

B.Sc. (FS) Semester - 2 (NEP-2020) Examination**MARCH/APRIL-2025****Chemistry: Foundation in Chemistry (Minor-2)****Time: 2 Hours****Marks:50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1	Answer the following questions.	(10)
	(A) Discuss: Diagonal relationship of Beryllium and Aluminium.	(05)
	(B) Write a detailed note on Cobalt nitrate test in Qualitative Analysis.	(05)
	OR	
Que.1	Answer the following questions.	(10)
	(A) Explain classification of Oxides of p-block elements based on their oxygen content.	(05)
	(B) (i) Give any four uses of Na_2CO_3 .	(02)
	(ii) Discuss: Metallic character of s-block elements.	(03)
Que.2	Answer the following questions.	(10)
	(A) (i) Discuss: Electronic explanation for <i>m</i> - directing groups in aromatic hydrocarbon.	(03)
	(ii) Write all the criteria for a compounds to be aromatic.	(02)
	(B) Explain Formation of Alkenes by.....	(05)
	(i) Dehalogenation of vicinal dihalides &	
	(ii) Dehydrohalogenation of alkyl halides.	
	OR	
Que.2	Answer the following questions.	(10)
	(A) Explain: Nucleophilic addition reactions of cyanides and alcohols with Alkynes.	(05)
	(B) Explain Preparation of small ring Cyclo-alkanes by	(05)
	(i) Intra-molecular Wurtz reaction &	
	(ii) Diels-Alder reaction	
Que.3	Answer the following questions.	(10)
	(A) Define: Electrolytes & Write a note on Ionic product of water.	(05)
	(B) (i) Write a note on Metallic solids.	(03)
	(ii) Explain: Frenkel Defect in solids.	(02)
	OR	
Que.3	Answer the following questions.	(10)
	(A) Define: Non-electrolytes & Describe dissociation constant of Weak acids.	(05)
	(B) Give any five differences between Crystalline & Amorphous solids.	(05)
Que.4	Answer the following questions.	(10)
	(A) Give preparation, physical properties & uses of NaHCO_3 .	(05)
	(B) (i) Explain substitution reactions of Cycloalkanes.	(03)
	(ii) Discuss: Application of Huckle's rule to simple annulenes for aromaticity.	(02)
	OR	
Que.4	Answer the following questions.	(10)
	(A) Discuss: Saytzeff and Hofmann rule for Alkenes.	(05)
	(B) (i) Give preparation & properties of Boric acid.	(03)
	(ii) Explain only the working method of Flame test in Qualitative analysis.	(02)
Que.5	Answer the following questions.	(10)
	(A) Discuss: Markownikoff's and Anti- Markownikoff's rules for alkenes with appropriate reactions. (Without mechanism)	(05)
	(B) Define: Weak Electrolytes & Write a note on Dissociation Constant for weak bases.	(05)
	OR	
Que.5	Answer the following questions.	(10)
	(A) Calculate no. of atoms per unit cell for SCP, BCC & FCC.	(05)
	(B) Explain Addition reactions of Cyclo-alkanes in detail.	(05)
