Code No: R163202F **R16** SET - 1

III B. Tech II Semester Supplementary Examinations, November - 2019

ENERGY AUDIT, CONSERVATION AND MANAGEMENT

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1. a) Explain the role of an Energy manager. [2M]
   b) Explain about different measurement techniques used for measuring luminous intensity. [2M]
   c) Explain the effect of harmonics on Power factor. [2M]
   d) Explain how an HVAC system improves the energy efficiency. [3M]
   e) Give the significance of Power factor correction. [3M]
   f) Explain the term Return on investment. [2M]

PART –B (56 Marks)

2. a) Explain various energy conservation schemes in detail. [7M]
   b) Explain in detail about Sankey diagram, Pie charts and Load Profiles used in Energy flow representation. [7M]

3. a) Explain in detail about Energy conservation in lighting. [7M]
   b) If a lamp of 200 C.P. is placed 1 meter below a plane mirror which reflects 90% of light falling on it, determine illumination at a point 3 meter away from the foot of the lamp which is hung 4 meters above ground. [7M]

4. a) Explain the effect of non-linear loads on the Power factor. [7M]
   b) A synchronous motor having a power consumption of 60 kW is connected in parallel with a load of 200 kW having a lagging power factor of 0.86. If the combined load has a power factor of 0.95, what is the value of leading reactive kVA supplied by the motor and at what power factor is it working? [7M]

5. a) List the different types of Air conditioners and explain any one type of it in detail. [7M]
   b) Explain energy conservation in commercial buildings. [7M]

6. a) What is the time value of money and explain its importance? [7M]
   b) Explain computation of simple pay back method with suitable example. [7M]

7. a) Explain the conditions to be fulfilled for an energy project to economically justifiable. [7M]
   b) Explain the net Present value method of computation of Economic aspects. [7M]

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