

19 DEC 2022

Reg. No.

Question Paper Code

11482

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Seventh Semester

Electrical and Electronics Engineering

EE8703 - RENEWABLE ENERGY SYSTEMS

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

- |  | <i>Marks,<br/>K-Level, CO</i> |
|--|-------------------------------|
| 1. Compare the conventional and non-conventional energy sources. | 2,K2,CO1                      |
| 2. What is Sustainable development?                              | 2,K1,CO1                      |
| 3. Define Pitch angle.   | 2,K1,CO2                      |
| 4. Mention the advantages of grid tied wind power plant.         | 2,K1,CO2                      |
| 5. What is meant by solar collector? Mention its types.          | 2,K1,CO3                      |
| 6. Illustrate the I-V Characteristics of solar PV System.        | 2,K2,CO3                      |
| 7. Name the constituents of bio gas.                             | 2,K1,CO4                      |
| 8. Define Geothermal gradient.                                   | 2,K1,CO4                      |
| 9. List the advantages of tidal power generation.                | 2,K1,CO5                      |
| 10. Outline the schematic of fuelcell.                           | 2,K1,CO5                      |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) Explain about the different types of Renewable energy (RE) sources. 13,K1,CO1
- OR**
- b) Generalize the present Indian and international energy scenario of solar energy sources. 13,K2,CO1
12. a) Explain the construction and working of Vertical Axis Wind Turbine (VAWT). 13,K2,CO2
- OR**
- b) Summarize the Grid integration issues of Wind Power Plants. 13,K2,CO2
13. a) Explain the construction and working principle of Central Receiver Power Plants. 13,K2,CO3

**OR**

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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- b) Discuss briefly about  
(i) Solar drying. 6,K2,CO3  
(ii) Solar cells. 7,K2,CO3

14. a) Summarize the following methods of biogas generation  
(i) Gasification 6,K2,CO4  
(ii) Anaerobic Digestion 7,K2,CO4

OR

- b) Outline in detail, the operation of pumped storage hydro power plant. 13,K2,CO4

15. a) Explain in detail the operation of single basin and double basin type tidal power plant. 13,K2,CO5

OR

- b) Describe the different methods of energy storage system. 13,K2,CO5

**PART - C (1 × 15 = 15 Marks)**

16. a) Explain the construction and working principle of solar photovoltaic system with a neat sketch. 15,K3,CO3

OR

- b) Summarize the various methods Maximum Power Point Tracking in the Solar Photo voltaic system and discuss its advantages and disadvantages. 15,K2,CO3