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Question Paper Code: 55305

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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)
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