2. Slope of v-t graph gives?**

- Acceleration
- Displacement
- Speed
- Force

**Answer: Acceleration**

**3. For uniform acceleration, v-t graph is?**

- Straight line inclined to axes
- Curved line
- Parallel to time axis
- Parallel to velocity axis

**Answer: Straight line inclined to axes**

**4. If v-t graph is parallel to time axis, acceleration is?**

- Zero
- Constant
- Variable
- Infinite

**Answer: Zero**

**5. Retardation graph slope is?**

- Negative
- Positive
- Zero
- Undefined

**Answer: Negative**

## Equations of Motion

**1. First equation of motion is?**

- $v = u + at$
- $s = ut + \frac{1}{2}at^2$
- $2as = v^2 - u^2$
- $F = ma$

**Answer:  $v = u + at$**

**2. Second equation relates?**

- Position and time
- Velocity and time
- Position and velocity
- Force and mass

**Answer: Position and time**

**3. Third equation is?**

- $2as = v^2 - u^2$
- $v = u + at$
- $s = ut + \frac{1}{2}at^2$
- $E = mc^2$

**Answer:  $2as = v^2 - u^2$**

**4. 'u' stands for?**

- Initial velocity
- Final velocity
- Acceleration
- Time

**Answer: Initial velocity**

**5. These equations apply for?**

- Uniform acceleration
- Non-uniform acceleration
- Variable acceleration
- Zero velocity

**Answer: Uniform acceleration**

## Uniform Circular Motion

**1. Motion in a circle at constant speed is?**

- Accelerated motion
- Uniform motion
- Retarded motion
- Rest

**Answer: Accelerated motion**

**2. Why is it accelerated?**

- Direction changes continuously
- Speed changes
- Mass changes
- Time stops

**Answer: Direction changes continuously**

**3. Direction of motion at any point is?**

- Tangential
- Radial
- Vertical
- Horizontal

**Answer: Tangential**

**4. Formula for circular speed is?**

- $v = 2\pi r / t$
- $v = \pi r^2 / t$
- $v = 2r / t$
- $v = r / t$

**Answer:  $v = 2\pi r / t$**

**5. Example of uniform circular motion?**

- Moon revolving around Earth
- Car on straight road
- Stone falling
- Bullet fired

**Answer: Moon revolving around Earth**