



C14-EE-603

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BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2018
DEEE—SIXTH 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 circuit breakers based on the medium of arc quenching.
2. Distinguish among AB switch, isolator and circuit breaker.
3. Write the necessity of current limiting reactors.
4. Write the basic requirements of protective relays.
5. Write short notes on (a) pickup value, and (b) current setting.
6. List different types of fault in an alternator.
7. Write the causes of busbar faults.
8. Explain the protection of ring main feeder.
9. List the types of lightning arrester.
10. Explain briefly Peterson coil.

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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.** (a) Define (i) arc voltage, (ii) restriking voltage, and (iii) recovery voltage. 5
(b) Write the advantages of SF6 circuit breaker. 5
- 12.** A generating station has two generators of ratings 4000 kVA and 5000 kVA and of % reactances 10% and 12% respectively connected to common busbars. The load taken to the feeder through a 15000 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 of induction-type over-current relay with sketch.
- 14.** (a) Write the operation of impedance relay and its applications. 5
(b) Explain the protection of parallel feeders using directional relays. 5
- 15.** Explain differential protection of transformer with sketch.
- * **16.** (a) Explain the earth fault protection for rotor of an alternator. 5
(b) Explain field suppression protection in an alternator. 5
- 17.** Explain with circuit diagram the differential protection of bus bars.
- 18.** Explain the construction and working of valve-type lightning arresters with diagram.
