

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^2
- ☐ 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^2
- ☐ m/s
- ☐ km/h
- ☐ m

Answer: m/s^2

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