# 11 Lecture - PHY101

# **Important Mcqs**

#### What is the law of conservation of energy?

**Answer:** The law of conservation of energy states that energy cannot be created or destroyed, only transferred or transformed from one form to another.

#### Explain the difference between kinetic and potential energy.

**Answer:** Kinetic energy is the energy possessed by a moving object while potential energy is the energy possessed by an object due to its position or configuration.

#### Can energy be completely conserved in a real-world situation?

**Answer:** Energy cannot be completely conserved in a real-world situation due to the presence of various energy losses such as friction, air resistance, and heat.

### What is the principle of work-energy theorem?

**Answer:** The principle of the work-energy theorem states that the net work done on an object is equal to the change in its kinetic energy.

### What is elastic potential energy?

**Answer:** Elastic potential energy is the potential energy stored in an elastic material when it is stretched or compressed.

#### Give an example of a non-conservative force.

**Answer:** Friction is an example of a non-conservative force as it dissipates energy in the form of heat and sound.

#### Why is mechanical energy conserved in an isolated system?

**Answer:** Mechanical energy is conserved in an isolated system because no external work is done on the system, and there are no energy losses due to non-conservative forces.

## What is the relationship between potential energy and conservative forces?

**Answer:** Potential energy is associated with conservative forces as they depend on the position or configuration of an object in a force field.

## Can the total energy of a system be negative?

Answer: No, the total energy of a system cannot be negative as energy is always a positive quantity.

### How can the conservation of energy be applied to solve real-world problems?

**Answer:** Conservation of energy can be used to analyze and solve real-world problems involving energy transfer and transformation. By applying the principle of conservation of energy, one can determine the initial and final energies of a system and calculate the work done or energy transferred in a given process.