



C23-EE-403

23437

**BOARD DIPLOMA EXAMINATION, (C-23)
OCTOBER/NOVEMBER—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. List any three conventional and non-conventional energy sources.
2. State the need of non-conventional methods of power generation.
3. State the advantages of pulverization of coal in thermal power station.
4. State the risks involved in using nuclear energy.
5. Define load curve.
6. State the merits of integrated operation of power plants.
7. Define switchgear in power systems.
8. State the main properties of SF₆ gas that make it suitable for use in circuit breakers.
9. Classify the relays based on the principle of operation.
10. State the applications of distance relays.

PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and criterion 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 plant with a block diagram.
13. Explain the need and working of (a) surge tank, (b) forebay and (c) spill gates in hydroelectric power station.
14. Explain the working of gas power plant with a schematic diagram.
15. Explain the effects of load factor and diversity factor on the cost of power generation.
16. Explain various types of consumer tariffs.
17. Explain the working of Minimum Oil Circuit Breaker (MOCB) with a neat sketch.
18. Explain the differential protection for alternator stator with a neat sketch.

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