1. Heat:

* In thermodynamics, heat means energy which is moved between two things when one of them is hotter than the other.
* Adding heat to something increases its temperature, but heat is not same as temperature. Heat can also be defined as the amount of thermal energy in a system.

1. Thermal equilibrium:

“When the temperature of body A is the same as the temperature of body B no heat transfer takes place between the bodies, and they are said to be in thermal equilibrium”.

* Heat can never be contained in a body or possessed by a body.

1. Work:

* Work is defined as the product of a force and the distance moved in the direction of the force.
* When a boundary of a closed system moved in the direction of the force acting on it, then the surroundings do work on the system.
* When a boundary is moved outwards the work is done by the system on its surroundings.

For thermodynamics:

Assumes constant pressure

W = -P

More general

Its units are Nm/kg or J/kg.

1. System:

* A system may be defined as a collection of matter within prescribed and identifiable boundaries.
* Closed system:

In thermodynamics, a closed system can exchange energy (as heat or work) but not matter with its surroundings. E.g. hot bottle.

* Open system:

While open system can exchange energy and matter e.g. fluid in turbine.

1. Principle of conversation of energy:

“When a system undergoes a thermodynamic cycle then the net heat supplied to the system from its surroundings plus the net-work input to the system from its surroundings must equal zero”.

=0

1. Law of Conversation of energy:

The law of conversation of energy states that the total energy of an isolated system is constant; energy can be transformed from one form to another, but can be neither created nor destroyed.

1. Applied Thermodynamics:

“Applied thermodynamics is the science of the relationship between heat, work, and the properties of systems”

1. First Law of thermodynamics:

“The first law of thermodynamics is a version of the law of conversation of energy, adapted for thermodynamics processes, distinguishing two kinds of transfer of energy, as heat and as thermodynamic work, and relating them to a function of a body’s state, called internal energy.”