



*

C16-EE-402

6441

**BOARD DIPLOMA EXAMINATION, (C-16)
OCT/NOV—2018
DEEE—FOURTH SEMESTER EXAMINATION**

**POWER SYSTEMS-I
(GENERATION AND PROTECTION)**

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Classify the sources of electrical energy.
2. State any six limitations of conventional sources of electrical energy.
3. State the need of cooling tower in a thermal power plant.
4. List any three requirements to set up a hydroelectric power plant.
5. List any six risks involved in nuclear energy.
6. State the working principle of solar cell.
7. List any six merits of integrated operation of electric power plants.

/6441

1

[*Contd...*

8. State any three ^{*} factors responsible for arc formation in a circuit breaker.
9. List any six probable faults that occur in an alternator.
10. List any six types of relay.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) The answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the factors affecting the selection of site for a thermal power plant.
12. Explain the working of high head hydroelectric power plant with a line diagram.
13. Explain the working of a nuclear reactor with a diagram.
14. Explain the constructional details of a wind mill power plant.
15. A consumer takes a steady load of 200 kW at a p.f. of 0.8 lag for 10 hours per day and for 300 days per annum. Estimate the annual payment under each of the following tariff.
 - (a) Rs. 100 per annum per KVA plus 10 paise/kWh
 - (b) Rs. 100 per annum per kW plus 2 paise/VARh plus 10 paise/kWh.
16. Explain the working of a SF6 circuit breaker.
17. Explain the differential protection scheme of a transformer.
18. (a) Compare two-part tariff with power factor tariff in any five aspects.
(b) Explain the scheme of surge protection with a diagram.
