

39 Lecture - PHY101

Important Subjective

What is thermal expansion?

Answer: Thermal expansion refers to the expansion or contraction of materials due to changes in temperature.

How does thermal conductivity differ from thermal resistance?

Answer: Thermal conductivity is the ability of a material to transfer heat, while thermal resistance is the measure of how well a material can resist heat transfer.

What is the difference between heat and temperature?

Answer: Heat is the transfer of energy from a hotter object to a cooler object, while temperature is a measure of the average kinetic energy of the particles in a substance.

Define the term 'specific heat.'

Answer: Specific heat is the amount of heat required to raise the temperature of one unit of mass of a substance by one degree Celsius or Kelvin.

What is the difference between a conductor and an insulator?

Answer: A conductor is a material that allows heat to pass through it easily, while an insulator is a material that resists the flow of heat.

What is thermal radiation?

Answer: Thermal radiation is the transfer of heat energy through electromagnetic waves, such as infrared radiation.

What is the first law of thermodynamics?

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

What is the relationship between heat and work in thermodynamics?

Answer: In thermodynamics, heat and work are both forms of energy and can be converted from one to the other.

What is a heat engine?

Answer: A heat engine is a device that converts thermal energy into mechanical energy.

What is the difference between an adiabatic process and an isothermal process?

Answer: In an adiabatic process, no heat is transferred into or out of the system, while in an isothermal process, the temperature of the system remains constant.