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.
M.Sc. - END SEMESTER EXAMINATIONS NOVEMBER - 2022
SEMESTER - III
20PCHCT3008 - Inorganic Chemistry-III

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

Section A

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

1. Discuss the effect of coordination on the following using IR spectra:
   a. Urea complexes. b. Dithiocarbamato complexes.
2. Write a brief account of Racah Parameter and its applications.
3. Discuss the principle of Mossbauer spectra.
4. Explain the nuclear hyperfine splitting pattern of methyl radical.
5. Discuss the basic principle of diffraction technique.
6. Give a detailed account of Flourescence Spectroscopy.
7. Write a note on shift reagents in NMR.
8. With specific example, explain Raman Spectroscopy of metal complexes.

Section B

Part A

Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Write short notes on IR spectral applications to:
   a. Metal carbonyls b. Olefin complexes c. Sandwich complexes.
10. What do you mean by Jahn-Teller distortion ? Explain with any two complexes.
11. Write a note on "Mossbauer of Fe and Sn systems".
12. State and explain Kramer's theorem and its consequences.

Part B

Compulsory question $(1 \times 10 = 10$ Marks)

13. How is X-ray powder diffraction data used in identifying inorganic crystalline solids.

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