

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 39520

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. Give three types of solar energy collectors.
2. Define solar constant.
3. Write and explain wind power equation.
4. What are the advantages of wind power?
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 short notes on different types of solar energy collectors with neat diagrams.

(16)

Or

- (b) What are the conventional sources of energy and explain briefly. (16)
12. (a) Write short notes on:
- (i) Wind energy conversion devices (8)
 - (ii) Aerodynamics of wind turbine rotor (8)
- Or
- (b) Explain the principle of building integrated PV system with suitable sketch. (16)
13. (a) (i) Identify the factors affecting biogas generation. (10)
- (ii) State the term pyrolysis and distinguish the method followed for gasifiers classification. (6)
- 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) With neat diagram, explain the technology adopted for production of hydrogen. List its application. (16)
15. (a) Explain how ocean tides are generated and how the power can be tapped? Discuss the limitations of this method. (16)
- Or
- (b) With a neat sketch, describe the energy conversion operation involved in geothermal power plant. (16)
-