



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

I SEMESTER M.TECH (ENERGY SYSTEMS & MANAGEMENT)

END SEMESTER EXAMINATIONS, NOVEMBER 2019

SUBJECT: ADVANCED ENERGY MANAGEMENT [ELE 5151]

REVISED CREDIT SYSTEM

Time: 3 Hours

Date: 23 November 2019

Max. Marks: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- | | |
|--|-------------|
| 1A. Differentiate between energy accounting and energy auditing. | (05) |
| 1B. Give an account of the Electricity Act 2003 bringing out the new features which are different from the existing legal provisions. | (05) |
| 2A. Explain the theory behind economic load dispatch. Explain various methods for achieving economic load dispatch. | (05) |
| 2B. What are the different techniques used for demand side management? | (05) |
| 3A. Illustrate a few applications of custom power devices for power system. | (05) |
| 3B. What is Energy Management System? Explain EMS architecture. | (05) |
| 4A. Explain various states of power systems with relevant block diagrams. | (05) |
| 4B. Explain SCADA and its hardware and software implementation. | (05) |
| 5A. Bring out the differences between SCADA and DCS. | (05) |
| 5B. Explain IEC 61850 standard for SCADA bringing out the salient features. | (05) |