

7647

BOARD DIPLOMA EXAMINATION, (C-20)

DECEMBER—2022

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. What is an isolator and state its application?
2. Classify the different types of circuit breakers.
3. Draw a neat diagram which shows relay coil and circuit breaker connection.
4. Mention any six protective schemes employed for generator.
- * 5. What are the different types of faults in transformers?
6. What are the protective systems for transformers?
7. Write the requirements of bus bar protection.
8. What is the main drawback of differential protection of bus bar?
9. What are the advantages of micro-grid?
10. What is the need of FACTS?

PART—B

8×5=40

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- 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 of MOCB with a neat diagram.

(OR)

(b) Briefly explain the different types of reactors based on location of reactors.

12. (a) Explain the construction and working of induction type over current relay (non-directional).

(OR)

(b) Explain the working of definite-distance relay with a neat diagram.

13. (a) Explain the construction and working of a Buchholz relay with a neat diagram.

(OR)

(b) What are the problems arising in differential protection and precautions(remedies) to be taken for applying differential protection to transformers?

14. (a) Explain the protection of ring main feeder using directional relays.

(OR)

(b) What is the necessity of bus bar protection? Explain frame leakage protection of bus bar.

15. (a) Explain the translay scheme of protecting transmission line with a neat diagram.

(OR)

(b) Explain circulating-current differential protection to transmission lines. What are the problems in it?

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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 percentage differential protection of a stator of an alternator with a neat diagram.

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