



R18 Regulation

Subject code:2P6BB

**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**

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

**B.Tech VI Semester Supplementary Examinations, May 2025**

**ELECTRICAL MEASUREMENTS & INSTRUMENTATION**

**(EEE)**

Maximum Marks: 70

Date: 18.06.2025

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	For moving iron type instruments, give the expression for the deflecting torque.	2M	1	L1
2	Write errors in measuring instruments?	2M	1	L1
3	Write the basic principle of operation of a d.c. potentiometer?	2M	2	L1
4	Write the principle of C.T?	2M	2	L1
5	What is the major cause of creeping error in an energy meter?	2M	3	L1
6	Explain the single phase dynamometer wattmeter.	2M	3	L1
7	Write short notes on Owen's bridge.	2M	4	L1
8	Write the advantages of maxwell bridge?	2M	4	L1
9	What are the applications of LVDT?	2M	5	L1
10	Write the applications of photo diodes?	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	Explain the principle and operation of electrostatic voltmeter.	10M	1	L2
13	Explain the principle and operation of basic slide wire D.C potentiometer and what is standardization of D.C potentiometer.	10M	2	L2
	OR			
14	a) Explain the briefly Drysdale Tinsley polar type A.C potentiometer. b) Explain measurement of self-reactance of coil.	10M 5M	2	L2
15	Explain extension range of wattmeter using instrument transformer.	10M	3	L2
	OR			
16	A dynamometer- type watt meter has a field system which may be considered long compared with its moving coils. The flux density is 0.012T. The mean diameter of the moving coil is 5cm and the moving coil turns are 600. The current through the coil is 0.06A and the power factor of	10M	3	L2

	the circuit of which the power is measured, is 0.866. Estimate the torque when the axis of the field and moving coil is 600.			
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 the piezo electric transducers.	10M	5	L2
	OR			
20	Explain photovoltaic and photo conductive cells.	10M	5	L2