

Code No: **R41025**

R10

Set No. 1

IV B.Tech I Semester Supplementary Examinations, February/March - 2018

ENERGY AUDIT CONSERVATION AND MANAGEMENT

(Open Elective)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) List and explain the different type of energy audit and on what factors it is divided? [8]
b) Explain the different steps that are considered for detailed Energy Audit. [7]
- 2 a) Explain the different energy conservation schemes that are used for reduction in energy use. [8]
b) Explain in detail about load profile and energy savings potential. [7]
- 3 a) Explain in detail about Flood Lighting. [7]
b) A room measuring 12 m x 12 m is to be illuminated by 6 lamps and the average illumination required is 30 lumens/m². Taking utilization and depreciations factor as 0.6 and 1.1 respectively, determine the mean spherical candle power per lamp. [8]
- 4 a) Explain the different power factor improvement methods and give their relative merits. [8]
b) A synchronous motor having a power consumption of 30kW is connected in parallel with a load of 160 kW having a lagging power factor of 0.80. If the combined load has a power factor of 0.92, what is the value of leading reactive kVA supplied by the motor and at what power factor is it working? [7]
- 5 a) Explain the significance of data logger and where they are used. [8]
b) Explain in detail about power analyzers and give its applications. [7]
- 6 a) Explain the advantages of replacement analysis and prove it with an example. [8]
b) List the different conservative methods used in space heating. [7]
- 7 a) Distinguish between normal motor and energy efficient motor. [8]
b) Explain the different modes of heat transfer in space heating methods. [7]
- 8 Write short notes on the following:
a) Different methods of replacement analysis
b) Power factor correction [15]