

18AA1104

M. Tech. EXAMINATION, 2021

(First Semester)

(C Scheme) (Main & Re-appear)

EE(PS)

MPS521C

RENEWABLE ENERGY SYSTEM

Time : 2½ Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) Discuss the mix of generation of India and explain the role of renewable sources in near future.
(b) Draw load duration curve. Give characteristics of Base load and peak load power plants.
2. (a) Discuss the steps involved in power system expansion planning.
(b) Explain demand side management in distribution systems.
3. (a) Derive the power equation for wind power generation. Give the Betz limit.
(b) Define Tip speed ratio, power co-efficient and pitch control of wind power plants.

4. (a) Give the limitations of use of induction generator for wind power.
(b) Discuss the variable speed generators used for Wind Energy Conversion Systems (WECS).
5. (a) Give the detailed layout of a solar PV power plant.
(b) Compare the solar PV technologies.
6. (a) Give the layout of a solar thermal power plant.
(b) Compare string and central inverters.
7. (a) What are the protection issues of distributed generation ?
(b) List the power quality issues of distributed generation.
8. (a) Discuss grid codes to integrate wind/solar power generators to power systems.
(b) Discuss the methods of voltage control in weak grids.
9. (a) Distinguish between Grid and Microgrid.
(b) Distinguish between central and distributed generation.
(c) Draw the solar map of India.
(d) Give cost components of electric power generation.
(e) Explain maximum power point tracking technique.