7 Lecture - PHY101

Important Subjective

Define work done by a force on an object.

Answer: Work done by a force on an object is defined as the product of the force and the displacement of the object in the direction of the force.

What is kinetic energy?

Answer: Kinetic energy is the energy possessed by an object due to its motion. It is defined as half the product of the mass of the object and the square of its velocity.

What is potential energy?

Answer: Potential energy is the energy possessed by an object due to its position or configuration. It is dependent on the height of the object above a reference point and the force acting on it.

State the law of conservation of energy.

Answer: The law of conservation of energy states that energy can neither be created nor destroyed. It can only be transformed from one form to another.

Define power.

Answer: Power is defined as the rate at which work is done or energy is transferred. It is the product of force and velocity.

What is the work-energy theorem?

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

State the difference between conservative and non-conservative forces.

Answer: Conservative forces are those which do not dissipate the energy of a system and are dependent only on the initial and final positions of the object. Non-conservative forces are those which dissipate the energy of a system, such as friction.

What is the law of conservation of mechanical energy?

Answer: The law of conservation of mechanical energy states that the sum of the kinetic and potential energy of a system remains constant if only conservative forces act on the system.

How is work related to potential energy?

Answer: Work done by a conservative force can change the potential energy of an object. The work done by the force is equal to the negative of the change in potential energy.

What is the principle of work and energy?

Answer: The principle of work and energy states that the work done by all forces acting on a system is equal to the change in its kinetic energy and the change in its potential energy.