

GOVERNMENT GENERAL DEGREE COLLEGE, CHAPRA

U.G. INTERNAL ASSESSMENT (2022-23)

SEMESTER-IV

SUBJECT- CHEMISTRY

FULL MARKS – 15

Time: 1 Hour

A. Answer any seven questions from the following: [7x2=14]

1. What are Inner and outer orbital complexes? Give example. 2
2. Explain why NiCl_4^{2-} is paramagnetic. 2
3. Calculate the CFSE for $[\text{Fe}(\text{CN})_6]^{3-}$? 2
4. Explain why hydrated copper sulphate is blue in colour but anhydrous copper sulphate is white? 2
5. Write the IUPAC name for the following compounds.
 - i. $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$ 1
 - ii. $\text{K}_3[\text{Fe}(\text{CN})_6]$ 1
6. Draw all possible isomers of $[\text{Co}(\text{en})_2\text{Cl}_2]^+$. 2
7. What is Jahn-Teller distortion? 2
8. Discuss the cause of lanthanide contraction? 2
9. Explain the following terms.
 - i. Specific conductance. 1
 - ii. Cell Constant. 1
10. Define Raoult's law. 2

B. Answer any one question from the following: [1x1=1]

1. What is azeotropic mixture? 1
2. Give one example of following isomerism in coordination compounds.
 - i. Ionisation isomerism. 1/2
 - ii. Hydrated isomerism. 1/2