

7. Describe the following methods of thermal analysis :

(a) TGA 8

(b) DTA 8

Unit IV

8. Discuss the theory of anodic and cathodic stripping voltammetry. Also, give its applications in inorganic chemistry. 16

9. Discuss the experimental approach and applications of anodic deposition and cathodic redissolution to inorganic systems. 16



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Roll No.

31546

M.Sc. EXAMINATION, 2025

(Fourth Semester)

(Regular and Re-appear)

CHEMISTRY

(2020-21 Onwards)

Inorganic Chemistry Special-V

Time : 3 Hours]

[Maximum Marks : 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is residual current ?
(b) Write Koutecky's equation.
(c) Define amperometric titrations.
(d) What is a glassy carbon electrode ?
(e) What is the stripping process ?
(f) Define the term concentration process.
(g) Define the principle of coulometry.
(h) What is the rest period ? **8×2=16**

Unit I

2. (a) Write notes on the following :
(i) Saturated calomel electrode. **4**
(ii) Dropping mercury electrode. **4**
(b) What is the working principle of polarography ? Also discuss the types of currents in polarography. **8**
3. Explain the Polarographic waves with mathematical expression. **16**

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Unit II

4. (a) How will you determine the stability constants of complexes of reversible systems only by direct current Polarography ? **8**
(b) Explain the construction and working of the following electrodes : **8**
(i) Carbon paste electrode
(ii) Gold electrode.
5. Explain the principle of amperometric titrations. Also, discuss the types of titration curves with suitable examples. **16**

Unit III

6. (a) Describe the analytical applications of redox chemistry of inner transition elements. **10**
(b) Write a short note on chronopotentiometry. **6**

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