

DIPLOMA IN ELECTRICAL ENGINEERING

Term-End Examination

December, 2013

BIEE-037 : POWER PLANT ECONOMICS
AND CENTERING

Time : 2 hours

Maximum Marks : 70

NOTE : (i) Question 1 is compulsory.

(ii) Attempt any four questions from q.no. 2 to q.no. 8.

1. Choose the correct alternative out of the given :

7x2=14

- (a) Total present installed capacity in India is more than :
- (i) 20,000 MW
 - (ii) 40,000 MW
 - (iii) 65,000 MW
 - (iv) 1,00,000 MW
- (b) Storage requirement can be determined from :
- (i) Hydrograph
 - (ii) Flow - duration curve
 - (iii) Mass curve
 - (iv) Either by hydrograph or by mass curve
- (c) A condenser in a steam power plant condenses steam coming out of :
- (i) Turbine
 - (ii) Boiler
 - (iii) Economizer
 - (iv) Superheater

- (d) The analysis giving fixed carbon , volatile combustible matter , ash and moisture is called the :
- (i) Ultimate analysis
 - (ii) Proximate analysis
 - (iii) Gross analysis
 - (iv) Orast analysis
- (e) Which material is used in controlling chain reaction in a nuclear reactor?
- (i) Thorium
 - (ii) Heavy water
 - (iii) Boron
 - (iv) Beryllium
- (f) Doherty rate tariff is applied to :
- (i) Domestic consumers
 - (ii) Industrial consumers
 - (iii) Bulk supplies
 - (iv) Municipal loads
- (g) Power factor can be improved by using :
- (i) Static capacitors
 - (ii) Synchronous condensers
 - (iii) Phase advancers
 - (iv) all of the above
2. (a) What is energy load curve ? 7
- (b) How a good load factor and good diversity factor help to keep over all cost of generation low? 7
3. Discuss and explain the various components of 14
- (a) Fixed cost and
 - (b) Operating cost and make a comparative assesment of these in thermal, hydro and nuclear power plants.

4. What are the different systems of tariffs used by the electricity authority? Discuss any two of them and indicate types of consumers where such tariffs are used. 14
5. Define incremental rate for a thermal plant and describe the various methods of determining it from the input/ output characteristics of the plant. 14
6. Discuss the advantages and limitations of inter connected power system. 14
7. Discuss automatic load dispatching in modern power system. 14
8. Write notes on **any two** of the following : 2x7=14
- (a) Gas analysis
 - (b) Coal analysis
 - (c) Steam temperature control
 - (d) Supervisory control and monitoring system.
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