

Code No. B6401

**JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY, HYDERABAD
M .Tech. II Semester Supplementary Examinations, March – 2009**

**RENEWABLE ENERGY SOURCES
(Power Engineering & Energy Systems)**

Time: 3 hours

Max. Marks.60

**Answer any Five questions
All questions carry equal marks**

- 1.a) Differentiate between Beam radiation and diffused radiation.
b) With the aid of a sketch, explain the working of a pyrhetimeter.
c) Explain how the efficiency of a Flat Plate collector is evaluated.
- 2.a) Explain the working of a (i) Solar chimney (ii) Solar still.
b) Explain the characteristics of wind.
c) Describe, in brief, the basics of aerodynamics.
3. Differentiate, with the aid of suitable sketches between HAWT and VAWT.
- 4.a) How are biofuels classified?
b) Explain, with the aid of a sketch, the anaerobic digestion system for biogas.
- 5.a) Discuss the principle and working of OTEC.
b) Explain the working and analysis of open cycle system.
- 6.a) Explain the principles of Tidal Power generation.
b) How is energy estimation done for tidal systems and what are the draw backs. Discuss.
- 7.a) Discuss the wave characteristics.
b) Explain the extraction techniques of cyclothermal power.
8. Write short notes on:
 - a) Wind turbine loads
 - b) Evacuated solar collector
 - c) Biofuel operation of IC engines.
 - d) Oscillating water column.
