NR

Code No: 52108/MT

M.Tech. – I Semester Supplementary Examinations,
September, 2008

ENERGY CONVERSION SYSTEMS
(Common to Power Electronics & Electric Drives/ Power & Industrial Drives/ Power Electronics/ Electrical Power Engineering/ Power Engineering & Energy Systems)

Time: 3hours **Max. Marks:60**

Answer any FIVE questions
All questions carry equal marks
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1.a) What is a solar cell? Explain its principle of operation and working.
b) What are solar concentrators? Describe the various components of a solar concentrator and discuss its advantages.
c) Discuss the various practical applications of solar energy.

2.a) Describe the typical layout of a solar power plant.
b) Describe the working of a Flat plate solar energy collector.
c) Discuss the economic viability of harnessing solar energy in comparison with other non-conventional energy sources.

3. Describe the working principles of MHD generation. Describe the constructional details and working of a commercial MHD generator. How is it different from ideal MHD generator.

4.a) Discuss the various considerations in choosing a site for locating a wind power station.
b) Describe the working of any one type of commonly employed wind power turbine.

5.a) Describe the working of a turbine employed for tidal power generation.
b) Discuss the principles of operation of wave energy conversion. What do you understand by power content of a wave.
c) Discuss different types of ocean thermal energy conversion systems.

6.a) Explain in detail the working of a Biomass energy plant.
b) What is a fuel cell? Explain the working of a fuel cell.

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7.a) Explain clearly what you understand by cogeneration.
b) Discuss the Global Energy Position and compare with energy scenario of our country.

8. Write short notes on:
a) Environmental effects of energy conversion systems
b) Applications of superconducting materials
c) Pollution free energy systems.

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