39 Lecture - PHY101

Important Mcqs

Which of the following is a unit of heat?

- a. Joule
- b. Kelvin
- c. Ampere
- d. Newton

Answer: a. Joule

What is thermal expansion?

- a. The ability of a material to transfer heat
- b. The change in temperature of a material
- c. The expansion or contraction of a material due to changes in temperature
- d. The measure of how well a material can resist heat transfer

Answer: c. The expansion or contraction of a material due to changes in temperature

What is the specific heat of water?

- a. 1 $J/kg \cdot K$
- b. 4.18 J/kg·K
- c. 10 J/kg·K
- d. $100 \text{ J/kg} \cdot \text{K}$

Answer: b. 4.18 J/kg·K

Which of the following materials is a good insulator?

- a. Copper
- b. Aluminum

- c. Glass
- d. Silver

Answer: c. Glass

What is the first law of thermodynamics?

- a. Energy cannot be created or destroyed
- b. Energy always flows from hot to cold
- c. The total entropy of an isolated system always increases
- d. The efficiency of a heat engine cannot be 100%

Answer: a. Energy cannot be created or destroyed

Which process occurs at a constant temperature in a thermodynamic system?

- a. Adiabatic process
- b. Isothermal process
- c. Isobaric process
- d. Isochoric process

Answer: b. Isothermal process

What is thermal conductivity?

- a. The measure of how well a material can resist heat transfer
- b. The ability of a material to transfer heat
- c. The measure of the temperature of a material
- d. The measure of the average kinetic energy of the particles in a substance

Answer: b. The ability of a material to transfer heat

Which of the following is a type of thermal radiation?

- a. Visible light
- b. Ultraviolet radiation
- c. Infrared radiation

d. X-rays

Answer: c. Infrared radiation

What is a heat engine?

- a. A device that converts thermal energy into mechanical energy
- b. A device that converts mechanical energy into thermal energy
- c. A device that converts electrical energy into thermal energy
- d. A device that converts thermal energy into electrical energy

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

Which law of thermodynamics states that the total entropy of an isolated system always increases over time?

- a. First law of thermodynamics
- b. Second law of thermodynamics
- c. Third law of thermodynamics
- d. None of the above

Answer: b. Second law of thermodynamics