

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.