Question Paper Code: R18A31EE04

R18

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech I Semester Regular/Supplementary Examinations, Dec–2023/Jan-2024

SWITCHGEAR AND PROTECTION

(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 Hours **Max. Marks: 75**

Section – A (Short Answer type questions) (25 Marks)

Answer All Questions	Course Outcome	B.T Level	Marks
1. Define the Arc Phenomena in a circuit breaker.	CO1	L2	2M
2. Explain the necessity of Resistance Switching?	CO1	L1	3M
3. What are the advantages of static Relays?	CO2	L1	2M
4. What is an impedance relay?	CO2	L2	3M
5. Why do you protect the generator against faults?	CO3	L1	2M
6. Describe circulating current principle of transformer protection?	CO3	L2	3M
7. What are the requirements of protection of lines?	CO4	L1	2M
8. What is the need for busbar protection?	CO4	L2	3M
9. What are the types of Surge Arresters?	CO5	L1	2M
10. How do earthing screen and grounded wires provides against direct lightning strokes?	CO5	L2	3M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	Distinguish in between Air Blast and Oil Circuit Breakers?	CO1	L3	10M
	OR			
B)	Describe the Construction, Principle of operation and applications of SF6 circuit breaker and explain current chopping in SF6 breakers?	CO1	L3	10M
12. A)	Describe the phase comparators and amplitude comparators?	CO2	L3	10M
	OR			
B)	Explain the construction and working principle of Electromagnetic relays?	CO2	L2	10M
13. A)	Explain the operation of circulating current protection scheme for earth fault Protection of alternator with a neat circuit diagram?	CO3	L2	10M
	OR			
B)	Explain with neat diagram the differential protection of Transformers?	CO3	L2	10M
14. A)	Explain with a neat sketch about the differential relay protection for three phase feeders?	CO4	L2	10M
	OR			
B)	Explain three zone protection of Transmission lines using Impedance relays.	CO4	L3	10M
15. A)	Explain the various methods of reducing the switching over voltages.	CO5	L2	10M
	OR			
B)	Explain about ungrounded and grounded neutral system with advantage and disadvantages?	CO5	L2	10M