Reg. No. : | | | | | | | | | | |

Question Paper Code: 35305

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fifth Semester

Electrical and Electronics Engineering

01UEE505 - PROTECTION AND SWITCHGEAR

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Show the need for protective schemes in power system.
2. Identify the different types of faults occurring in power system?
3. Define under frequency relay.
4. State R-X diagram.
5. What are the limitations of Buchholz relay?
6. Why the secondary of a Current Transformer should not be open circuited?
7. Define static relay.
8. Mention the advantages of static over current relay.
9. What are the basic requirements of a circuit breaker?
10. Write the types of circuit breakers.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) With neat sketch explain primary and back-up protection. What are the various methods of providing back-up protection? (8)

(ii) Explain the disadvantages and applications of solid grounding system. (8)

Or

(b) Discuss and compare the various methods of neutral earthing. (16)

12. (a) Briefly explain the differential relay, negative sequence relay with neat diagram. (16)

Or

(b) Explain the general working of a relay and derive the fundamental torque equation. (16)

13. (a) Explain with a neat diagram the application of Merz price circulating current principle for the protection of the alternator. (16)

Or

(b) Elucidate the principle of pilot-wire relaying schemes for protection of transmission lines. List out its merits and demerits. (16)

14. (b) Describe the various functional circuits in a static relay with a help of block diagrams. Explain the function of various blocks. (16)

Or

(b) With neat sketches, explain the different types of protective schemes for transmission lines. (16)

15. (a) With neat sketch, explain the SF6 circuit breakers. (16)

Or

(b) Demonstrate in detail the current chopping and derive re-striking voltage. (16)
