Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 80578

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

Sixth Semester

Electrical and Electronics Engineering

EE 8602 — PROTECTION AND SWITCHGEAR

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What are the types of fault?

2.   Define the protective zone.

3.   Derive the torque equation.

4.   What are the applications of electromagnetic relay?

5.   Write differentiation between current transformer and potential transformer.

6.   State that bus bar protection.

7.   State the advantages of static relay.

8.   Draw the block diagram of numerical relay.

9.   Define the re-striking voltage.

10. What is mean by SF_6 and write its significance.

PART B — (5 × 13 = 65 marks)

11. (a)   Describes the below question

          (i)   Explain detailed about the protection schemes.   (7)

          (ii)   What are the methods of grounding? Explain any one method.   (6)

Or

     (b)   Briefly explain about the zones of protection and essential qualification.

12. (a) (i) Explain about the operating principles of relay. (7)

   (ii) Explain about universal Relay. (6)

Or

   (b) Briefly explain about negative sequence and under frequency relay.

13. (a) Explain about the protection of transformer. Write the applications.

Or

   (b) Explain about the protection of generator. What are the advantages and disadvantages?

14. (a) Explain about numerical relay draw the block diagram and application.

Or

   (b) Briefly explain about distance protection of transmission lines.

15. (a) What are the types of circuit breakers? Explain any five circuit breakers.

Or

   (b) Explain :

   (i) Rate of rise of recovery voltage. (7)

   (ii) Resistance switching. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Explain about apparatus protection. Write the analysis and application evaluation of the protection.

Or

   (b) Discuss about the physics of arcing phenomenon and arc interruption with its applications.

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