R20 Regulation *Subject code: 3P6BB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, April 2026

POWER SYSTEM PROTECTION

(EEE)

Maximum Marks: 70 Date: 16.04.2026 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.
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)		Marks	CO	BTL
1	How a circuit breaker is different from switch?	2M	1	L1
2	What is fault clearance time?	2M	1	L1
3	If the pickup value of a relay is 8A, the fault current is 30A. Find its PSM?	2M	2	L1
4	What is differential relay and its advantages	2M	2	L1
5	Write the list of faults that may occur on the stator side of an alternator?	2M	3	L1
6	Which type of relays are used in Merz-price protection system for alternator	2M	3	L1
7	What is Bus zone protection?	2M	4	L1
8	Write differences between the phasor and Synchro phasor.	2M	4	L1
9	What is under voltage protection?	2M	5	L1
10	What is df/dt protection?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Explain briefly the following types of air-blast circuit breakers (*i*) Axial-blast type (*ii*) Cross-blast type b) Explain Resistance Switching	5M 5M	1	L2
	OR			
12	What is a vacuum circuit breaker? Explain its working principle.	10M	1	L2
13	Brief explanation of static differential and static distance relay.	10M	2	L2
	OR			
14	a) Explain the merits and demerits of static relays. b) What are the types of over current relays?	5M 5M	2	L2
15	a) Explain briefly about stator fault protection in generator. b) How do you protect transformer against incipient faults?	5M 5M	3	L2
	OR			
16	a) Explain 3-zone distance protection of a transmission line. b) Describe the Merz-Price circulating current system for the protection of transformers.	5M 5M	3	L2

17	Explain in details static relays and distance relays.	10M	4	L2
	OR			
18	Explain about over current relays.	10M	4	L2
19	What are the applications of oil circuit breaker.	10M	5	L2
	OR			
20	Explain applications of HRC fuses.	10M	5	L2