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C16–EE–402

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—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 energy sources with examples.

2. List out any six benefits of energy conservation.

3. State any three advantages and three disadvantages of thermal power plant. 1½+1½

4. What is the function of surge tank in hydroelectric power plants?

5. Define nuclear fission and list various nuclear fuels used in nuclear power stations. 1½+1½

6. Write any three factors to be considered for selection of site for wind mill.

7. What is meant by integrated operation? List any three merits of integrated power station. 1½+1½

8. List any six properties of SF_6 gas.

9. State the different types of faults in an alternator.

10. Classify the relays based on time of operation.

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. Draw a neat sketch of a thermal power plant and explain the function of each part.

12. *(a)* Write any two advantages and two disadvantages of hydro-electric power plants. 2

(b) Explain the working of high head hydroelectric power plant with a neat sketch. 8

13. *(a)* List the various types of reactors used in nuclear power plant. 2

(b) Draw a neat sketch of nuclear reactor and briefly explain the function of each component. 8

14. Explain the working of roof top solar power generation with block diagram.

15. *(a)* What are the objectives of tariff? 3

(b) Classify the various types of tariffs and explain any two tariffs. 7

16. Explain the principle and working of A·B·C·B with a neat sketch.

17. *(a)* State the different types of faults in a transformer. 2

(b) Explain the working of Buchholz relaying system for protection of transformer. 8

18. *(a)* Discuss the effect of load factor and diversity on the cost of electrical energy generated. 5

(b) Explain the working of the valve-type lightning arrestor with a neat sketch. 5

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