

Reg. No. :

Name :

VIII Semester B.Tech. Degree (Supplementary – Including Part Time)

Examination, October 2014

(2007 Admn. Onwards)

PT2K6/2K6 EE 804 : ENERGY TECHNOLOGY

Time : 3 Hours

Max. Marks : 100

Instruction : Answer all questions.

- I. 1) Discuss the present Indian energy scenario.
- 2) What do you mean by the term "Energy audit" ?
- 3) Write a short note on soft starters used in electrical systems.
- 4) Explain any one type of automatic power factor controller.
- 5) Discuss briefly about the photovoltaic conversion of solar energy.
- 6) Explain why a wind turbine can never have an efficiency of greater than 50%.
- 7) What are self excited generators ?
- 8) What do you mean by variable costs of power generation ? (8×5=40)
- II. 1) Discuss energy and environment.

OR

2)a) Discuss how energy auditing is performed in motors, transformers and lighting systems.

b) Briefly discuss about the instruments used for energy auditing.

15

P.T.O.



III. 1) Explain in detail the different losses and the methods to reduce these losses with respect to an energy efficient motor.

OR

2) Explain variable impedance type and voltage source converter based power factor connection. 15

IV. 1) a) With a neat sketch explain the basic structure of p-n junction solar cell.
b) Describe briefly the construction of a standard single crystal Si photovoltaic cell.

OR

2) What do you mean by a wind turbine ? Explain its classifications with neat diagrams. 15

V. 1) Write short notes on :

- a) Induction generators
- b) Permanent magnet generators.

OR

2) Explain about the different costs and charges that are to be considered for the economies of energy conservation. 15