

Heat Transfer

Chapter 6: Heat Transfer · Topic 1

Key Concept

Conduction transfers heat through direct contact, common in solids, like a metal spoon heating up when placed in hot soup.

Convection transfers heat through the movement of fluids (liquids or gases), like warm air rising and cool air sinking.

Radiation transfers heat through electromagnetic waves, not requiring a medium, like heat from the Sun reaching Earth through space.

Understanding heat transfer methods helps us design efficient heating and cooling systems, insulation, and cooking methods.

Quick Revision Notes

- Conduction transfers heat through direct contact.
- Common in solids, like a heated metal spoon.
- Convection transfers heat through fluid movement.
- Warm air rises; cool air sinks.
- Radiation transfers heat through electromagnetic waves.
- It doesn't need a medium.
- Sunlight reaches Earth through radiation.
- Understanding heat transfer aids design of systems.

Practice Questions

- 1 Discuss an example of conduction, convection and radiation.
- 2 Explain why metal feels colder than wood at the same temperature.
- 3 Research how a thermos flask reduces heat transfer.
- 4 Discuss why the Sun's heat reaches us through radiation.
- 5 Explain convection currents in the atmosphere.
- 6 Research an insulation material and how it works.