B.TECH. ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

December, 2013

BIEE-026 : ENERGY AUDITING AND ANALYSIS

Time : 3 hours   *Maximum Marks : 70*

*Note : Attempt **any five** questions. All questions carry **equal** marks.*

1. (a) Explain the energy conservation in context   7
         of lighting schemes in detail.

    (b) Explain the effect of powerfactor   7
         improvement in energy conservation.

2. Describe the cogeneration and trigeneration   14
    schemes with suitable examples.

3. (a) What do you mean by energy auditing ?   7
         Explain different instruments for auditing
         in detail.

    (b) Explain various ECO assessment and   7
         evaluation methods.

4. (a) A ceiling fan (73.5W) rating operates for   7
         12hrs/day and 365 days. If the cost of
         electricity is Rs.2.5/kWh, calculate the
         energy saving. If the cost of electronic fan
         regulator is Rs.200, what would be the
         payback period ?

    (b) Elaborate the features of voltage reducers   7
         and energy efficient fan regulators.

5. (a) A 3HP motor was found to be working with 56% load. What could be the right size of energy efficient motor, energy saved and payback period, if the motor is working 10 hours/day and 300 days/year ? The cost of electricity is Rs.5/kWh. **7**

   (b) Explain feeder loss evaluation in detail. **7**

6. (a) How the electric load analysis for refrigerators is carried out ? **7**

   (b) Give a detailed energy analysis for compressors. How the energy can be conserved in this case ? **7**

7. (a) Define specific energy consumption. Carry out techno economic analysis of replacing incandescent bulb (60) for 7,500 burning hours by CFL. **7**

   (b) Write a note on high efficiency Motor. **7**

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