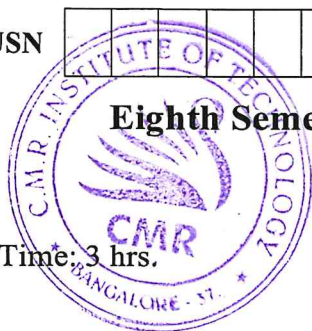


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10ME843



Eighth Semester B.E. Degree Examination, July/August 2021

Biomass Energy Systems

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Define energy plantation. Explain briefly advantages, disadvantages and attractive features of energy plantation. (10 Marks)
- b. Explain briefly sustainability of biomass. (10 Marks)
- 2 a. Write short notes on:
 - (i) Briquetting (10 Marks)
 - (ii) Pelletization (10 Marks)
- b. Explain any one thermochemical conversion method briefly. (10 Marks)
- 3 a. Define densification. Explain briefly advantages and disadvantages of densification. (05 Marks)
- b. With a neat sketch, explain piston press type densification process. (07 Marks)
- c. Write a short note on Municipal Sewage Waste (MSW) with their advantages and disadvantages. (08 Marks)
- 4 a. With a neat sketch, explain up-draft gasifier. (10 Marks)
- b. Write a short note on producer gas and its constituents. (05 Marks)
- c. Explain the applications of producer gas. (05 Marks)
- 5 a. Explain the factors which affects the biogas yield. (10 Marks)
- b. With necessary sketch, explain the working principle of a fixed dome type Chinese digester. State its advantages and disadvantages. (10 Marks)
- 6 a. With necessary block diagram, explain the production of ethanol from grains. (10 Marks)
- b. Explain how ethanol will be alternative force for automobile industry. (10 Marks)
- 7 a. What is Transesterification? Explain the process briefly. (07 Marks)
- b. Write note on use of bio diesel in IC engines. (05 Marks)
- c. Explain the stages involved in production of bio-diesel from non-edible oil seeds. (08 Marks)
- 8 a. Write a short note on bio-power generation routes. (08 Marks)
- b. Explain with a neat sketch:
 - (i) Brayton cycle
 - (ii) Rankine cycle
 (12 Marks)

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