

First Semester Internal Examination, September 2026
Minor Course in Chemistry
BASIC INORGANIC AND NUCLEAR CHEMISTRY
CHE1MN105

Time: 1 Hr

Max Marks: 35

Name:	Marks Scored	Section A		Total Marks
Class:		Section B		
		Section C		

Section A

(Each question carries 3 marks, Max marks for section – 7)

1. Define the term orbital. Write the sublevels having following quantum numbers: i) $n=2$; $l=1$, ii) $n=4$; $l=3$, iii) $n=3$, $l=2$?
2. Illustrate coordinate bond with an example?
3. Define mole fraction and mass fraction.

Section B

(Each question carries 6 marks, Max marks for section – 18)

4. A) Calculate the wavelength of spectral line in Lyman series if electron in H atom has been excited to 3rd energy level?
 B) State Heisenberg's uncertainty principle and give its significance?
5. A) Define Pauli's exclusion principle and Aufbau principle?
 B) Account for the structures of H_2O and PCl_5 using VSEPR theory?
6. How many grams of Na_2CO_3 (molar mass = 106 g/mol) are required to prepare 500 ml of 0.1 M solution?
7. Calculate the volume of 0.3 N NaOH required to neutralise 20 ml of 0.1 N H_2SO_4 .

Section C

(Answer any one question, Each question carries 10 marks)

8. A) Give Schrodinger equation, explain its terms and significance. B) Explain quantum numbers with example?
9. Write an essay on the various methods of expressing concentration in solution.