

Code: EC6T6FE-H, ME6T6FE-H

**III B.Tech - II Semester – Regular/Supplementary Examinations  
March 2020**

**RENEWABLE ENERGY SOURCES  
(Common to ECE & ME)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1. a) What is renewable energy?
- b) What are the different applications of solar PV system in rural area?
- c) List out different methods of energy storage.
- d) Discuss the principle of MHD generation.
- e) What are the advantages of fuel cells?
- f) What are the basic types of instruments employed for solar radiation measurements?
- g) How the energy produced from Bio mass?
- h) Define Vertical Axis Wind Turbine(VAWT).
- i) What is the basic principle of ocean thermal energy conversion?
- j) List the applications of fuel cells.
- k) What are the advantages and limitations of wave energy?

## PART – B

Answer any THREE questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) What is the difference between Pyrheliometer and Pyranometer and discuss about the working principle of them. 8 M
- b) Enumerate the different types of concentrating type collectors. 8 M
- 3 a) Explain about the Solar Electric power generation. 8 M
- b) Explain Solar Pond with neat sketch. 8 M
4. a) Explain with a neat diagram the working of various types of wind turbines. 8 M
- b) Explain anaerobic and aerobic digestion. 8 M
5. a) Explain with neat sketch, the operation of tidal power generation. 8 M
- b) What are the main types of OTEC power plants? Describe their working. 8 M
6. a) Explain MHD system with neat diagram. 8 M
- b) What is a fuel cell? Describe the principle of working of a fuel cell with reference to  $H_2 - O_2$  cell. 8 M