SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
B.Sc.Chemistry - END SEMESTER EXAMINATIONS - APRIL 2025
SEMESTER - V
22UCHCT5009 - Coordination Chemistry

Total Duration : 2 Hrs.30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. List out the IUPAC rules for naming mono nuclear compounds.
2. Show the relationship between stepwise and overall stability constant.
3. Account for the evidences in favour of polarization theory. Add a not on it defects.
4. Explain about the structure and importance of chlorophyll.
5. Predict the hybridization, geometry and magnetic properties of $[Ni(CN)_4]^{2-}$.
6. Classify the compounds as labile and inert according to VBT and CFT.
7. Describe the mechanism of outer sphere mechanism.
8. Analyse the hybridization and structure of cobalt carbonyl.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain the geometrical and optical isomerism shown by octahedral complexes.
10. (a) Calculate the CFSE value in Δ_o and E_P for d^4 and d^6 system of strong and weak filed case of octahedral system (6M)
    (b) Discuss the various factors that affects CFSE (4M)
11. Determine how the stability constant is determined by Bjeruum's method.
12. What is trans effect? Apply the application of trans effect in synthesizing cis and trans $[Pt\ Cl_2(NH_3)(NO_2)]$ from $[PtCl_4]^{2-}$.
13. Analyse the applications of coordination compounds in qualitative and quantitative analysis.

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