

Code No: 09A80308

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, July – 2014

RENEWABLE ENERGY SOURCES

(Common to ME, AME)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Discuss the main features of various renewable energy sources and explain their importance in the content of global warming.
- b) Explain the working of pyranometer with the help of a neat sketch.
- 2.a) Define solar irradiance, solar constant extraterrestrial and terrestrial radiation.
- b) Explain the construction and principle of operation of a sunshine recorder.
- 3.a) What are the advantages of solar concentration collection over flat plate collectors?
- b) Classify solar thermal collectors and show the constructional details of a flat plate collector.
- 4.a) What do you understand by solar distillation?
- b) Explain solar vapour absorption system for cooling.
- 5.a) State the advantages and disadvantages of vertical and horizontal axis wind mills.
- b) Explain the variation of power output of a wind turbine with tip speed of the rotor.
- 6.a) Explain the working of anaerobic digestion system with a neat sketch.
- b) Describe the working of hot dry rock well, with a neat sketch.
- 7.a) Explain the technologies available for OTEC.
- b) What are the sources of tidal energy? What is the minimum tidal range required for a practical tidal power plant?
8. Write short notes on:
 - a) Fuel cells
 - b) Carnot cycle.

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