

**DIPLOMA IN ELECTRICAL ENGINEERING
DELVI**

Term-End Examination

June, 2012

BIEE-038 : ENERGY AUDIT

01435

Time : 3 hours

Maximum Marks : 70

Note : Attempt any ten questions. All questions carry equal marks. Use of calculator is permitted.

1. Which important issues involving energy policy are reflected in the national energy scenario ? 7
2. What is the need for managerial skills in energy management ? Discuss with suitable examples. 7
3. What do you mean by energy audit ? Discuss. 7
4. List any one energy audit instrument used for power measurement and one for flue gas measurement along with parameters to be measured ? 7
5. In a heat exchanger, steam is used to heat 40 kg/hour of furnace oil from 30° C to 90°C. The specific heat of furnace oil is 0.22 kcal/kg °C. The latent heat of steam is 540 kcal/kg. How much steam per hour is needed ? 7

6. Explain how matching energy usage to requirement can enhance energy efficiency. 7
7. Discuss in brief the 'energy crisis' as a socio-economical aspect. 7
8. Where do you think natural gas fits into a balanced energy policy ? 7
9. What is the dominant source of energy for transportation ? What is the dominant use for coal ? 7
10. A chemical company is considering investing in a project that costs Rs. 4,00,000. The estimated salvage value is zero. The tax rate is also zero. The company uses straight line depreciation and the proposed project cash flows as follows : 7

Year	Cash flows (Rs)
1	1,00,000
2	1,00,000
3	1,50,000
4	1,50,000
5	2,50,000

Determine the Payback period.

11. The energy audit data for a steel company for a typical month is 7

Coal consumption = 74430 kg

Electricity consumption = 34020 kWh.

Steel production = 593.723 tonnes.

Calorific value of coal = 5800 kcal/kg.

Determine the specific energy consumption.

12. Define sustainable development, and give two examples of how it can be practiced in day to day life ? 7
