



C09-EE-403

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**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2017
DEEE—FOURTH SEMESTER EXAMINATION
POWER SYSTEMS—I**

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. State any three limitations of non-conventional energy sources.
2. State the advantages of pulverization of coal in thermal power plants.
3. State the advantages of hydroelectric power plant.
4. State the merits of nuclear power plant.
5. Define load factor.
6. Define tariff.
7. State the disadvantages of SF₆ circuit breaker.
8. State the basic requirements of protective relaying.
9. State any three precautions to be considered for applying differential protection to transformer.
10. State the need of overvoltage protection in alternators.

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PART—B

10×5=50

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

11. State the need of cooling towers used in thermal power plants and explain any one type of cooling tower.

12. Explain the working of medium head hydroelectric power station with a neat sketch.

13. Explain the working of nuclear power station with a neat diagram.

14. Classify various types of tariff and explain each.

15. Explain the working of minimum oil circuit breaker with a neat sketch.

16. Explain the construction and working principle of differential relay.

17. Explain the differential protection scheme of transformer.

18. (a) Compare nuclear power plant and thermal power plant in five aspects. 5

(b) The maximum demand of hydrostation is 200 MW. The annual load factor is 60%. Calculate the total electrical energy generated per year. 5
