Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 52965

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Seventh Semester

Electrical and Electronics Engineering

EE 6702 – PROTECTION AND SWITCHGEAR

(Regulation 2013)

(Common to PTEE 6702 – Protection and Switch Gear for B.E. (Part-Time)
Sixth Semester – Electrical and Electronics Engineering – Regulations–2014)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the consequences of short circuit.

2. Define protected zone.

3. Draw the R-X diagram for the reactance and mho relay.

4. What is an under frequency relay?

5. What are the errors in CT?

6. Why busbar protection is needed?

7. What is static relay?

8. List the merits of Numerical relays.

9. What do you mean by current chopping?

10. What are the advantages of oil as arc quenching medium?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Describe the different faults occurring in power system. Which of these are more frequent?

        (ii) Formulate an expression for the reactance of the Peterson coil in terms of capacitance of the protected line.

Or

    (b) (i) Explain the overlapping of protective-zones with neat sketch.

        (ii) Describe the essential qualities of a protective relay.

12. (a) Describe the construction and principle of operation of an induction type directional over current relay.

Or

(b) With neat diagram, describe the construction and principle of operation of Negative sequence relay.

13. (a) Describe the various methods of transformer protection.

Or

(b) Discuss the different methods employed for the protection of Transmission Lines.

14. (a) Draw the schematic block diagram of a Static over current relay and explain the operation.

Or

(b) Explain the operation of distance protection of transmission lines using static comparators with neat diagram.

15. (a) (i) Explain the Various arc interruption methods.

(ii) Describe the operating principle of DC circuit breaker.

Or

(b) With neat diagram, explain the construction and principle of operation of Air blast circuit breaker.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss the different types of Lightning arresters with neat diagram. (15)

Or

(b) (i) With a neat sketch, explain the differential system of protection applied to star delta connected transformer. (8)

(ii) What are the problems arising in differential protection in power transformer and how are they overcome? (7)

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