R22 Regulation *Subject code:4E5BB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, April 2026

ELECTRICAL MEASUREMENTS AND INSTRUMENTATION

(EEE)

Maximum Marks: 60 Date:17.04.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 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 (10X1M=10 Marks)		Marks	CO	BTL
1.a)	List any two advantages of PMMC.	1M	1	1
b)	Explain the need of controlling torque in Meters.	1M	1	2
c)	Rephrase any two applications of D.C Crompton's Potentiometer.	1M	2	1
d)	Outline the formula for Ratio error.	1M	2	1
e)	List any two advantages of Tri-Vector Meter.	1M	3	1
f)	Define phantom loading.	1M	3	2
g)	Define bridge sensitivity.	1M	4	2
h)	Name bridges used for measurement of capacitance.	1M	4	2
i)	What are the advantages of electrical transducers?	1M	5	1
j)	Define thermistor and its applications.	1M	5	2

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Rephrase the extension of range using shunt resistance. b) Conclude the errors and compensation techniques of PMMC Instruments.	5M 5M	1	2 4
	OR			
3	a) Interpret the Construction and working of Attracted disc type Electrostatic Voltmeter. b) Interpret the Construction and working of PMMC Instruments.	5M 5M	1	2 2
4	Explain the construction and working of Crompton's DC potentiometer and its applications.	10M	2	2
	OR			
5	a) Solve an expression for Phase Angle Error. b) Discuss in detail the applications and testing of instrument transformers.	5M 5M	2	3 2
6	Discuss the principle, construction, and operation of a single-phase induction type energy meter.	10M	3	2

	OR			
7	Explain the measurement of power and energy in three-phase balanced and unbalanced systems.	10M	3	2
8	Explain the working of Schering bridge and its applications.	10M	4	3
	OR			
9	List out and explain various methods for measuring high resistance.	10M	4	3
10	a) Summarize the working of Piezo electric transducers. b) Label the working of photo conductive cells.	5M 5M	5	2 3
	OR			
11	Explain methods of measurement of non-electrical quantities such as force, torque, and pressure using electrical transducers.	10M	5	3