

Code: EE8T1

**IV B.Tech - II Semester – Regular/Supplementary
Examinations – May 2022**

**RENEWABLE SOURCES OF ENERGY
(ELECTRICAL AND ELECTRONICS ENGINEERING)**

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 diffuse radiation?
- b) List out the different types of Solar Energy Collectors.
- c) Mention at least four applications of Solar Energy.
- d) Explain very briefly about solar distillation.
- e) Define Aerobic digestion.
- f) Classify the different types of wind mills.
- g) What are the different methods of harnessing ocean thermal energy?
- h) Mention at least two wave energy conversion devices.
- i) What is a Fuel Cell?
- j) Name any two direct energy conversion systems.
- k) What are the various bio-mass resources?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the working of a liquid heating collector. 8 M
- b) Explain in detail the different components of Solar Radiation on Earth's surface and their significance. 8 M
3. a) Explain the working of a latent heat storage for solar energy storage. 8 M
- b) Describe the working of Solar Cell and draw its characteristics. 8 M
4. a) Derive the expression for the power developed by a wind turbine. 8 M
- b) Explain briefly about the different types of bio-gas digesters. 8 M
5. a) Explain with the help of a neat sketch, working of a OTEC system. 8 M
- b) Discuss the potential of Tidal energy in India. 8 M
6. a) What are the advantages and disadvantages of a fuel cell? 8 M
- b) Explain the working principle of a MHD Generation. 8 M