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BIEE-038

DIPLOMA IN ELECTRICAL ENGINEERING
DELVI

01260

Term-End Examination

December, 2013

BIEE-038 : ENERGY AUDIT

Time : 3 hours *Maximum Marks : 70*

Note : *Answer **any five** questions. All carrying **equal** marks. Assume suitably any missing data if any. Use of scientific calculator is **permitted**.*

1. (a) Discuss energy crisis as a socio - economical aspect. **7+7**

   (b) Explain energy conservation measures in iron and steel industry.

2. (a) With the help of figure explain the working of thermal power plant. **7+7**

   (b) What are the advantages of combined cycles in power generation?

3. (a) A room measures $3.7 \times 3.7 \times 4.3$ m. The air in it is to be renewed every 30 minutes at a temperature of 10°C above that of the incoming air. Find the necessary rating of an electric heater ignoring losses from the walls. Take air density = 1.22×10^3 g/m^3, specific heat = 1.0 J/g°C. **7+7**

(b) What are the importance of insulation for HVAC systems to save energy ?

4. (a) What are the advantages of using electricity for heating ? Explain any one method. 7+7

(b) Describe the advantages of evaporative coolers as compared to air conditioner.

5. (a) Explain the limitations with " simple pay back period" technique with an example. 7+7

(b) What is the objective of carrying out sensivity analysis ?

6. (a) What are the types of energy audits? Write the methodology with respect to process industries. 7+7

(b) What is the need based energy management ? Mention its advantages.

7. (a) Give a typical energy audit reporting format. 7+7

(b) What are the base line data that an audit team should collect while conducting detailed energy audit ?

8. (a) Explain various solar energy collecting systems. 7+7

(b) What is clean development mechanism (CDM) ? Explain with example.