

1085

Code : 9EE-42

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IV Semester Diploma Examination, Nov./Dec. 2014

ELECTRICAL POWER GENERATION**Time : 3 Hours]****[Max. Marks : 100**

Note : (i) Questions No. 1 is *compulsory*.
 (ii) Answer any 2 full questions from each of the Sections – II, III & IV.

SECTION – I

1. (a) Fill in the blanks : 5

- (i) Surge tank is provided for the protection of _____.
- (ii) Economiser is used to heat _____ in steam power plant.
- (iii) Solar panel is a packaged interconnected assembly of _____.
- (iv) In nuclear reactor _____ is used to protect against radioactive reaction.
- (v) The ratio of average demand to maximum demand on the power system is called _____.

(b) Explain the meaning & importance of Renewable energy sources. 5

SECTION – II

2. (a) Draw the general layout of medium head power plant & list the components of the plant. 6

(b) Give the classification of Hydroelectric plant based on plant capacity. 4

(c) List the factors to be considered in selection of site for Hydro power plant. 5

3. (a) Classify the prime movers used in thermal power plant. 2

(b) Briefly explain the following with steam power plant : 8

- (i) Water tube boiler
- (ii) Super heater

(c) List the merits & demerits of steam power plant. 5

4. (a) With a neat diagram, explain the working of pelton wheel. 6

(b) Draw the schematic diagram of Nuclear power plant & label the parts. 7

(c) List any two merits of Nuclear power plants. 2

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SECTION – III

5. (a) List the applications of diesel power plant. 4
 (b) What are the advantages of gas turbine power plant over steam power plant ? 6
 (c) List the types of fuel cells. 5

6. (a) Explain stand-alone type photovoltaic system with a neat block diagram. 7
 (b) List the application of photovoltaic power plant. 2
 (c) What are the advantages and disadvantages of solar power plant ? 6

7. (a) List the components of wind turbine generator & mention their functions. 10
 (b) Classify the types of Tidal power plant. 2
 (c) Which are the important factors to be considered for site selection of Tidal power plants ? 3

SECTION – IV

8. (a) Define the following terms related to power plant : 6
 (i) Connected load
 (ii) Diversity factor
 (iii) Plant capacity factor

(b) A generating station has a connected load of 43 MW & a maximum demand of 20 MW. The units generated being 61.5×10^6 per annum. Calculate (i) demand factor & (ii) load factor. 6

(c) Explain the importance of high load factor. 3

9. (a) State the objectives of Tariff. 4
 (b) Explain briefly the daily routine maintenance of power plants. 7
 (c) Draw the block diagram of static excitation system. 4

10. (a) Explain the effects of low power factor on power plant. 5
 (b) Explain fixed dome type Biogas power plant with diagram. 6
 (c) Explain the importance of Biomass energy. 4