



R20 Regulation

Subject code:3P5BB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, December 2024**ELECTRICAL MEASUREMENTS & INSTRUMENTATION
(EEE)****Maximum Marks: 70**

Date:28.12.2024

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	Why is damping required for an electromechanical measuring instrument?	1	L1
2	Why is scale of MI instrument calibrated non- linearly?	1	L1
3	What are the steps to be taken for minimizing errors in PT?	2	L1
4	Define the standardization of potentiometer	2	L1
5	What is mean by Phantom Load?	3	L1
6	Explain over voltage compensation	3	L1
7	What are the applications of electro dynamo meter.	4	L1
8	What are the applications of wien s bridge	4	L1
9	What are the applications of LVDT	5	L1
10	Explain the photo diodes	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)

		CO	Bloom Tx
11	Evaluate the torque equation of a moving iron instrument? [10M]	1	L2
	OR		
12	Design and explain the working of moving-coil instrument. [10M]	1	L2
13	Compare between a C.T. and P.T. Discuss the theory of a C.T with phasor diagrams. Derive expression for actual transformation ratio, ratio error and phasor angle error of a C.T. [10M]	2	L2
	OR		
14	A) Explain principle and operation of D.C Cromptons potentiometer [5M] B) Explain the how we standardization of D.C Cromptons [5M]	2	L2
15	Explain the principle and operation of three phase energy meter [10M]	3	L2
	OR		
16	Explain the measurement of active and reactive powers in balanced and unbalanced system [10M]	3	L2
17	Compare Maxwell bridge with Hay's bridge [10M]	4	L2

	OR		
18	Evaluate the equation of balance of a Schering Bridge. Draw the phasor diagram under null conditions and explain how loss angle of capacitor can be calculated. [10M]	4	L2
19	Explain Strain gauge and its principle of operation. [10M]	5	L2
	OR		
20	Explain photovoltaic and photo conductive cells. [10M]	5	L2