

**ANURAG Engineering College**  
(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, June/July - 2024

**SWITCHGEAR 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. What are the types of miniature breaker?	CO1	L1	2M
2. Define Arc voltage and restriking voltage?	CO1	L2	3M
3. How do you classify electromagnetic relays as per their construction.	CO2	L1	2M
4. What is protective relay? Explain its function?	CO2	L2	3M
5. Describe short notes on Earth fault protection of alternator?	CO3	L1	2M
6. What is the basic principle of the differential scheme of protection.	CO3	L2	3M
7. Explain the main function of bus bar protection.	CO4	L1	2M
8. What is the carrier system of protection?	CO4	L2	3M
9. What is surge absorber write short notes on it?	CO5	L1	2M
10. What are the protective measures are taken against lightning over voltage?	CO5	L2	3M

**Section B (Essay Questions)**

**Answer all questions, each question carries equal marks.**

**(5 X 10M = 50M)**

11. A) Explain various methods of arc extinction in a circuit breaker?	CO1	L2	10M
<b>OR</b>			
B) Describe the operation of Vacuum Circuit Breaker with neat diagram and list out its merits and de-merits.	CO1	L3	10M
12. A) What is Impedance Relay? Explain its operating principle?	CO2	L2	10M
<b>OR</b>			
B) The primary winding of a transformer has 2000 turns and CT ratio is 600:5. The secondary has 10000 turns and is working on a tap of 60%. Find out CT ratio required for secondary side to establish circulating current scheme.	CO2	L2	10M
13. A) Write about construction and working principle of bucholtz relay?	CO3	L3	10M
<b>OR</b>			
B) Explain briefly about stator fault protection in generators?	CO3	L2	10M
14. A) Explain about various schemes of bus bar protection?	CO4	L2	10M
<b>OR</b>			
B) Explain three zone protection of Transmission lines using Impedance relays.	CO4	L2	10M
15. A) Describe the different types of over voltages and mention their cause of initiation.	CO5	L3	10M
<b>OR</b>			
B) Explain the term insulation coordination. Describe the construction of Volt-Time curve and terminology associated with impulse testing.	CO5	L2	10M