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**FIFTH SEMESTER
SUPPLEMENTARY EXAMINATION**

**B.Tech.[EC].
Feb-2019**

Subject: Non-Conventional Energy (PT-365)

Time: 3:00 Hours

Max. Marks: 50

Note: Answer all questions. Assume suitable missing data, if any.

1. Enlist the different non-conventional energy systems? What are the prospects of non-conventional energy in India? [5]
2. What are the advantages and limitations of renewable energy resources? Write a note on energy crisis in India. [5]
3. Explain in brief the different methods of hydrogen storage. Describe how hydrogen can be used as an alternative fuel for motor vehicles. [5]
4. Discuss the factors affecting biogas generation. Discuss the popular biogas plants developed in India. What are various problems and constraints for biogas development? [5]
5. What is the need for alternate energy sources? Explain by considering solar energy. [5]

Or

What is geothermal energy? List its merits and demerits, applications and environmental impact. [5]

6. Explain the principle of Wind Energy Conversion. What are the basic components of wind energy conversion system? Explain with a neat diagram. [5]

Or

Discuss, in detail, the comparative cost considerations and economics of the following non-conventional energy sources: Solar, biogas, wind, tidal and geothermal. [5]

7. What are the advantages and limitations of renewable energy resources? Write a note on energy crisis in India. [5]

Or

Sketch and explain single basin type tidal power plant operation. [5]

8. Discuss the prospects and status of wind energy in India. [5]
9. List three major advantages and three major disadvantages of fuel cells compared to other power conversion devices. Discuss at least two potential applications where the unique attributes of fuel cells make them attractive? [5]

Or

Explain the Hall Effect in magneto hydro dynamic (MHD) generator and methods adopted to overcome the limitations. [5]

10. In general, do you think a portable fuel cell would be better for an application requiring low power but high capacity (long run time) or high power but small capacity (short run time)? Explain. [5]

Or

Explain the principle of ocean thermal energy conversion (OTEC). With a simple layout, explain the working of a closed cycle OTEC plant. [5]