

Write short notes on :

Zeroth Law of Thermodynamics : "If two systems A and B are separately in thermal equilibrium with a third system C, then A and B are in thermal equilibrium with each other."

Let us suppose there are three systems A, B and C. Systems A and B are isolated from each other but are in thermal contact with C. Experiments show that both A and B individually attain thermal equilibrium with C. If now A and B are put in thermal contact of each other, no further change takes place. That is, A and B are found to be in thermal equilibrium with each other.

A simple illustration of the Law is provided when A and B are two gases enclosed in vessels and C is a mercury thermometer. The zeroth Law says that if there is no change in the length of mercury thread when the thermometer C is placed in thermal contact of A, nor when it is placed in thermal contact of B, then there will be no change if A and B are brought in thermal contact with each other.

