Reg. No. : | | | | | | | | | | |

Question Paper Code: 31377

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Elective

Electrical and Electronics Engineering

01UEE903 - NON-CONVENTIONAL ENERGY RESOURCES

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State different renewable energy resources.
2. What are the factors governing global warming? How it can be minimized?
3. Give the reasons for low efficiency in solar cells.
4. List different types of solar collectors.
5. What are the advantages of vertical axis wind turbine over horizontal axis wind turbine?
6. Define cut-in and cut-out speed in wind turbine.
7. Distinguish between wet fermentation and dry fermentation.
8. List the advantages of biomass gasification compared to biomass combustion.
9. Mention the relative advantages and limitations of tidal power projects.
10. Differentiate between a fuel cell and a battery.

PART - B (5 x 16 = 80 Marks)

11. (a) Summarize different reserves of energy resources and their potential achievements in the world. (16)

Or

(b) Discuss different renewable energy scenario and their potential achievements in India. (16)

12. (a) With suitable diagram, explain the operation of various types of solar water heating systems. (16)

Or

(b) Explain the different types of solar cells on the basis of material thickness and the type of junction structure. Discuss current-voltage characteristic of solar cell for different irradiations and temperatures. (16)

13. (a) Explain the working principle of wind energy system with a block diagram. List the procedures to select a site for wind electric generator installation. (16)

Or

(b) Discuss in detail about wind data collection and energy estimation. (16)

14. (a) With neat diagrams explain floating drum and fixed dome bio gas plants. (16)

Or

(b) With suitable schematic diagram explain how power is produced by cogeneration using rice husk. (16)

15. (a) Explain with suitable schematic diagram closed OTEC cycle plant and point out its major differences with a conventional thermal electrical plant. (16)

Or

(b) Describe with suitable diagrams the float wave and fixed wave power conversion devices. (16)