Short notes on Reversible & Irreversible processes.

* Reversible process:- A process is said to be reversible process in which the system retraces to its original state in such a way that the substance passes through exactly the same conditions at every step in the reverse process as in the direct process.

Ex:- When the spring is slowly stretched then work is done on the spring. On the other hand, if the spring is allowed to go slowly to its original length from stretched length then the same amount of work is done by the spring.

Basic requirements for a process to be reversible:

(i) The pressure difference between the working substance and surrounding at any stage of the operation of cycle should be small.

(ii) The process should take place slowly.

(iii) The various parts of the system must be free from friction.

(iv) There should be no loss of energy due to conduction, convection and radiation during the operation

Since all the conditions stated above are not possible in practice so completely reversible process can not be obtained in actual practice.

* Irreversible process:- A process is said to be irreversible process in which the system can not be retraced to its original state

following examples of irreversible process.

(i) Heat generation during the flow of current through a resistor & conductor.

(ii) work done against force of friction

(iii) Diffusion of two gases.

(iv) Exchange of heat between bodies at diff. temp.

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