POLYTECHNIC, B.E/B.TECH, M.E/M.TECH, MBA, MCA & SCHOOL

Notes   *Available @*
Syllabus
Question Papers   www.binils.com
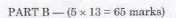*Results and Many more…*

Reg. No. :

Question Paper Code : 90530

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Seventh Semester

Electrical and Electronics Engineering

EE 8703 — RENEWABLE ENERGY SYSTEMS

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the factors influencing the amount of GHG emissions.

2. Comment on the present energy scenario of renewable energy in India.

3. Give the main components of the wind power plant.

4. Name any two important wind power plants in India.

5. Define collector efficiency.

6. Draw the equivalent circuit of a solar cell.

7. Name the constituents of biomass.

8. Define the geothermal gradient.

9. Write a note on wave energy.

10. Define the hybrid energy systems.

POLYTECHNIC, B.E/B.TECH, M.E/M.TECH, MBA, MCA & SCHOOL

Notes   *Available @*
Syllabus
Question Papers   www.binils.com
Results and Many more…

PART B — (5 × 13 = 65 marks)

11. (a) Explain the role and importance of renewable energy sources in detail.

Or

(b) (i) Explain the significance of energy consumption as prosperity. (7)

(ii) List the advantages and limitations of renewable energy sources. (6)

12. (a) Compare the vertical axis wind turbine and horizontal axis wind turbine.

Or

(b) Generalize the factors to be considered for the siting to install the wind power plant.

13. (a) Discuss the construction and working principle of Central Receiver power plants.

Or

(b) Explain the Perturb and Observe MPPT algorithm with a flowchart.

14. (a) Discuss the biomass conversion technologies and explain any one in detail.

Or

(b) Describe the various components and working of the hydroelectric system.

15. (a) Briefly discuss the components of tidal power systems with a neat block diagram.

Or

(b) Describe the construction and working principle of a Hydrogen-Oxygen fuel cell.

PART C — (1 × 15 = 15 marks)

16. (a) Using the Betz model of the wind turbine, derive the expression for power extracted from the wind.

Or

(b) Explain the closed-cycle OTEC system with a neat diagram.

———————

2   90530