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 x 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 x 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 + 1/2at²
○ 2as = v² - u²
○ 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 = v² - u²
○ v = u + at
○ s = ut + 1/2at²
○ E = mc²

Answer: 2as = v² - u²

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