



$$T_A = T_C \text{ and } T_B = T_C$$

$$T_A = T_B$$

**TEMPERATURE:** "Temperature of a system is the property which determines whether or not it will be in thermal equilibrium with other system. When two or more systems are in thermal equilibrium, they are said to have the same temperature".



$$\text{if } T_A = T_B$$

A and B are in thermal equilibrium.

Equation of state of a system:  $P, V, T$

**EQUATION OF STATE:** The equation which connects the thermodynamic variables (pressure, temperature and volume) for a system is called its equation of State.

$$PV = \underset{\substack{\downarrow \\ \text{no. of moles}}}{\mu} RT \Rightarrow P = \frac{\mu RT}{V}$$

universal Gas Constant