Question Paper Code: EE602PC

R22

Model Question Paper
ANURAG Engineering College
(An Autonomous Institution)
III B.Tech. II Semester Regular Examinations, June -2025
POWER SYSTEM PROTECTION
(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 Hours **Max.Marks:60**

Section – A (Short Answer type questions)				**(10 Marks)**
Answer All Questions		**Course Outcome**	**B.T Level**	**Marks**
1.	What is the primary purpose of power system protection?	CO1	L1	1M
2.	Define "zones of protection" in a power system.	CO1	L1	1M
3.	What is the function of a directional relay?	CO2	L1	1M
4.	What is the effect of arc resistance on distance relay performance?	CO2	L1	1M
5.	What is the basic principle of wire pilot protection?	CO3	L1	1M
6.	What is the purpose of bus-zone protection?	CO3	L1	1M
7.	What is the fundamental principle of a static amplitude comparator?	CO4	L1	1M
8.	State one advantage of microprocessor-based relays.	CO4	L1	1M
9.	What is the purpose of "re-striking voltage" in a circuit breaker?	CO5	L1	1M
10.	What is the primary function of an HRC fuse?	CO5	L1	1M
Section B (Essay Questions)				
Answer all questions, each question carries equal marks.				**(5 X10M = 50M)**
11.	Describe the essential qualities of a good protective relay. Explain the concepts of primary and backup protection with suitable examples.	CO1	L3	10M
	OR			
12.	Discuss the importance of power system protection, the different types of faults that can occur in a power system, and the effects these faults have on the system.	CO1	L2	10M
13.	Explain the time-current characteristics of over-current relays and discuss various over-current protective schemes	CO2	L3	10M
	OR			
14.	Analyze the effects of arc resistance, power swings, and line length on the performance of distance relays.	CO2	L3	10M
15.	Explain the principles of wire pilot protection schemes, highlighting their advantages and limitations.	CO3	L3	10M
	OR			
16.	Explain the principles of transformer protection, including differential protection and overheating protection.	CO3	L2	10M
17.	Explain the operation of static instantaneous and definite time overcurrent relays in power system protection.	CO4	L2	10M
	OR			
18.	Discuss the advantages of microprocessor-based relays and explain the implementation of microprocessor-based over-current relays.	CO4	L3	10M

19.	Describe the construction, operation, and applications of SF6 circuit breakers.	CO5	L2	10M
	OR			
20.	Explain the characteristics and types of fuses, including the application of HRC.	CO5	L2	10M