



## **MECHANICAL ENGINEERING**

# Basic Mechanical Engineering

*Hand Notes For GATE, IES, PSUs etc...*

## **Hand Notes**

**Page Length : 157**

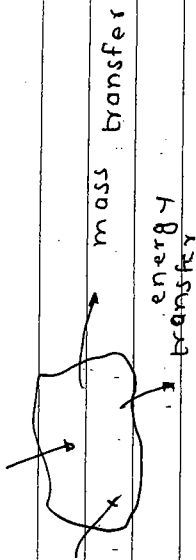
**Note :** We also providing IIT JEE, Advance, NEEt, JEE UG, GATE, IES, PSUs & Competitive Exam Materials [Handnotes, Shortnotes & Books], All Reports [Seminar Reports & PPT]

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## Cover Topic :

- Thermodynamics
- Free Expansion
- Heat Transfer
- Radiation
- Power Plants
- Machine Tools
- Types Of Shafts
- Bearings
- Resilience
- Power Transmission Devices
- Types Of Costing
- Welding
- Fabrication

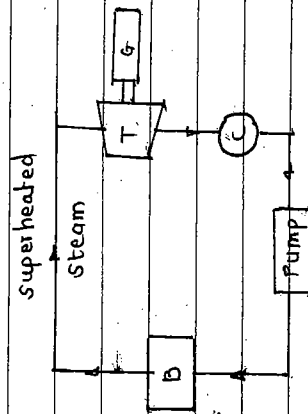




### 3) Isolated system:

Are the systems where is no energy as well as mass transfer.

eg. Thermos, thermodynamic universe.



### Energy:

1) Internal energy ( $U$ ) is due to molecular motion atomic structure & chemical composition

Types of internal energies:

- 1) chemical energy
- 2) Atomic energy
- 3) molecular internal energy

2) External energy

$$1) KE = \frac{1}{2} mv^2$$

$$2) PE = mgh$$

$$E = \text{Total energy} \\ = \text{Int energy} + \frac{1}{2} mv^2 + mgh$$

### Property

The thermodynamic co-ordinates representing a system are called properties of the system.

### 1) Intensive Properties

The properties which are independent of mass are called intensive property.

eg. pressure, density, temp, viscosity & thermal conductivity ( $K$ ).