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R-11

Code: 1G585

IV B.Tech. II Semester Supplementary Examinations Nov 2016

Nonconventional Sources of Energy

(Mechanical Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the construction and operation of any two instruments used for measuring solar radiation.
b) Explain the environmental impact of solar power in detail.
2. a) Explain thermal analysis of flat plate collector with necessary equations.
b) How the orientation of collectors influence solar energy collection.
3. a) Explain the concept and principle of working of solar pond.
b) Explain Photo voltaic energy conversion with a neat diagram and also mention the application of PV Cells.
4. a) Discuss about the performance curves of wind turbines.
b) Explain the Horizontal axis wind mills in detail.
5. With a neat sketch explain biomass gasification.
6. a) Discuss about the potential of geothermal energy in India.
b) Classify the resources of geothermal energy.
7. a) What is the source of tidal energy? What is the minimum tidal range required for practical power plant?
b) List out the advantages and disadvantages of OTEC systems.
- 8 a) Explain the principle of MHD generation.
b) Write short notes on Carnot cycle.
c) Discuss the need of direct energy conversion.
