

Code No: R1621352

R16**SET - 1**

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
RENEWABLE ENERGY SOURCES
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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**PART -A**

1. a) List the advantages and limitations of solar energy (3M)
- b) What is the maximum temperature obtained in a solar furnace? (2M)
- c) How Biomass conversion takes place? (2M)
- d) What is Geothermal energy? List some geothermal sources (2M)
- e) Explain the difference between tidal range and head water in tidal scheme (3M)
- f) How Seebeck coefficients vary with temperature? (2M)

**PART -B**

2. a) Define the following terms w.r.t solar radiation: (7M)  
i) Zenith Angle ii) Hour angle iii) Surface Azimuth angle
- b) Distinguish between Flat – plate type collectors and Concentrating collectors (7M)
3. a) What are the main advantages and disadvantages of sensible heat storage with water as storage media? (7M)
- b) With a neat sketch explain the working of horizontal axis wind turbine? (7M)
4. a) What is meant by Wet fermentation and Dry fermentation (7M)
- b) Explain the constructional details and working of common circular digester with floating gas holder and no water seal (India- KVIC digester) (7M)
5. a) Explain the term thermal gradient and give and explain the classification of Geothermal regions (7M)
- b) Explain the various parts of a geothermal System with a neat schematic diagram (7M)
6. Explain the following OTEC cycle: (4M)  
i) Open Cycle ii) Closed Cycle iii) Hybrid Cycle (5M)  
(5M)
7. a) List and explain the different types of losses in fuel cell (7M)
- b) Explain about Seebeck Thermo electric effect (7M)