

# 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.