

Code: 9A03802

R09

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

ENERGY SYSTEMS

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Write short note on sun earth angles:
 - (i) Latitude.
 - (ii) Altitude.
 - (iii) Zenith angle.
 - (iv) Azimuth angle.
- (b) What are the convention and non-conventional sources? Write advantages of non-conventional energy sources.
- 2 (a) What are the applications of flat plate collectors?
- (b) What is thermal energy storage?
- 3 (a) Explain working principle of solar PV cells.
- (b) What are the materials used for PV cells? Explain in brief.
- 4 (a) Classify wind energy conversion systems.
- (b) What are Betz criteria?
- 5 What are the various types of bio-gas plants? Explain their working with neat sketch.
- 6 (a) Write working principle of vapour dominated geo power plant.
- (b) What is total flow geo-thermal power unit?
- 7 (a) Classify OTEC power plants.
- (b) What is the progressive wave? Explain in brief.
- 8 (a) What is MHD power generation?
- (b) Write short note on open cycle MHD system and closed cycle MHD system.
