



K23P 1375

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (CBSS – Reg./Supple./Imp.) Examination,  
October 2023  
(2020 Admission Onwards)  
**CHEMISTRY**  
**CHE3C08 : Inorganic Chemistry – II**

Time : 3 Hours

Max. Marks : 60

## SECTION – A

Answer **all** questions in **one** word or **one** sentence. **Each** question carries **one** mark. (8×1=8)

1. Give an example of a compound which will exhibit Jahn-Teller distortion.
2. Tetrahedral complexes are high spin. Why ?
3. What is the ground state term for  $p^2$  configuration ?
4. What is Neel's temperature ?
5. Define chelate effect.
6. Why square planar complexes are considered as generally labile ?
7. What is Zeise's salt ? Draw its structure.
8. Give two examples of organometallic compounds of beryllium.

## SECTION – B

Answer **any eight** questions. Answer may be **two** or **three** sentences. **Each** question carries **two** marks. (8×2=16)

9.  $Pt^{4+}$  ion forms octahedral whereas  $Pt^{2+}$  ion forms square planar complexes. Explain.
10. Draw the crystal field splitting diagram for  $[CoCl_4]^{2-}$  and calculate CFSE.

P.T.O.



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## SECTION – D

Answer **any four** questions. Essay type questions. **Each** question carries **six** marks. (4×6=24)

27. A) Explain the MO energy level diagram for octahedral, tetrahedral and square planar complexes.

OR

- B) Explain CFT. Write notes on the crystal field splitting in octahedral complexes. What are the factors affecting the magnitude of  $\Delta$  ?

28. A) Discuss briefly Gouy method for the determination of magnetic susceptibility of complexes.

OR

- B) What are Tanabe Sugano diagrams ? Draw the Tanabe Sugano diagram of  $d^2$  octahedral complexes ? Discuss the applications of Tanabe Sugano diagrams.

29. A) Explain briefly the determination of formation constants by pH metric and spectrometric methods.

OR

- B) Write notes on the redox reactions and photochemical reactions of coordination compounds.

30. A) Discuss the structure and bonding in ferrocene.

OR

- B) Explain the mechanism of hydroformylation reaction.