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Question Paper Code	13901
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Electrical and Electronics Engineering

20EEEL710 - POWER SYSTEM PROTECTION AND SWITCHGEAR

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Defect means a) location b) fault c) detect d) detach	1	K1	CO1
2. % value of fault for transformer is _____. a) 4 b) 5 c) 6 d) 10	1	K1	CO1
3. The force which tends to open the relay contacts called as _____. a) driving force b) link force c) operating force d) restraining force	1	K1	CO2
4. Among all relays _____ relay is more sensitive. a) distance b) Reactance c) MHO d) differential	1	K1	CO2
5. Top oil temperature in transformer indicates _____. a) losses b) dangerous c) relay operation d) selectivity	1	K1	CO3
6. Transmission line protection uses _____ protection. a) distance b) differential c) directional d) over-current	1	K1	CO3
7. The relay which does not have moving parts called as _____. a) dynamic relay b) static relay c) distance d) differential	1	K1	CO4
8. In numerical protection, to get greater resolution, the ADC output should be _____. a) narrow b) wider c) broader d) straight line	1	K1	CO4
9. Next block to S/H circuit in numerical protection is a) Multiplexer b) Demultiplexer c) Encoder d) Decoder	1	K1	CO5
10. In which circuit breaker high resistance arc interruption is employed? a) Air Blast b) Air Break c) Oil breaker d) Vacuum breaker	1	K1	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11. List the types of faults.	2	K1	CO1
12. Mention the difference between primary and backup protection.	2	K1	CO1
13. What are the salient features of attracted armature type relays?	2	K1	CO2
14. Why shading ring is provided in an induction disc relay?	2	K1	CO2
15. List out the mechanical abnormal conditions in an alternator.	2	K1	CO3
16. Mention the problems encountered in bus zone differential protection.	2	K1	CO3
17. List the advantages of numerical relay over Electromagnetic relay.	2	K1	CO4
18. Write the trip law of cosine type phase comparator.	2	K1	CO4
19. Define restriking voltage and recovery voltage.	2	K1	CO5
20. Define symmetrical breaking capacity.	2	K1	CO5
21. List out the general characteristics of numerical protection.	2	K1	CO4
22. How arc is quenched in vacuum circuit breaker?	2	K1	CO5

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23. a) Explain in detail about Power system earthing with its types. 11 K2 CO1
- OR**
- b) i) Describe in detail about Zones of protection. 6 K2 CO1
ii) Describe in detail about protection schemes in power system. 5 K2 CO1
24. a) Explain in detail about differential relays with its types. 11 K2 CO2
- OR**
- b) Explain the construction and operation of impedance relay with neat diagram. 11 K2 CO2
25. a) Discuss about the different types of protection schemes employed for transmission line. 11 K2 CO3
- OR**
- b) Explain about the buchhloz relay of transformer protection. 11 K2 CO3
26. a) Explain in detail about synthesis of reactance relay using phase comparator (Cosine-type). 11 K2 CO4
- OR**
- b) Explain in detail about Numerical distant protection of transmission line using differential equation method. 11 K2 CO4
27. a) Describe in detail about current chopping and interruption of capacitive current. 11 K2 CO5
- OR**
- b) Explain the construction and working of Vacuum circuit breaker with neat sketch. 11 K2 CO5
28. a) Explain in detail about synthesis of Mho relay using phase comparator. 11 K2 CO4
- OR**
- b) Explain in detail with a block diagram about numerical transformer differential protection. 11 K2 CO4