

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous Institute U/s UGC Act 1956)

B.Voc. SEMESTER-III, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 1SRE303

DATE: 20-12-2025

**SUBJECT NAME: ELECTRICAL MEASUREMENT &
INSTRUMENTATION**

TIME: 11:00 AM to 01:00 PM

TOTAL MARKS: 50

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Attempt all questions in the question paper.
3. The figures to the right of each question indicate full marks. Make suitable assumptions with proper justification wherever required.
4. Simple, non-programmable scientific calculators are permitted.
5. BL - Cognitive Level (As per Revised Bloom's Taxonomy) (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

		Marks	BL	CO
Q.1	(a) Explain the following Characteristics (i) Linearity (ii) Resolution (iii) Sensitivity (iv) Threshold (v) Repeatability.	05	U	1
	(b) What are the various types of Errors encountered in Electrical Measurements? Explain any two in detail.	05	R	1

Q.2	(a) What is Transducer? Explain the types of Transducer.	05	U	2
	(b) Explain different Dynamic Characteristics of Transducer.	05	A	2

OR

Q.2	(a) Explain the construction and working of LVDT used for measurement of displacement.	05	U	2
	(b) Explain the Thermocouple.	05	A	2

Q.3	(a) Explain Construction and Working of PMMC type instrument.	05	U	3
	(b) Compare CT & PT.	05	A	3

OR

Q.3	(a) Explain induction type Single Phase Energy Meter.	05	U	3
	(b) Explain measurement of current and voltage by Ammeter and Voltmeter.	05	A	3

- Q.4** (a) Explain Wheatstone Bridge method for measurement of Resistance. **05 U 4**
(b) Explain measurement of Inductance with the help of Hay's Bridge. **05 U 4**

OR

- Q.4** (a) Explain Maxwell's Inductance Capacitance Bridge. **05 U 4**
(b) Which methods are used for the measurement of low resistance? Explain any one. **05 U 4**

- Q.5** (a) Explain Digital Volt Meter (DVM). **05 U 5**
(b) Explain Clamp on Meter. **05 U 5**

OR

- Q.5** (a) Explain Construction and Working of Digital Energy Meter. **05 U 5**
(b) Explain Digital Multi Meter (DMM). **05 U 5**
