

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

**Term-End Examination**

00776

**June, 2016**

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

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt any five questions. All questions carry equal marks. Use of scientific calculator is permitted. Missing data, if any, may be assumed suitably.*

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1. (a) What do you mean by energy auditing ?  
Explain the different instruments for auditing in detail.
- (b) Elaborate the features of voltage reducers and energy efficient fan regulators. 7+7
2. (a) Describe the electrolytic process with its applications and limitations for the conservation of energy.
- (b) Explain the energy audit for air-conditioners in detail. 7+7

3. (a) Explain Cogeneration and Trigenation schemes. Discuss its advantages also.
- (b) The maximum demand of a power station is 96000 kW and daily load curve is described as follows :

<i>Time (hours)</i>	<i>Load (MW)</i>
0 – 6	48
6 – 8	60
8 – 12	72
12 – 14	60
14 – 18	84
18 – 22	96
22 – 24	48

Determine the load factor of power station. 7+7

4. (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. 7+7
5. (a) State the features of energy efficient transformer with reference to construction, material used, losses and cost.

(b) A 60 MW power station has an annual peak load of 50 MW. The power station supplies loads having maximum demands of 20 MW, 17 MW, 10 MW, and 9 MW. The annual load factor is 0.45. Find :

(i) Average load

(ii) Energy supplied per year

(iii) Diversity factor

(iv) Demand factor

7+7

6. (a) What is TOD tariff and Power Factor tariff ? How do they help in energy conservation ?

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

7+7

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

$$4 \times 3 \frac{1}{2} = 14$$

(a) Feeder loss evaluation

(b) Energy accounting

(c) Active power

(d) Loading of motors

(e) Power factor improvement

(f) Techno-economic feasibilities analysis