

Code: 9A02706

R09

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2014

RENEWABLE ENERGY SOURCES
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain how to estimate solar radiation on titled surface.
(b) Briefly describe the impact of solar power on environment.
- 2 (a) How concentrating collectors are different from flat plate collectors? Explain.
(b) With the aid of neat sketch classify flat plate collectors for water/air heating.
- 3 (a) Explain the principle of operation and description of non-convective solar pond.
(b) Explain the pebble bed storage system in sensible heat storage.
- 4 (a) List out the differences between horizontal and vertical axis windmills.
(b) Derive that the maximum power that can be extracted from a horizontal axis wind turbine is only 59.5%.
- 5 (a) Discuss economic aspects of biogas.
(b) List out the differences between anaerobic and aerobic digestion systems.
- 6 (a) Explain the potential of geothermal sources in India.
(b) Explain the energy extraction technique from hot dry rock.
- 7 (a) Explain the potential and kinetic energies associated with wave energy.
(b) Explain the working principle of OTEC system.
- 8 Write short notes on:
 - a) (Principles of DEC.
 - (b) Need for DEC.
