

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions from remaining **five** questions.

1. (a) Give IUPAC nomenclature for the following :- 3
 - (i) $[(\text{Co}(\text{NH}_3)_5\text{Cl})\text{Cl}_2]$
 - (ii) $[\text{Cr}(\text{NH}_3)_6]^{+3}$
 - (iii) $\text{K}[\text{PtCl}_3(\text{NH}_3)]$
- (b) Write the structures of the following :- 2
 - (i) Tetra ammine aquamonobromo-cobalt (III) nitrate
 - (ii) ferric hexa cyano ferrate (II)
- (c) Define the following :- 3
 - (i) Transition state
 - (ii) Astringent
 - (iii) Effective Atomic Number [EAN].
2. (a) Discuss specific acid catalysis. 4
- (b) Elaborate the concept of reactivity and selectivity for chemical reactions of halogenation of alkanes. 4
3. (a) Classify types of antacids with example. Elaborate on combination antacids. 4
- (b) Explain the effect of temperature in rate of reaction and what is its significance. 4
4. (a) Write a note on initial rate kinetics. 4
- (b) Discuss with example effect of weak field and strong field ligand on crystal field splitting in case of co-ordinate complexes. 4
5. (a) Give property and use of following (any two) :- 4
 - (i) Hydrogen peroxide
 - (ii) Talc
 - (iii) Povidone iodine
- (b) Discuss the effect of primary isotope. 4
6. (a) Write short notes on (any two) :- 6
 - (i) Charge transfer complex
 - (ii) Microscopic reversibility
 - (iii) Mechanism of antimicrobial agents
- (b) Predict the magnetic property and geometry of $[\text{Fe}(\text{H}_2\text{O})_6]^{+3}$ 2