

B.Tech IV Year I Semester (R15) Regular Examinations November/December 2018

ENERGY AUDITING & DEMAND SIDE MANAGEMENT

(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Define energy audit and explain standard energy audit.
 - (b) Explain Sankey diagrams with neat sketch.
 - (c) What is energy efficiency and what factors are affecting on energy efficiency?
 - (d) Define power factor and its role on motors performances.
 - (e) Write short notes on lighting control of energy audit.
 - (f) What is PLC and its applications in electrical technology?
 - (g) Define DSM.
 - (h) Write short explanation about peak clipping and peak shifting.
 - (i) Define and explain about taxes and tax credit.
 - (j) Write short notes basic payback calculations of DSM programs.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 Explain briefly in relation to electrical energy consumption and conservation in India and in the world.
- OR**
- 3 Explain in detail how to conserve electrical energy and explain some of the means to conserve energy.

UNIT – II

- 4 (a) Write importance of power factor improvement in energy efficient motors.
(b) Explain in detail about location of capacitors in power factor improvement.

OR

- 5 Explain briefly about the effect of harmonics on power factor with suitable examples.

UNIT – III

- 6 Explain briefly about the following energy instruments: Watt meter, Pyrometer, Lux meter and Tong testers.

OR

- 7 (a) Discuss in detail about lighting energy audit.
(b) Write short notes on Data loggers and thermocouples.

UNIT – IV

- 8 (a) Explain in brief about the concept of 'time of day pricing'.
(b) Explain the benefits of DSM in detail.

OR

- 9 (a) Write in brief about Multi-Utility power exchange model of DSM.
(b) Explain in brief about demand side load management.

UNIT – V

- 10 Explain in details about:
- (a) Ratepayer impact measure test.
 - (b) Program administrator cost test.

OR

- 11 Explain in brief about cost effectiveness test for demand side management programs.
