R20 Regulation *Subject code: 3P6BB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Regular/Supplementary Examinations, July 2024

POWER SYSTEM PROTECTION

(EEE)

Maximum Marks: 70 Date:22.07.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20 Marks)		CO	Bloom Tx
1	What is auto reclosing?	CO2	BTL1
2	What is potential transformer?	CO2	BTL1
3	Abbreviate and define RRRV?	CO2	BTL1
4	What is the use of differential relay?	CO3	BTL1
5	What is the need of bus bar Protection?	CO3	BTL1
6	Why do you protect the generator against faults.	CO3	BTL1
7	What is a static relay?	CO1	BTL1
8	List out the merits and demerits of static relays	CO1	BTL1
9	What is the function of trip circuit?	CO4	BTL1
10	What is current chopping?	CO4	BTL1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	A. Explain differential protection schemes with neat sketch. [5M]	CO2	BTL2
	B. Explain the significance of current and potential transformers. [5M]	CO2	BTL2
	OR		
12	A. Briefly explain the essential qualities of protective relays. [5M]	CO2	BTL2,
	B. Classify the protective relays and schemes. [5M]	CO2	BTL3
13	A. Explain the IDMT relay and Time-current characteristics . [5M]	CO2	BTL2
	B. Discuss in detail the effect of power swings in distance relaying. [5M]	CO2	BTL2
	OR		
14	A. Derive operation characteristics of an impedance relay. [5M]	CO3	BTL4

	B. Derive the operating conditions of various types of distance relays. [5M]	CO3	BTL4
15	A. Discuss in detail about the piolet wiring protection system. [5M]	CO3	BTL2
	B. Explain how the carrier current protection scheme is used for Feeder protection. [5M]	CO3	BTL2
	OR		
16	A. Explain in detail the protection scheme for ground fault protection in the electrical generator. [5M]	CO3	BTL2
	B. Explain in detail the protection scheme of the transformers. [5M]	CO3	BTL2
17	A. Explain the operation of Microprocessor based distance relay with a neat block diagram. [5M]	CO1	BTL2
	B. Write the advantages and limitations of static relays. [5M]	CO1	BTL1
	OR		
18	A. With a neat block diagram, explain the static distance relay protection scheme. [5M]	CO1	BTL1
	B. What are advantages and disadvantages of static relays? [5M]	CO1	BTL1
19	A. Explain Arc quenching methods in detail. [5M]	CO4	BTL2
	B. What are the types of fuses used? and explain the application of HRC fuses. [5M]	CO4	BTL1
	OR		
20	Explain the operation of SF6 circuit breaker with neat sketch. [10M]	CO4	BTL2