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C14-EE–403

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BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2018
DEEE—FOURTH SEMESTER EXAMINATION

POWER SYSTEMS-I (GENERATION)

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. Define energy conservation & state the need of energy conservation.

2. State the function of super heater with diagram.

3. State the function of economiser.

4. State the function of surge tank with diagram.

5. State the function of forebay.

6. State the properties of thorium.

7. Explain need of coolent and control rods.

8. State V-I characteristics of solar cell.

9. Define Load factor & Diversity factor.

10. A power station has maximum demand of 150 MW with an annual load- factor of 50%. Calculate the electrical energy generated per annum.

PART—B

10×5=50

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

11. *(a)* Explain construction & working of solar power plant with diagram.

(b) Explain working of natural draught towers with diagram.

12. *(a)* Define condensation & list advantages of condesation.

(b) Explain methods of energy auditing.

13. *(a)* Classify hydro-electric power stations based on various factors.

(b) Explain working of high-head power plant with diagram.

14. *(a)* List merits & demerits of nuclear power station.

(b) State types of reactors used in nuclear power station.

15. Explain construction and working principle of wind-mill with diagram.

16. Explain types concentrating collectors with diagrams.

17. Define tariff & classify various types of tariffs and explain each.

18. The following is the load demand of a residential consumer:

Sl. No.	TIME	Load in Watts
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 (i) Maximum demand, (ii) Average load, (iii) Load factor and (iv) Diversity factor.

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