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Question Paper Code: S31581

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Elective

Electronics and Instrumentation Engineering

01UEI920 - FUNDAMENTALS OF RENEWABLE ENERGY SYSTEMS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the different types of solar cells.
2. What are the compounds present in the coal?
3. Define solar attitude angle.
4. Define collector efficiency.
5. What are the instruments used for measuring solar radiation and sunshine?
6. What is the type of generator used in wind power plant?
7. Define Vertical Axis Wind Turbine (VAWT).
8. What are the special problems in construction of barriers for tidal scheme?
9. What are the constituents of biogas?
10. What do you mean by flywheel energy storage?

PART - B (5 x 16 = 80 Marks)

11. (a) Write about the availability energy consumption pattern and growth rate in India. (16)

Or

(b) What are the conventional sources of energy and explain briefly. (16)

12. (a) With the help of a neat sketch describe a solar heating system using water heating solar collectors. What are the advantages and disadvantages of this method? (16)

Or

(b) Explain the principle of building integrated PV system with suitable sketch. (16)

13. (a) Explain briefly about the horizontal wind mills with neat sketch. (16)

Or

(b) (i) Give a detailed description about the applications of gasifiers. (8)

(ii) Describe in detail about biochemical conversion involved in anaerobic digestion. (8)

14. (a) Explain with neat sketches, the operation of a geothermal power plant. (16)

Or

(b) Write short note on bio energy from agriculture waste. (16)

15. (a) Explain with neat sketch, the methods of operation of tidal power generation. (16)

Or

(b) What is a fuel cell? Describe the principle of working of a fuel cell with reference to H₂-O₂ cell. (16)
