

**Roll No.**

**Total No. of Pages : 01**

**Total No. of Questions : 08**

**M.Tech. (Food Tech.) (Sem.-3)**

## WASTE TO ENERGY

**Subject Code : MTFT-614-18**

**M.Code : 76523**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

- 1. Attempt any FIVE questions out of EIGHT questions.**  
**2. Each question carries TWELVE marks.**

1. Give a brief account of classification of waste as fuel. Also describe incinerators, gasifiers and digestors used for waste to energy.
2. What is pyrolysis? Discuss manufacturing of pyrolytic oils and gases. Also highlight their applications.
3. What is fluidized bed gasifier? Describe its design, construction and operation with diagrams.
4. Describe briefly gasifier engine arrangement and electrical power. Also highlight the equilibrium and kinetic consideration in a gasifier operation.
5. What are fluidized bed combustors? Describe their design, construction and operation.
6. What are biomass stoves? Describe improved chullahs and their types. Also highlight some exotic designs for them.
7. What is biogas? Describe its properties. Also highlight the biogas plant technology and its current status.
8. Write short notes on :
  - a) Biogas plant
  - b) Biomass energy program in India
  - c) Alcohol production from biomass.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**