Code No.: **303E1** **MR13**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

IV B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2018

Branch: **ME**

Subject: **Renewable Energy Sources**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer All Questions **5x1Mark=5 Marks**

1. What are the advantages and limitations of renewable energy sources?
2. What is solar pond?
3. What is biomass?
4. Name the places where geothermal fields available in INDIA.
5. State faraday's law.

II. Answer All Questions **10x2Mark=20 Marks**

1. Define the term Local Solar Time.
2. What are the instruments used to measure solar sun shine?
3. What are the advantages of using second glass cover which is added to above the first one in liquid flat plate collector?
4. Define the terms Aperture and Concentration Ratio for concentrating collectors.
5. Why biomass production falls in winter compared to summer?
6. List the biomass materials which are used for production of ethanol
7. Classify geothermal sources.
8. What types of turbines are used in small hydel power plants?
9. Differentiate between a Fuel cell and Battery as both supply D.C supply
10. Give names of the materials for electrodes and generator duct for MHD generator.

PART-B

Answer All Questions **5x10 Marks= 50Marks**

1. a) Define solar constant. What are the reasons for variation in solar radiation reaching the earth and that received outside the earth atmosphere?
   b) Briefly explain advantages & disadvantages of Solar Energy.

OR

2. Write short notes on Physics of sun and solar energy collection on earth.
3. a) Explain with a neat sketch the principle and operation of a Non-Convective solar pond.
   b) Draw a neat diagram of a Double roof solar still and explain its working.

OR

4. Explain the working of the solar thermal water pump with the help of a neat sketch
5. With the help of a neat diagram explain the working of Floating Drum biogas plant.

OR

6. Explain briefly about Biomass energy sources.
7. a) Explain with a neat sketch the working of Closed cycle OTEC system.
   b) What are the advantages and limitations of mini-hydel power plants?

OR

8. Derive an expression for power generated by a tidal system.
9. a) Draw a configuration of open cycle MHD generator and explain its working.
   b) Describe the working principle of a thermo-electric generator.

OR

10. Describe the working of MHD closed cycle system.