Code No: **RT41024** **R13** **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: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) Explain the barriers in Energy Audit and how it can be overcome. [4]
   b) Define the terms w.r.t Lighting (i)Luminous efficiency and (ii) Candela [4]
   c) Explain the significance of Tong tester [4]
   d) Discuss various types of Electric water heating system [3]
   e) Explain the concept of present worth method [4]
   f) List the different types of depreciation methods [3]

PART–B *(3x16 = 48 Marks)*

2. a) List and enumerate the Goals of Energy Audit and where they can be applied. [8]
   b) Explain the different types of representations in Energy consumption. [8]

3. a) Explain in detail about Horizontal polar curve and Vertical polar curve [8]
   b) The table II shows the energy costs of a company using coke, gas and electricity. This company produces 20 x10^3 tonnes per annum. Calculate the Cost indices?

Table II ENERGY COSTS

Energy type	***Consumption***	***Costs ($)***
Coke	2.5x10^3 tonnes	108.0 x10^3
Gas	22x10^3 therms	3.6x10^3
Electricity	3x10^9 Wh	22.5x10^3
TOTAL		134.1 x10^3

[8]

4. a) Explain the effects of non-linear loads and harmonics on power factor of a motor and how they can be nullified. [8]
   b) Explain the principle of operation of Pyrometer with a neat sketch. [8]

5. a) List and explain the different types of Electric heating methods. [8]
   b) Explain the different energy conservation methods required for domestic buildings. [8]

6. a) Explain the merits and demerits of Energy efficient motors [8]
   b) What is time value of money and give its significance [8]

7. Discuss the different methods of return on investment analysis for energy projects with suitable example. [16]