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BIEE-037

DIPLOMA IN ELECTRICAL ENGINEERING

01961

Term-End Examination

December, 2012

BIEE-037 : POWER PLANT ECONOMICS AND CENTERING

Time : 2 hours *Maximum Marks : 70*

NOTE : *Attempt **any** 5 questions in all. Each question carry **equal** marks. Question - **1** is **compulsory**.*

1. Choose the correct alternative out of the given. **2x7=14**

   (a) Which of the following plants will have the highest capital cost ?

   (i) Nuclear Power Plant

   (ii) Diesel Power Plant

   (iii) Thermal Power Plant

   (iv) None of these

   (b) The maximum demand of a consumer is 2kw and his daily energy consumption is 20 units. Its load factor is :

   (i) 10.15% (ii) 41.6%

   (iii) 50% (iv) 60%

(c) The tariff generally used for tubewell loads is :

(i) flat demand rate

(ii) straight meter rate

(iii) block meter rate

(iv) none of these

(d) The tariff most suitable for large industrial consumers is :

(i) flat demand rate

(ii) block meter rate

(iii) two part tariff

(iv) none of these

(e) Diversity factor has direct effect on the :

(i) fixed cost of the units generated

(ii) variable cost of the units generated

(iii) both fixed and variable cost of the units generated

(iv) none of the these

(f) A diesel power plant is generally used as :

(i) base load station

(ii) peak load station

(iii) both (i) and (ii)

(iv) none of these

(g) Which of the following industries is expected to have maximum consumption of electrical energy during processing ?

(i) Automobile (ii) Aluminium

(iii) Paper (iv) Textile

2. What are the causes of low power factor? Give different methods of improving the power factor. **14**

3. (a) How does a load-duration curve differ from chronological load curve? **7**

   (b) What is diversity factor and how does it influence the cost of generation? **7**

4. Differentiate between fixed and operating cost of power plants. List the items which contribute to the fixed and operating costs. **14**

5. Explain with examples : **14**
   (i) flat rate tariff
   (ii) block rate tariff
   (iii) two part tariff
   (iv) power factor tariff

6. Briefly discuss the factors effecting the economics of generation of power and how to reduce the cost of power generation ? **14**

7. Discuss the economic loading of combined steam and hydroplants. **14**

8. Write notes on ***any two*** of the following : **2x7=14**
   (a) Gas analysis
   (b) Reactive power optimization
   (c) Spinning reserve