



C14-EE-603

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BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2017

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. Define switch gear. Give two examples.
2. State any three methods of arc quenching.
3. Define (a) fusing current and (b) fusing factor.
4. State any six requirements of relays.
5. List the uses of distance relay.
6. List the probable faults in alternator stator and rotor.
7. Draw the diagram for protection of single-busbar system.
8. Draw the basic diagram for pilot wire protection.

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9. Define surge\*. State any two types of surge diverters.
10. List any six merits of neutral grounding.

**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 working of minimum oil circuit-breaker with a neat diagram.

12. Derive the equation for short circuit KVA of reactors.

13. Explain the working of thermal relay with a neat diagram.

14. Explain the differential protection for alternator stator with a neat diagram.

15. Explain the working of Buchholz relay for protection of transformer with a neat diagram.

16. Explain the protection of transmission lines using distance and impedance relays with neat diagram.

17. Explain the scheme of surge protection with a neat diagram.

18. Briefly explain the following : 5+5=10

(a) Solenoid plunger-type relay

(b) Protection of radial feeders using time graded fuses

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