



R20 Regulation

Subject code:3P5BB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, May 2025

**ELECTRICAL MEASUREMENTS & INSTRUMENTATION
(EEE)**

Maximum Marks: 70

Date: 19.06.2025

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	Why is damping required for an electromechanical measuring instrument?	2M	1	L1
2	Define loading effect.	2M	1	L1
3	What are the steps to be taken for minimizing errors in PT?	2M	2	L1
4	Why the secondary of a CT is never left open circuited?	2M	2	L1
5	What is mean by Phantom Load?	2M	3	L1
6	Write about driving and braking torques.	2M	3	L1
7	Write the loss of charge method.	2M	4	L1
8	List the advantages of maxwell bridge.	2M	4	L1
9	What is transducer?	2M	5	L1
10	List the applications of photo diodes.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain the types of Damping's using in measuring instruments.	10M	1	L2
	OR			
12	Design and explain the working of moving-coil instrument.	10M	1	L2
13	Evaluate the errors of CT and PT, and discuss its preventives.	10M	2	L2
	OR			
14	With the help of a neat circuit diagram explain Crompton's potentiometer and it's working. How a true zero is obtained in a Crompton's pot?	10M	2	L2
15	Explain the briefly Drysdale Tinsley polar type A.C potentiometer. explain measurement of self-reactance of coil.	10M	3	L2
	OR			
16	What are the various types of errors in induction type energy meter and explain the methods incorporated for their compensation.	10M	3	L2
17	Describe Carey Foster's bridge with neat diagram.	10M	4	L2
	OR			
18	Explain the working and principle of Owen's bridge with neat diagram.	10M	4	L2

19	An LVDT with a secondary voltage of 5V has a range of ± 25 mm. i) Find the output voltage when the core is -18.75 mm from centre, ii) Plot the output voltage versus core position for a core movement going from $+18.75$ mm to -10 mm.	5M 5M	5	L2
OR				
20	Explain photovoltaic and photo conductive cells	10M	5	L2