



C14-EE-603

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**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2018**  
**DEEE—SIXTH SEMESTER EXAMINATION**  
**POWER SYSTEMS—III**

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. Define switch gear and give its classification.
2. State the purpose of (a) air break switches and (b) isolators.
3. Define (a) fusing current and (b) fusing factor.
4. State the basic requirements of protective relays.
5. State the merits and demerits of thermal relay.
6. State the possible faults in a transformer.
7. Write the need for protection of transmission lines.
8. State the effects of pilot wire relaying scheme.
9. List the six types of lightning arrestors.
10. Write the advantages of neutral grounding.

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**PART—B**

10×5=50

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

- 11.** Explain the construction and working principle of SF<sub>6</sub> circuit-breaker with a neat sketch.
- 12.** A generating station has two alternators of ratings 4000 kVA and 6000 kVA and of percentage reactances 10% and 8% respectively connected from the common bus bars. The load is taken to the feeder through a 12000 kVA transformer of 5% reactance. What should be the short-circuit kVA and approximate rating of circuit breaker if the fault occurs on the feeder?
- 13.** Explain the construction and working principle of induction type over current relay.
- 14.** Explain the working of Buchholz relaying system for protection of transformer.
- 15.** Explain the differential protection for alternator stator.
- 16.** Explain the protection of parallel feeders using directional relays.
- 17.** (a) Explain the operation of impedance relay. 5  
(b) Explain the combined protection by using definite and time distance relays. 5
- 18.** Explain the construction and working of thyrite-type lightning arrester.

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