

Section-4

Q1 Explain term "Composting".

Explain the various thermal conversion technology used in India.

⇒ Composting -

- ① Composting of refuse is a biological method of decomposing solid waste.
- ② The decomposition can be effected either under aerobic condition, or under anaerobic condition or both.
- ③ The final end product is manure called Compost or humus, which is great demand in European countries as fertilizers for farms.

Thermal Conversion Technologies

- ① It defined as the conversion of wastes into gaseous, liquid and solid production, with or without energy valorization.
- ② The main objective of Thermal Conversion technologies.
 - (i) Reducing their volume
 - (ii) obtain solid and or gaseous inerts production
 - (iii) Achieve a significant energetic valorization
 - (iv) Destruction of organic component of wastes, specially the dangerous ones

③ The thermal methods are a final solution for most of dangerous and non dangerous solid waste when is not possible treat them by biological, physical and chemical technique.

Thermal Methods

- ① Pyrolysis:- Biomass is degraded to single carbon molecule (CH_4 and CO) and H_2 producing a gaseous mixture called "producer gas".
 - ② Carbonization:- This is an age old pyrolytic process optimised for the production of charcoal.
 - ③ Gasification:- High temperature and a controlled environment lead to virtually all the raw material being converted to gas.
 - ④ Catalytic liquefaction:- This technology has the potential to produce higher quality product of greater energy density.
- b) These product should be also require less processing to produce marketable product.