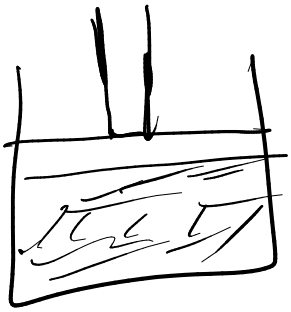
Thermodynamics

16.1

Internal energy is the sum of the kinetic energy & the potential energy of the molecules of a gas. If the temp of the gas rises then its E_K will increase therefore the internal energy will also increase

16.2



let the volume change by ΔV. P is constant

$W = P \Delta V$

Vol increase → W done by the gas

Vol decrease → W done on the gas

$\Delta U = q + W$ → work done
→ heat energy

ΔU → internal energy

sign convention

ΔU is +ve heat energy will be increased

q is +ve, heat added to the system

q is -ve, heat is removed

W.D is +ve, work is done on the system

W.D is -ve, work is done by the system