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BIEE-026

B.TECH. ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

June, 2013

BIEE-026 : ENERGY AUDITING AND ANALYSIS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any five** questions. Each question carry **equal** marks.*

1. (a) Discuss the importance of input-output curve in energy audit. 7

   (b) Explain variable speed drives in detail. What are the energy conservation schemes for them ? 7

2. (a) Describe electrolytic process with its applications and limitations for the conservation of energy. 7

   (b) Explain energy audit for air conditioners in detail. 7

3. (a) Explain different cogeneration cycles in detail. 7

   (b) How trigeneration can be done in paper industries ? Explain with the help of a flow chart. 7

4. Define the following : **2x7=14**

(a) Specific energy consumption
(b) Loading of motors
(c) Reactive Power
(d) Energy audit
(e) Load matching
(f) Load profiling
(g) Efficacy and illuminance

5. (a) Explain energy efficient control and starting of electric motors. 7

(b) A 10 HP motor was found to be working with 50% load. What could be the right size of energy efficient motor, energy saved and payback period if the motor is working 20 hrs/day and 300 days/year ? The cost of electricity is Rs 5/kWh. 7

6. (a) How will you reduce the consumption of energy in compressors and furnaces ? 7

(b) Explain different schemes for energy conservation in lighting. 7

7. Write short notes on ***any four*** of the following : **3.5x4=14**

(a) Power factor improvement
(b) Feeder loss evaluation
(c) Electric heating
(d) Voltage Reducers
(e) Loading of Transformers
(f) Technoeconomic analysis