

Angular Momentum Quiz PDF

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What is the effect called when a spinning object changes its rotational axis due to an external force?

- Precession
- Translation
- Oscillation
- Vibration

What is the term for the resistance of an object to changes in its rotational motion?

- Inertia
- Mass
- Velocity
- Moment of Inertia

What is the SI unit of angular momentum?

- Newton
- Joule
- Kilogram meter squared per second
- Meter per second

What are the consequences of angular momentum conservation in space? (Select all that apply)

- Satellites maintain their orientation
- Planets maintain stable orbits
- Space spacecraft can change direction without engines
- Stars can form stable systems

What happens to a figure skater's angular velocity when they pull their arms in while spinning?

- It decreases
- It increases

- It remains the same
- It stops

Which of the following are examples of gyroscopic effects? (Select all that apply)

- A spinning bicycle wheel maintaining balance
- A planet orbiting a star
- A drone stabilizing in the air
- A pendulum swinging back and forth

Which of the following affects the moment of inertia of an object?

- The object's color
- The object's mass distribution
- The object's temperature
- The object's volume

Which of the following best describes angular momentum?

- A measure of linear motion
- A measure of rotational motion
- A measure of potential energy
- A measure of kinetic energy

What is the formula for angular momentum (L)?

- $L = m \cdot v$
- $L = F \cdot d$
- $L = I \cdot \omega$
- $L = m \cdot g \cdot h$

Which factors determine the moment of inertia of an object? (Select all that apply)

- Shape of the object
- Mass of the object
- Distribution of mass relative to the axis
- Color of the object

Which of the following are components of angular momentum? (Select all that apply)

- Mass
- Angular velocity
- Moment of inertia
- Linear velocity

Which principle states that angular momentum remains constant if no external torque acts on a system?

- Conservation of Energy
- Conservation of Mass
- Conservation of Angular Momentum
- Conservation of Charge

Which of the following are true about torque? (Select all that apply)

- It is the rotational equivalent of force
- It can change the angular momentum of a system
- It is measured in newtons
- It is calculated as force times distance from the pivot

In which scenarios is angular momentum conserved? (Select all that apply)

- A planet orbiting the sun
- A car accelerating on a straight road
- A spinning top in the absence of external forces
- A pendulum swinging in a vacuum