

25-04-2023

Reg. No.

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Question Paper Code

11810

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023

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,
K-Level, CO</i> |
|---|-------------------------------|
| 1. List the limitation of Renewable (RE) sources. | 2,K1,CO1 |
| 2. What is Geothermal Energy? | 2,K2,CO1 |
| 3. Draw the block diagram of Wind power plant. | 2,K2,CO2 |
| 4. Mention the advantages of grid tied wind power plant. | 2,K2,CO2 |
| 5. Define Solar Constant. | 2,K2,CO3 |
| 6. Illustrate the I-V characteristics of PV System. | 2,K1,CO3 |
| 7. What is geothermal energy? | 2,K1,CO4 |
| 8. Classify the water turbines used in hydro power plant. | 2,K2,CO4 |
| 9. What is tidal energy? | 2,K1,CO5 |
| 10. Explain Electro chemical Storage. | 2,K2,CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

- | | |
|--|-----------|
| 11. a) Explain about the different types of Renewable energy (RE) sources. | 13,K2,CO1 |
| OR | |
| b) Explain in detail about the Geothermal Energy sources. | 13,K2,CO1 |
| 12. a) Explain about the components of WPPs with necessary diagram. | 13,K2,CO2 |
| OR | |
| b) Summarize the Grid integration issues of WPPs. | 13,K2,CO2 |
| 13. a) (i) Contrast the merits and demerits of solar energy. | 6,K2,CO3 |
| (ii) List some important applications of PV. | 7,K2,CO3 |
| OR | |
| b) Draw the schematic diagram of solar thermal power plant used for power production and explain the operation of this system in detail. | 13,K2,CO3 |

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

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14. a) Outline in detail the operation of pumped storage hydro power plant. *13,K2,CO4*

OR

b) List out the classification of biogas plants and explain any two with neat sketch. *13,K2,CO4*

15. a) Describe the different methods of energy storage system. *13,K2,CO5*

OR

b) Explain with a neat sketch the operation of OTEC plants. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Summarize the maximum power point tracking in the Solar Photo voltaic system and discuss the advantages and disadvantages. *15,K2,CO3*

OR

b) Generalize the present Indian and international energy scenario of conventional and RE sources. *15,K2,CO1*