NR/R09

Code No: A4906/C4909, C6403

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, October/November-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 Spectral distribution of energy in the solar radiation.
b) Draw the equivalent circuit of a typical solar cell and derive the expression for I_{SC} and V_{OC}. [6+6]

2.a) How do you transpose V-I characteristics to the desired Irradiation and temperature? Explain.
b) Explain the procedure to determine the values of Temperature coefficients. [6+6]

3.a) Explain the factors that influence the output of a wind energy converter.
b) Explain the basic components of a Wind Energy Conversion system with neat schematic. [6+6]

4.a) How waves are formed? Explain the availability of wave energy in India & World wide?
b) Explain the working of any two wave energy conversion devices. [6+6]

5. Explain the working of a Double basin tidal power plant and estimate the power developed from it. [12]

6. Explain the principle of a
a) See beck effect and
b) Peltier effect
With relevant expressions. [6+6]

7. Explain the working of a combined cycle power plant and list out its advantages and applications. [12]

8. Discuss the impact of various conventional sources of energy on the environment and suggest remedial measures. [12]

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