

Reg. No. :

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|

**Question Paper Code: 39058**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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. 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. Write any two items used as biomass fuels.
6. Mention some organic materials used in bio-mass plant.
7. How fuel cells are classified?
8. Mention any two environmental issues of fuel cells.
9. What is geothermal power?
10. Mention the type of tidal power turbine.

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) With a neat diagram, explain how wind energy can be converted into electrical energy. (16)

Or

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

13. (a) Explain with neat sketches, the types and power generation of a biogas power plant. (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) Compare the working, application, merits and demerits of any two fuel cells. (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) What is geothermal energy? How can geothermal energy are utilized for electric power Generation. (16)