

Class XI, Thermodynamics

FIRST LAW OF THERMODYNAMICS

$$\boxed{\Delta Q = \Delta U + \Delta W} \quad \text{--- (1)}$$

ΔQ = net heat taken by the system

$$\Delta U = U_f - U_i$$

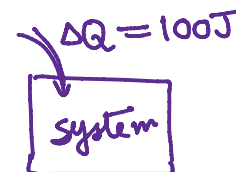
ΔW = work done by the system

Note : 1st Law of Thermodynamics

is a different type of representation of principle of conservation of energy.

Application of 1st Law in different processes:

$$\Delta Q = \Delta U + \Delta W \quad \text{--- (1) .}$$



$$\left\{ \begin{array}{l} \text{(I)} \quad \Delta U = 100J, \Delta W = 0 \\ \text{(II)} \quad \Delta W = 100J, \Delta U = 0 \\ \text{(III)} \quad \Delta U = 60J, \Delta W = 40J \end{array} \right.$$

