

2054

B.E. (Electrical and Electronics Engineering)
Eighth Semester

PE-EE-801: Non- Conventional Energy Resources and Grid Integration

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What are the conventional sources of energy?
- b) Discuss any two limitations of conventional sources of energy.
- c) Name the various types of non-conventional dynamic generation technologies which are used in India.
- d) Why MPPT techniques are required?
- e) Differentiate between Grid connected and islanding operation of an energy source with example. (5x2)

UNIT - I

- II. Discuss the need and growth of alternative energy sources from Indian perspective. (10)
- III. Discuss advantages and disadvantages of Wind Energy Systems. (10)
- IV. Discuss the flywheel energy storage technology and its uses to avoid limitations of non-conventional energy systems. (10)

UNIT - II

- V. Discuss the use of controllers for load frequency and voltage control of non-conventional energy sources. (10)
- VI. Discuss the challenges and remedies for grid integration of nonconventional energy sources. (10)
- VII. Give an overview of various IEEE and IEC standards and their role for grid integration of renewable energy. (10)

x-x-x