



R18 Regulation
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)
B.Tech VII Semester Supplementary Examinations, July 2022

Subject code: 2P7BB

POWER SYSTEM PROTECTION
(EEE)

Maximum Marks: 70

Date:05.07.2022 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)

- 1 Define circuit breaker.
- 2 What is meant by backup protection?
- 3 Define PSM?
- 4 What is meant by relay time?
- 5 What are the common types of generator faults?
- 6 What is Relay co-ordination?
- 7 What is sampling?
- 8 Mention the advantages of the digital protection in power system.
- 9 List the Applications of synchro phasor technologies in power systems
- 10 What is smart grid?

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 Describe the construction, principle of operation, advantages, and application of SF₆ Circuit breaker. 10M

OR

- 12 a. Explain the arc interruption taking place in vacuum. 5M
b. What is the role of instrument transformers in power system protection? Explain 5M
- 13 a. Explain the construction and working of induction type over current relay? 5M
b. Explain how to a non -directional overcurrent relay is converted into directional overcurrent relay. 5M

OR

- 14 Explain differential protection for parallel feeder of transmission lines. 10M
- 15 Explain the differential protection for Alternator stator with a neat sketch?10M

OR

- 16 Describe the operation of Buchholz relay with neat sketch. 10M

17 Explain the working of Microprocessor based digital programmable static relay with a neat block diagram. 10M

OR

18 a. Discuss about the Basic components of a digital protection systems. 5M

b. List out the aliasing issues in the digital protection systems. 5M

19 Explain fundamentals of phasor measurement unit and their applications in power systems. 10M

OR

20 a. Describe role of wide area measurement systems in power system protection. 7M

b. what is the effect of power swings on distance relaying. 3M
