

**B.Tech. – VIEP – ELECTRICAL ENGINEERING  
(BTELVI)**

**Term-End Examination**

**01305**

**December, 2014**

**BIEE-026 : ENERGY AUDITING AND ANALYSIS**

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. (a) Describe electrolytic process with its applications and limitations for the conservation of energy.  
(b) Explain energy audit for air-conditioners in detail. 5+5
  
2. (a) How will you reduce the consumption of energy in compressors and furnaces ?  
(b) Explain the different schemes for energy conservation in lighting. 5+5
  
3. (a) Explain the stepwise procedure for assessing the energy efficiency of existing multistoried building lighting system.  
(b) State the need of energy conservation in India with reference to our present scenario. 5+5

4. (a) What is 'co-generation' ? State its necessity. With the help of a block diagram state the classification of co-generation systems based on sequence of energy generation.
- (b) Discuss in brief the roles and responsibilities of Energy Auditor. 5+5
5. (a) State the comparison between conventional transformer and energy efficient transformer with reference to construction, material used, losses and cost.
- (b) What is TOD tariff and Power Factor tariff ? How do they help in energy conservation ? 5+5
6. (a) "Minimizing idle and redundant running of motor saves energy." Justify this statement.
- (b) List out the instruments required to carry out the energy audit procedure in a chemical factory. 5+5
7. (a) State and explain the definition of Energy Audit as defined in the Energy Conservation Act 2001.
- (b) What is meant by fuel substitution ? Explain with the help of a suitable example. 5+5
8. (a) How do the Industry, Nation and World benefit from energy efficiency programmes ?
- (b) Explain at least two automatic power factor control methods. 5+5

9. (a) Why do variable torque loads offer greatest energy savings ? Explain electronic methods of speed controllers.

(b) Explain energy efficient control and starting of electric motors. 5+5

10. Write short notes on any **four** of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Feeder Loss evaluation
  - (b) Energy Accounting
  - (c) Summer Air-conditioner
  - (d) Geo-thermal Energy
  - (e) Active Power
  - (f) Loading of Motors
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