

Code No: RT21352

R13**SET - 1**

II B. Tech I Semester Supplementary Examinations, May/June - 2016
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 **THREE** Questions from **Part-B**

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**PART-A**

1. a) What are the advantages and disadvantages of renewable energy sources. (3M)
- b) List the different solar applications (4M)
- c) What are the applications of bio gas? (4M)
- d) List the different types of wells (4M)
- e) Write the limitations of flashed steam systems. (4M)
- f) Write short notes on seebeck, peltier and Thomson effects. (3M)

**PART-B**

2. a) Explain about parabolic trough reflector type concentrating collectors. (8M)
- b) Explain solar radiation on tilted surfaces? (8M)
3. a) Explain about the main elements of a photo voltaic system. (8M)
- b) Explain about horizontal axis wind mills with neat diagram. (8M)
4. a) Explain about continuous and batch type biogas plants with neat diagrams. (9M)
- b) What are the differences between KVIC & Janata type biogas plants. (7M)
5. a) Describe a binary cycle system for liquid dominated system. (8M)
- b) What are the advantages & disadvantages of geothermal energy over other energy forms. (8M)
6. a) Explain about the components of a hydro electric power plant. (9M)
- b) The observed difference between the high and low water tide is 8.5, for a proposed tidal site. The basin area is about 0.5 sq. km which can generate power for 3 hours in each cycle. The average available head is assumed to be 8 m, and the overall efficiency of the generation to be 70%. Calculate the power in h.p. at any instant and the yearly power output. Average specific weight of sea water is assumed to be 1025 kg/m<sup>3</sup>. (7M)
7. a) Describe an MHD closed cycle system. (8M)
- b) Derive an equation for the voltage and power output of an MHD generator. (8M)

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