



C23-EE-403

23437

BOARD DIPLOMA EXAMINATION, (C-23)

MARCH/APRIL—2025

DEEE – FOURTH SEMESTER EXAMINATION

POWER SYSTEMS—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. Classify the different sources of energy available in nature into conventional and non-conventional energy sources.
2. State any three merits of Conventional Energy sources.
3. List the types of cooling towers in Thermal Power Plants.
4. Classify the Hydro Electric plants based upon head.
5. List any three merits of integrated operation of power stations.
6. List any three causes of low power factor.
7. List the types of faults in power system.
8. State the Importance of Current Limiting Reactors.
9. Classify Relays based on duty.
10. State the different types of Faults in Transformer.

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 is the content but not the length of the answer.

11. Explain the working of solar power plant with a neat sketch.
12. Explain the working of nuclear power station with a block diagram.
13. Explain the need and working of (i) Surge tank and (ii) Forebay.
14. Explain the principle of working of gas power station with schematic diagram.
15. The following is the load demand of a residential consumer :

S.No.	Time	Load in Watts
1.	12 midnight to 6 a.m	60
2.	6 a.m to 7 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.

16. Explain the various types of consumer tariffs.
17. Explain the phenomenon of arc, arc voltage, arc current and its effects.
18. Explain differential protection for alternator stator.

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