

G 1484

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Sixth Semester**

Branch : Electrical and Electronics Engineering

EE 010 606 L06—RENEWABLE ENERGY RESOURCES (Elective I) (EE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Mention advantages and limitations of renewable energy sources.
2. Discuss solar time and soar constant.
3. Draw the equivalent circuit of solar cell.
4. What are the criteria for the selection of site of wind farms ?
5. What are the components of a tidal power plant ?



(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain present energy scenario in India.
7. Write short note on solar green house.
8. Explain the properties of solar selective coatings.
9. Explain the terms-lift and drag in wind power generation.
10. Discuss different types of tidal power plants.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Explain the types of turbines and generators used in small, mini and micro hydro power plants.

*Or*

12. Explain environmental aspects of electrical energy generation and the types of renewable energy sources.

**Turn over**

13. (a) Explain the method for predicting the availability of solar radiation. (8 marks)  
(b) Write a short note on solar furnace. (4 marks)

Or

14. (a) Discuss the various methods for radiant energy measurement. (8 marks)  
(b) Explain the design of solar water heater. (4 marks)
15. Explain the classification of PV systems and the design of a stand alone PV system.

Or

16. Discuss voltage current characteristics of solar cell. Explain efficiency of solar cell and the methods to improve the efficiency.
17. (a) Explain how estimation of wind energy can be obtained from wind data. (8 marks)  
(b) Discuss ideal and real fuel cells. (4 marks)

Or

18. (a) Explain the principle involved in operation of fuel cell. Discuss about the types of fuel cells. (8 marks)  
(b) Discuss the types of rotors used in wind turbines. (4 marks)
19. Explain estimation of geothermal power and geothermal energy conversion process.

Or

20. Explain the following :—
- (a) Biomass energy conversion process.  
(b) Wave energy conversion devices.



(6 × 2 = 12 marks)  
[5 × 12 = 60 marks]