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BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL - 2019
DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING
POWER SYSTEMS - I
FOURTH SEMESTER EXAMINATION

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

PART - A (10 x 3 = 30 Marks)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. State the disadvantages of Wind Power Plant.
2. What is meant by Energy Auditing?
3. State the advantages of Hydro-Electric Power Stations.
4. State the demerits of Nuclear Power Station.
5. What is meant by Integrated Power Station?
6. State the factors affecting the cost of Generation.
7. State the use of current limiting reactor.
8. State the Uses of Impedance relays.
9. List the different types of faults in Transformers.
10. State the need of Over Voltage protection in Alternators.

PART - B (5 x 10 = 50 Marks)

Note 1: Answer any five questions and each question carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. (a) State the Functions of (i) Boiler (ii) Condenser. 5 marks
 (b) State the functions of (i) Turbine (ii) Alternator. 5 marks
12. (a) State the main controls of the following. (i) Head Works (ii) Turbines (iii) Alternator 6 marks
 * (b) Calculate the power developed by the Hydro-Electric power station having following data :
 Catchment area = 80 Sq. Km. Average rain fall = 110 cm/year. Run – off = 80%
 Available head = 250 metres. Overall efficiency of power station = 75%. 4 marks
13. Explain the Working of Nuclear Power Plant with a neat Diagram.

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14. The load on a power plant on particular day is as follows

Sl No	Time	Load in MW
1	12 MidNight to 5 AM	20
2	5 AM to 8 AM	60
3	8 AM to 6 PM	100
4	6 PM to 8 PM	120
5	8 PM to 10 PM	80
6	10 Pm to 12 Mid Night	20

Plot the Load curve and determine (i) Maximum Demand (ii) Average Load
(iii) Load Factor (iv) Diversity Factor.

15. Compare Isolator and Air Break Switch.

16. Explain the construction and Working principle of Differential relay with neat sketch.

17. Explain about field suppression protection systems in Alternators.

18A. Compare Nuclear and Gas Power Plants in various aspects.

5 marks

B. State the advantages the Two - Part tariff.

5 marks

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