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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**(AUTONOMOUS)****M TECH II Year I Semester Regular Examinations Nov/Dec 2019****WASTE TO ENERGY****(Common to All)**

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a Explain the importance of Industrial waste utilization with neat sketches. **6M**
 b Explain various types of digestors for waste management. **6M**

OR

- 2 a Explain classification of waste as fuel. **6M**
 b Explain conversion devices with respect to waste management. **6M**

UNIT-II

- 3 a What are the various types of Pyrolysis? Explain them. **6M**
 b Mention primary applications of Syngas in various engineering fields. **6M**

OR

- 4 a Explain the manufacturing process of pyrolytic oils. **6M**
 b Define Syngas? How syngas is produced. **6M**

UNIT-III

- 5 Draw the gasifier engine arrangement for production of Electric power and Explain the methodology. **12M**

OR

- 6 Explain the Equilibrium and Kinetic considerations in gasifier operation. **12M**

UNIT-IV

- 7 Explain Design, Construction and Operation of Fixed bed combustors. **12M**

OR

- 8 a Write Short notes on Biomass stoves. **6M**
 b Explain the operation of Fluidized bed Combustor. **6M**

UNIT-V

- 9 a Explain the production of Alcohol from Biomass. **8M**
 b Write the main applications of Biogas. **4M**

OR

- 10 Write short notes on **12M**
 (i) Thermo Chemical Conversion (ii) Direct combustion of Biomass

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