

Q) Differentiate between open system, close a system and isolated system?

Answer:

Open system: A system in which the transfer of mass as well as energy takes place, is known as an open system. Air compressor and a balloon containing air are known as an open system.

Closed system: A system in which the mass remains constant (i.e. no transfer of mass) but transfer of energy takes place is known as a closed system. A steel flask with hot water in it is an example of a closed system.

Isolated system: A system in which neither the mass nor energy transfer takes place is known as an isolated system. A steel flask with an outer casing insulated from the surroundings is an example of an isolated system.

Irreversible process : a process, which involves heat transfer due to finite difference of temperature between the system and surroundings, is known as an irreversible process. Fluid friction between the molecules because of turbulence due, to high speeds is an example of an irreversible process.

Quasi static process: means
'almost static' It refers to a
process in which a
thermodynamic equilibrium
state passes through a
process in such a way that
every state in the process is
in thermodynamic
equilibrium.

Internal energy :energy possessed by a substance because of molecular arrangement and motion molecules is known as Internal energy. It is solely dependent on the initial and final states the system that means it is a point function and hence a property.

Definition of Temperature

The following are some definitions of Temperature:

- The degree of hotness or coldness of a body or environment.
- A measure of the warmth or coldness of an object or substance with reference to some standard value.
- A measure of the average kinetic energy of the particles in a sample of matter, expressed in terms of units or degrees designated on a standard scale.

- A measure of the ability of a substance, or more generally of any physical system, to transfer heat energy to another physical system.
- Any of various standardized numerical measures of this ability, such as the Kelvin, Fahrenheit, and Celsius scale.

- measured with thermometers: some physical property of a substance changes with temperature

<u>Thermometer</u>	<u>Thermometric Property</u>
Mercury thermometer	Length of mercury column
Constant-volume gas thermometer	Pressure of the gas
Thermocouple	Voltage
Thermogram or Ear thermometer	Infrared radiation

The Celsius scale is the most widely accepted temperature scale used throughout the world. Using this scale, a temperature of 28 degrees Celsius is abbreviated as 28°C.

The thermometer calibration process described above results in what is known as a centigrade thermometer. A centigrade thermometer has 100 divisions or intervals between the normal freezing point and the normal boiling point of water