

R09

Code No: C4209, C4309, C5409

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

ENERGY CONSERVATION SYSTEMS

(COMMON TO POWER AND INDUSTRIAL DRIVES, POWER ELECTRONICS, POWER ELECTRONICS AND ELECTRIC DRIVES)

Time: 3hours

Max. Marks: 60

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

- - -

- 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]
