C14-EE-403

4463

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2018

DEEE—FOURTH SEMESTER EXAMINATION

POWER SYSTEMS - I (GENERATION)

Time : 3 Hours] [*Total Marks* : 80

PART—A 3×10=30

Instruction : (1) Answer **all** questions and each question carries **three** marks.

(2) Answers should be brief and straight to the point and shall not exceed **five** simple sentences.

1. Differentiate between Conventional energy sources & Nonconventional energy sources.

2. List the advantages & disadvantages of Thermal Power Plant.

3. List the factors for selection of site in Thermal Power Station.

4. Define Hydrograph with diagram.

5. Define Flow duration curve.

6. Define Nuclear Fission & Nuclear Fusion.

7. List the merits of Nuclear Energy.

8. List the advantages & disadvantages of Flat plate solar collector.

9. State the merits of Integrated operation.

10. Define Load curve & Load duration curve.

PART—B 10×5=50

Instruction **:** (1) Answer any **five** questions and each question carries **ten** marks.

(2) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain working of Bio-mass power plant with diagram. 5

(b) Explain function of Super Heater & Economiser. 5

12. Explain construction & working of Thermal Power Plant with diagram.

13. *(a)* Derive water power equation. 5

(b) List advantages & disadvantages of Hydro-power plant. 5

14. Explain construction & working of Nuclear Power Plant with diagram.

15. Explain construction & working of Flate plate solar collector with diagram.

16. Explain construction & working of Solar air heater with diagram and list its applications.

17. A Single - Phase 400V, 50 Hz motor connected across a supply draws a current of 40 A at a power factor of 0.6 lagging . The motor power factor is improved to 0.85 by connecting a condenser in parallel. Calculate the capacity of the condenser required.

18. (a) Write short notes on Energy management & causes of Low power-factor. 4

(b) As industrial consumer has a maximum demand of 10 kW with a load factor 50%. If the tariff is Rs. 150 per kVA of maximum demand and 8 paise per unit consumed, find the overall cost per unit at (*i*) UPF and (*ii*) 0.7 P-F. 6

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