

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

B.VOC SEMESTER- I, SEMESTER END EXAMINATION – SUMMER 2025

Subject Code: 1SRE103**Date: 06-06-2025****Subject Name: FUNDAMENTAL OF ELECTRICAL ENGINEERING-1****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 - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A-Application, N-Analyze, E-Evaluate, C-Create), CO - Course Outcomes.

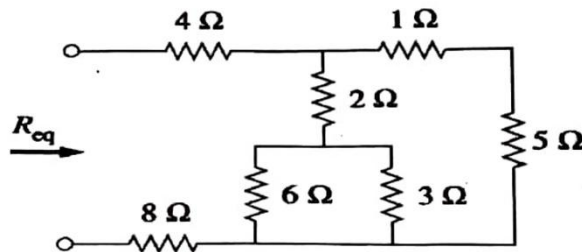
		Marks	BL	CO
Q.1	Multiple-Choice Questions	[05]		
	(a) KCL is based on conservation of?	1	U	2
	(i) Energy (ii) Charge (iii) Mass (iv) Voltage			
	(b) EMF stands for?	1	R	1
	(i) Electrical Magnetic Force (ii) Electromagnetic Field (iii) Electromotive Force (iv) Electric Motor Function			
	(c) Superposition theorem applies to?	1	U	2
	(i) Nonlinear circuits (ii) Linear circuits (iii) AC circuits (iv) None of these			
	(d) Capacitors in parallel have the same?	1	U	3
	(i) Voltage (ii) Current (iii) Energy (iv) Charge			
	(e) What opposes the cause of induced EMF?	1	R	4
	(i) Lenz's Law (ii) Ohm's Law			

Q.2 Attempt Any Three**[15]****(a)** Explain Ohms Law and its Limitations.

5 R 1

(b) Find Req of given circuit.

5 E 1

**(c)** Explain Kirchhoff's current law and Kirchhoff's voltage law.

5 R 2

(d) Explain concepts of open loop & close loop system.

5 U 2

Q.3 Attempt Any Three**[15]**

(a) Two capacitors having capacitance of 6 microfarad and 10 microfarad are connected in parallel. A 16 microfarad capacitor is connected in series. With this combination and complete circuit is connected across 400 volts. Calculate: (i) Total capacitance of ckt. (iii) Total charge in the ckt. (ii) Voltage across each capacitor (iv) The charge on each capacitor.

5 E 3

(b) Explain series and parallel combination of capacitor with its equation.

5 U 3

(c) Write and explain Super Position Theorem.

5 R 2

(d) With circuit diagram explain star to delta transformation.

5 R 2

Q.4 Attempt Any Three**[15]****(a)** Define Electrostatics and Explain different types of capacitors.

5 R 3

(b) Explain charging and discharging of capacitor in brief.

5 U 3

(c) Define the following terms related to magnetic circuit.

5 R 4

- 1) M.M.F, 2) Magnetic force, 3) Magnetic field intensity,
- 4) Permeability, 5) Reluctance

(d) Compare Magnetic circuit and Electric circuit

5 U 4
