

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

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

SUBJECT CODE: 1IC101

DATE: 17-12-2025

SUBJECT NAME: CONCEPT IN CHEMISTRY

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) List out the different branches of chemistry and its applications.	05	R	1
	(b) Explain the application of chemistry in everyday life?	05	A	1
Q.2	(a) What is Bohr's atomic model?	05	R	2
	(b) Explain experiment of Rutherford atomic model and its observations.	05	U	2
OR				
Q.2	(a) What is Aufbau principle?	05	R	2
	(b) Explain Quantum number with its types.	05	U	2
Q.3	(a) Explain hybridization.	05	U	3
	(b) Define s-block elements and list their general characteristics.	05	R	3
OR				
Q.3	(a) Outline the differences between intermolecular hydrogen bond and intramolecular hydrogen bond.	05	U	3
	(b) What is hydrogen bond? What are the types of hydrogen bond?	05	R	3
Q.4	(a) Demonstrate, with the help of a diagram, how chlorination makes water safe for drinking.	05	U	4

(b) Explain the uses of soft water and hard water based on their composition, properties. **05 A 4**

OR

Q.4 (a) Explain how the zeolite process softens hard water. **05 U 4**

(b) What are the applications of water technology in industry? **05 A 4**

Q.5 (a) Outline the types of coal and their composition. **05 U 5**

(b) Explain the application of biodiesel as an eco-friendly fuel in transportation. **05 A 5**

OR

Q.5 (a) Explain the environmental and economic benefits of CNG in vehicles instead of petrol or diesel. **05 U 5**

(b) Discuss the use of hydrogen fuel. **05 A 5**
