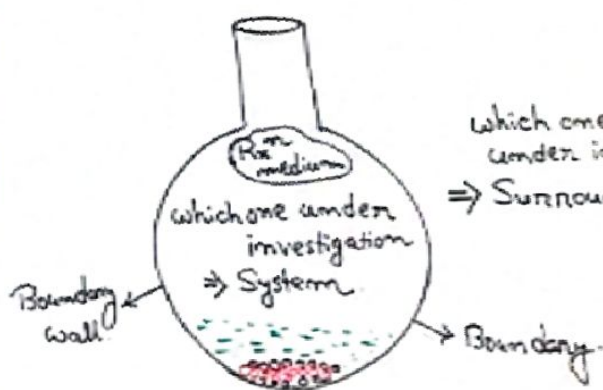


Sec-A : Chemical Energetics

Relation b/w flow of heat energy & work done. } Thermodynamic
 गणनात्मक ऊष्मा व कार्य संबंध } प्रणालीविज्ञान.

In thermodynamics System + Surroundings = Universe.
 प्रण. + परिवेश = विश्व.



System (प्रणाली)


Open system
(खुला प्रणाली)

Closed system
(बंद/कमकुटी)

Isolated system
(निष्पेक्ष/निःप्रवाह प्रणाली)

Open system :- Energy & mass exchange b/w system & surroundings are possible.

ଉଦା. 3- ମାଟ୍ରିକ୍‌ରେ ଥିବା ଜଳ ଓ ଉପ-ଆବେଶରେ ଥିବା ବସ୍ତୁ.

eg Surroundings  A cup of tea. Hot water in an open container.

Closed system :- Energy exchange is possible but mass exchange is not possible.

ଉଦା. 2- ଆବେଶରେ ଥିବା ବସ୍ତୁ ଓ ଉପ-ଆବେଶରେ ଥିବା ବସ୍ତୁ ମଧ୍ୟରେ.

eg  lid Surroundings

System (ନିମ୍ନଲିଖିତ)


- Open system (ଉଦା. 3)

Closed system (ଉଦା. 2)

Isolated system (ଉଦା. 1)

Isolated system :- No mass & energy exchange possible | ଉଦା. 1- ଉଦା. 1- ଆବେଶରେ ଥିବା ବସ୍ତୁ ଓ ଉପ-ଆବେଶରେ ଥିବା ବସ୍ତୁ ମଧ୍ୟରେ.

eg Thermoflask

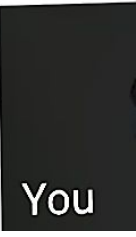
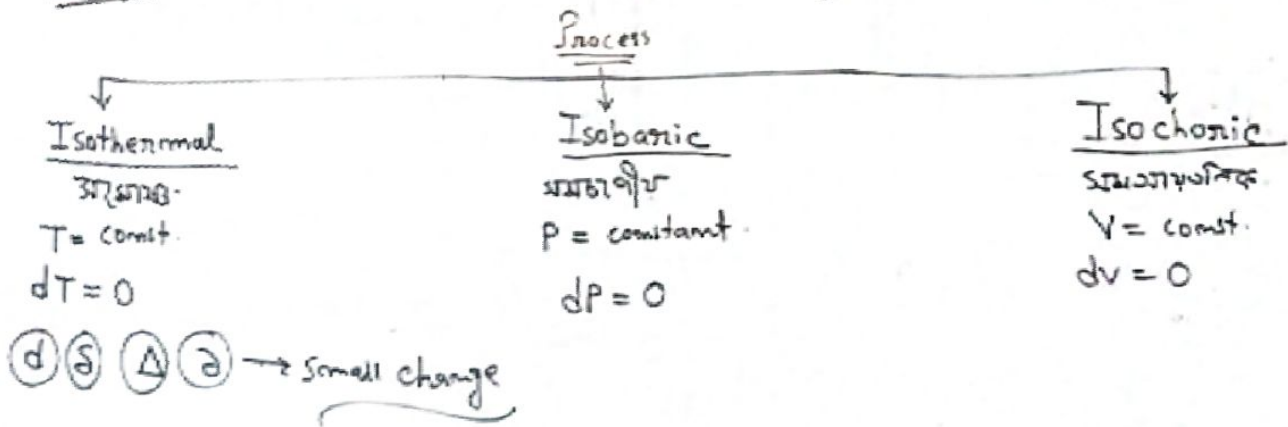
 Insulated material Double wall No Heat exchange

Extensive properties \Rightarrow Those properties depend upon mass.
 (ଆବଶ୍ୟକ ହୁଏ)

e.g. \Rightarrow Volume, KE, mole no. Entropy, Momentum, Enthalpy etc.

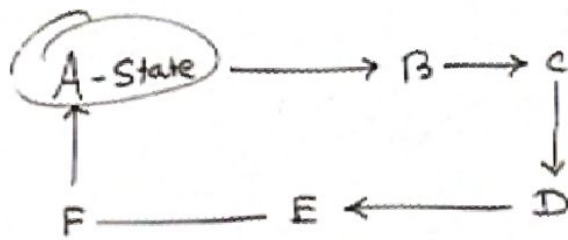
Intensive properties \Rightarrow Those properties independent upon mass.
 (ଆବଶ୍ୟକ ନୁହେଁ)

e.g. Pressure, Temp, density, Viscosity, S.T. etc.



Cyclic process

↓
Initial &
Final position
are same



cyclic pathway

For cyclic process, $dT=0$, $dP=0$, $dH=0$,
 $dV=0$.