



C20-EE-503

7647

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER / NOVEMBER—2024

DEEE – FIFTH SEMESTER EXAMINATION

POWER SYSTEMS—III (SWITCH GEAR AND PROTECTION)

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 circuit breakers based on the medium of arc quenching.
2. Write the types faults in power system network.
3. Classify the relays based on time of operation.
4. List any six probable faults in an alternator.
5. List any six possible faults in a transformer.
6. Mention the causes of excessive heat in an alternator.
7. State the necessity of bus bar protection.
8. Explain pilot wire protection in brief.
9. State the advantages of distributed generation.
10. State the application of FACTS.

PART—B

8×5=40

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain the construction and working principle of MOCB with a neat sketch.

(OR)

- (b) Draw the schemes of reactor connections.

- 12.** (a) Explain the construction and operation principle of induction type over current relay.

(OR)

- (b) Explain the working of impedance relay.

- 13.** (a) Explain the earth fault protection of rotor in an alternator.

(OR)

- (b) Explain the differential protection of transformer with a neat sketch.

- 14.** (a) Explain the single and duplicate bus bar protection schemes.

(OR)

- (b) Explain the protection of parallel feeders using distance relays.

- 15.** (a) Explain the protection of radial feeder using time graded over current relay.

(OR)

- (b) Explain the protection of ring main system.

PART—C

10×1=10

- Instructions :**
- (1) Answer the following question.
 - (2) The question carries **ten** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain the working of axial blast A.B.C.B with a neat sketch.

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