

NR/R09

Code No: A4906/C4909, C6403

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I Semester Examinations, March/April-2011

ENERGY CONVERSION SYSTEMS

**(COMMON TO ELECTRICAL POWER ENGINEERING, POWER ENGINEERING AND
ENERGY SYSTEMS)**

Time: 3hours

Max. Marks: 60

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

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- 1.a) Explain the construction and working of a solar cell.
- b) Draw the V-I characteristics of a typical solar cell and discuss the effect of temperature and irradiance variation. Also give the temperature coefficients. [12]

- 2.a) Explain the testing of a solar under solar simulator with neat schematic.
- b) Explain the procedure to determine the curve correction factor. [12]

- 3.a) Explain the principle of MHD power generation with neat sketch.
- b) Explain the working of closed cycle MHD system. [12]

- 4.a) Discuss the effect of blade profile and Yaw control on Wind Energy conversion system.
- b) Classify Wind Energy conversion systems and list out their advantages and disadvantages. [12]

5. What is the principle of tidal power generation? Explain the various components of tidal power plants with neat sketch. [12]

- 6.a) Explain the process of coal gasification.
- b) Classify bio-mass conversion technologies and explain them. [12]

7. Explain the working of cogeneration plant and discuss its merits and demerits. [12]

8. Explain the working of a lead-acid battery and discuss its charging and discharging characteristics. [12]
