Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

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M.Tech.(Power System) (E-I 2013) (Sem.–2)

RENEWABLE ENERGY RESOURCES

Subject Code : MTPS-204C

M.Code : 71372

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries equal marks.**

1. Describe the main features of various types of renewable and non-renewable energy resources and explain the importance of renewable energy sources in the context of global warming.
2. Classify different types of solar thermal collectors and show the constructional details of a flat plate collector. What are its main advantages and limitations?
3. a) Using suitable diagram, discuss the power versus wind speed characteristics of a wind turbine.

   b) How the selection of optimum wind energy generator is done?
4. a) Describe various types of geothermal resources.

   b) What are the environmental impacts of geothermal energy?
5. a) Explain how ocean tides are generated and how the power can be tapped. Discuss the limitations of this method.

   b) Describe the construction and principle of operation of a turbine used for tidal power.
6. Discuss the principle of operation of a fuel cell. Derive the expression for calculating energy output and emf of a fuel cell.
7. What are the various ways to store Hydrogen? Discuss the development of a Hydrogen Cartridge.
8. Differentiate between Electric and Hybrid Electric vehicles. Also explain the working of a Hydrogen-powered electric vehicle.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.