

**1085****Code : 9EE-42**Register  
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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

**[Turn over**

## 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  $61.5 \times 10^6$  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