

THERMAL PHYSICS POINTS TO REMEMBER

- ❖ The SI unit of heat energy absorbed or evolved is joule (J)
- ❖ Heat always flows from a system at higher temperature to a system at lower temperature
- ❖ **Temperature** is defined as the degree of hotness of a body. The SI unit of temperature is Kelvin (K).
- ❖ All the substances will undergo one or more of the following changes when heated:
 - i) Temperature of the substance rises.
 - ii) The substance may change state from solid to liquid or gas.
 - iii) The substance will expand when heated.
- ❖ All forms of matter (solid, liquid and gas) undergo expansion on heating.
- ❖ For a given rise in temperature, a liquid will have more expansion than a solid and a gaseous substance has the highest expansion than the other two.
- ❖ If a liquid is heated directly without using any container, then the expansion that you observe is termed as **real expansion** of the liquid.
- ❖ The expansion of a liquid apparently observed without considering the expansion of the container is called the **apparent expansion** of liquid.
- ❖ For a given heat energy, the real expansion is always more than that of apparent expansion.
- ❖ If the atoms or molecules of a gas do not interact with each other, then the gas is said to be an **ideal gas** or a **perfect gas**.
- ❖ Ideal gas equation, also called as equation of state is $PV = RT$. Here, R is known as universal gas constant whose value is $8.31 \text{ J mol}^{-1}\text{K}^{-1}$.