

Objectives of Chapter 16

Thermodynamics is one of the most important branches of physics. It deals with the study and application of thermal energy.

In this chapter we will discuss temperature which is one of the central concepts of thermodynamics.

After reading this chapter you should be able to:

1. State and **understand** the meaning of the zeroth's law of thermodynamics
2. Know how to **convert temperature** using the three main temperature scales
3. Know why **changes in temperature** of an object affect its dimensions
4. **Differentiate** between temperature and heat
5. Calculate the **heat gained** or **lost** by an object when there is temperature change and the phase remains the same
6. Calculate the **heat gained** or **lost** by an object when there is a change in phase while the temperature remains constant
7. **Calculate the work done on** or **by a gas** for a specific process
8. Understand and **apply** the first law of thermodynamics various systems
9. Know the **three heat transfer mechanisms** and apply them to solve problems involving heat transfer