



C14-EE-603

**4743**  
**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—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. Define switch gear and give examples for it.
2. State the factors responsible for arc formation.
3. Define the following :
  - (a) Rated current
  - (b) Fusing current
4. List the different relays based on principle of operation.
5. Write the advantages of attracted type armature relay.
6. List the different types of faults in an alternator.

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7. Write the <sup>\*</sup>necessity of bus bar protection.
8. Explain protection of ring main feeder.
9. List the types of lightening arrestors.
10. List the types of surges.

**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) Compare minimum oil circuit breaker (MOCB) with bulk oil circuit breaker (BOCB). 5  
 (b) List the properties of SF-6 gas. 5
12. (a) What is the function of a reactor? Give its types. 5  
 (b) List the methods of short circuit kVA calculations. 5
13. Explain the construction and working of induction type over current relay with sketch. 10
14. (a) Explain the distance relay and mention its uses. 5  
 (b) Explain the protection of parallel feeders using directional and non-directional relays. 5
15. List different types of faults in a transformer and explain working of Buchholz relay with sketch. 10
16. Explain differential protection for an alternator stator with sketch. 10

17. (a) Explain the protection of radial feeder by time graded over current protective relays. 5
- (b) List the causes of bus bar faults. 5
18. Explain the construction and working of Thyristor type lightning arrester with sketch. 10

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