



C09-EE-403

**3475**

**BOARD DIPLOMA EXAMINATION, (C-09)**

MARCH / APRIL - 2019

**DEEE - IV SEMESTER EXAMINATION**

**POWER SYSTEMS - I**

Time : 3 Hours]

[Total Marks : 80

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**PART - A**

**3×10=30**

- Instructions :*
- (1) Answer *ALL* questions.
  - (2) Each question carries *THREE* marks.
  - (3) Answer should be brief and straight to the point.

- 1 State the advantages of Wind power plant.
- 2 List the various types of Dust collectors in Thermal power plants.
- 3 State the disadvantages of Hydro-Electric power station.
- 4 State the advantages of Gas power Stations.
- 5 Define Maximum demand.
- 6 State the merits of Integrated power stations.
- 7 State the functions of reactors.
- 8 Classify the relays on the basis of Working time.
- 9 State the different types of faults which occur in alternators.
- 10 State the various schemes of protection systems used in transformers.

**PART - B****10×5=50**

**Instructions :**

- (1) Answer any **FIVE** questions.
- (2) Each question carries **TEN** marks.
- (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11 List the types of cooling towers and explain the working of any one type of cooling tower in thermal power plant with neat diagram.
- 12 (a) Write the factors to be considered for selection of site for a Hydro power plant. **6**  
(b) Derive Water power equation. **4**
- 13 Explain the working of a Nuclear power plant with a neat diagram.
- 14 Explain the various types of tariffs.
- 15 Explain the working of an Isolator and pan Air break switch with neat sketches.
- 16 Explain the construction and working principle of an Impedance relay with neat sketch.
- 17 Explain the differential protection scheme of transformers.
- 18 (a) Compare Nuclear power plant and Thermal power plant in various aspects. **5**  
(b) A power station has a maximum demand of 150 MW with an annual load factors of 50%. Calculate the electrical energy generated per annum. **5**