FAQs

1. What causes heat transfer?

- It is the temperature difference between the two neighboring objects that causes this heat transfer. The heat transfer continues until the two objects have reached thermal equilibrium and are at the same temperature.
- Heat always moves from a warmer place to a cooler place.
- Hot objects in a cooler room will cool to room temperature.
- Cold objects in a warmer room will heat up to room temperature.

2. What are the ways of heat transfer?

Heat transfers in three ways:

1. Conduction
2. Convection
3. Radiation

3. Define Conduction with an example

When you heat a metal strip at one end, the heat travels to the other end. As you heat the metal, the particles vibrate, these vibrations make the adjacent particles vibrate, and so on and so on, the vibrations are passed along the metal and so is the heat.

4. What is the physics of heat loss in human body?

- For the body to remain at a constant temperature the metabolic heat produced must balance the heat lost by:
- Convection (air temperature, air speed)
- Radiation (surface temperatures)

- Evaporation (temperature, humidity, air speed)
- Conduction

5. List few factors that decides thermal performance of a building

The thermal performance of a building depends on a large number of factors. They can be summarized as

- design variables (geometrical dimensions of building elements such as walls, roof and windows, orientation, shading devices, etc.);
- material properties (density, specific heat, thermal conductivity, transmissivity, etc.);
- weather data (solar radiation, ambient temperature, wind speed, humidity, etc.); and
- a building's usage data (internal gains due to occupants, lighting and equipment, air exchanges, etc.).