R18 Regulation *Subject code:2P6BB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, November 2025

ELECTRICAL MEASUREMENTS & INSTRUMENTATION

(EEE)

Maximum Marks: 70 Date: 21.11.2025 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 scales of the gravity control instruments are not uniform but are crowded?	2M	1	L1
2	Why eddy current damping cannot be used for moving iron instrument?	2M	1	L1
3	Why the secondary of a CT is never left open circuited?	2M	2	L1
4	What is the ratios of instrument transformers	2M	2	L1
5	What are the advantages of induction type energy meter	2M	3	L1
6	Explain overload compensation of induction type energy meter	2M	3	L1
7	Describe loss of charge method.	2M	4	L1
8	Explain measurement of loss angle.	2M	4	L1
9	What is transducer?	2M	5	L1
10	What do you mean by active and passive transducer? Give suitable examples.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
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	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 potentiometer?	10M	2	L2
15	Explain extension of range of wattmeter using instrument transformer	10M	3	L2
	OR			
16	What are the various types of errors in induction type energy meter? Explain the methods incorporated for their compensation.	10M	3	L2

17	Compare Maxwell bridge with Hay's bridge.	10M	4	L2
	OR			
18	Discuss the theory and method of measurement of low resistance using Kelvin's double Bridge. How the effect of thermo – electric emf is taken into account during measurement?	10M	4	L2
19	Define the transducers and classification of transducers. Explain briefly.	10M	5	L2
	OR			
20	Define the sensitivity of a strain gauge. Draw the circuit for measurement of strain and derive the expression of output voltage in terms of strain.	10M	5	L2