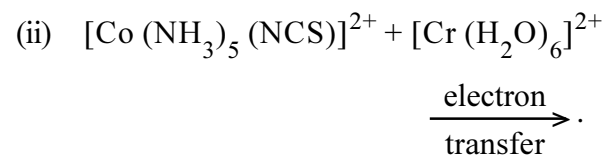
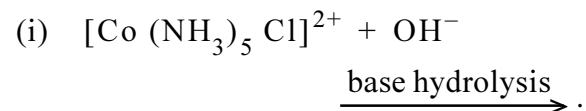


4

- (b) Explain how will you analysis lime, manganese and sulphur content in a sample of soil.

PART - C (3 × 20 = 60)

11. (a) Discuss the principles and applications of conductometric titrations.
- (b) Write briefly on the sources of water pollution.
12. (a) Explain the Mossbauer spectral features of high and low spin octahedral Fe(II) and Fe(III) complexes.
- (b) Compare electron and neutron diffraction techniques.
13. Discuss the mechanism involved in the following reactions. Give evidences in favour of such mechanisms :



Register Number :

Name of the Candidate :

7 7 4 2

M.Sc. DEGREE EXAMINATION, 2007

(CHEMISTRY)

(SECOND YEAR)

(PAPER - VIII)

220. INORGANIC CHEMISTRY - II

(Revised Regulations)

(Including Lateral Entry)

May]

[Time : 3 Hours

Maximum : 125 Marks

Answer ALL questions from Part - A and Part - B.

Answer any THREE questions from Part - C.

Part - A, Part - B and Part - C questions carry 3, 10, and 20 marks respectively.

All questions carry equal marks.

Turn over

PART - A (3 × 5 = 15)

1. State and explain water pollution laws and standard.
2. Outline the principles involved in Auger spectroscopy.
3. In what way acid hydrolysis reactions of Co(III) and Pt(II) complexes differ?
4. Talc is soft. - Explain.
5. Explain flash point and octane number.

PART - B (5 × 10 = 50)

6. (a) Give an account on the principles and inorganic applications of cyclic voltammetry.
(OR)
(b) Write briefly on the instrumental techniques for the analysis of heavy metals in aqueous systems.
7. (a) State and explain Koopman's theorem. Write a brief note on the applications of ESCA.

(OR)

- (b) Define unit cell. Give a method for its identification.
8. (a) Distinguish between *trans* effect and *trans* influence. Discuss the pi - bonding theory of *trans* effect.

(OR)

- (b) Describe the electron tunneling hypothesis for the outer sphere electron transfer reactions.
9. (a) Give a critical account on the preparation and applications of nanocrystalline materials.

(OR)

- (b) Discuss the structure of 12 - phosphotungstic acid.
10. (a) Write briefly on the principles and applications of super critical fluids chromatography.

(OR)

Turn over

5

14. (a) What are refractories? Give an account on their properties and applications.
- (b) Discuss the different types of electron deficient bonds by citing the structure of $B_{10}H_{14}$.
15. Write notes on :
- (i) Cotton effect.
 - (ii) HPLC.
 - (iii) Nitrogen fixation.

5

14. (a) What are refractories? Give an account on their properties and applications.
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