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Question Paper Code: 39303

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

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 out factors affecting generation of bio-gas.
9. List out geothermal energy sources.
10. Draw block diagram of small hydro power plants.

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) Describe various types of renewable energy sources. (16)

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

Or

(b) Describe with block diagram working of solar thermal power plant. (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) Explain construction and working of vertical axis wind turbine. (16)

14. (a) With diagram explain working of two stage digestion process. (16)

Or

(b) With block diagram describe production of ethanol from sugar cane. (16)

15. (a) With diagram explain single basin tidal power plant . (16)

Or

(b) Explain working of hydrogen fuel cell system. (16)