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BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2018

DEEE—FOURTH SEMESTER EXAMINATION

POWER SYSTEMS (GENERATION)—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. List the different sources of energy. 3

2. State the advantages of coal pulverization. 3

3. State the causes of pollution in thermal power plant. 3

4. State the location of hydroelectric power plants in South India. 3

5. Describe the following terms : 1½×2=3

(a) Penstock

(b) Surge tank

6. Define the terms 'nuclear fission' and 'nuclear fusion'. 1½×2=3

7. List the different fuels used in nuclear power plant. 3

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8. State the importance of renewable energy sources. 3

9. State the need for energy management. 3

10. What are the causes of low power factor? 3

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. Explain different types of cooling towers with neat sketches. 10

12. What are the factors which will effect for selection of site for hydroelectric power station? 10

13. *(a)* Derive the water power equation of hydroelectric power station. 5

(b) A hydroelectric station is supplied from a reservoir of capacity 3 10^7 m^3 at a heat of 150 meters. Determine the total energy available in kWh if the overall efficiency of the plant is 70%. 5

14. Explain the working of nuclear power station with a neat block diagram. 10

15. *(a)* Explain the principle of solar cell with diagram. 5

(b) Explain the function of flat plate collector with neat sketch. 5

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16. *(a)* Explain the working principle of the wind mill. 5

(b) Explain the factors affecting the selection of site for establishing wind mill. 5

17. Classify various types of tariff. Explain any four tariffs. 10

18. The following load demands of a residential consumer are as follows :

Sl. No.	*Time*	*Load* (in watt)
1.	12 midnight to 6 a.m.	60
2.	6 a.m. to 6 p.m.	No load
3.	6 p.m. to 7 p.m.	180
4.	7 p.m. to 9 p.m.	300
5.	9 p.m. to 12 midnight	120

Plot the load curve and determine the—

(a) maximum demand;

(b) average load;

(c) load factor;

(d) diversity factor. 10

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