Roll No..... .....

78054

M. Sc. (Chemistry) 4th Semester Examination – December, 2014

INORGANIC SPECIAL - V

Paper : CH-505XV

Time : Three Hours] *[Maximum Marks : 80*

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

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory.*

1. (a) Write Koutecky equation. 2 × 8

(b) What are the functions of supporting electrolyte in polarography ?

(c) Define stability constant of complexes.

(d) What do you know about Gold electrode ?

(e) Give the principle of chronoamperometry.

(f) Write two important applications of a.c. Polarography.

(g) What is concentration process ?

(h) What do you mean by stripping voltametry ?

SECTION – A

2. (a) What do you understand by electron at and across the interfaces ? Explain. 8

(b) What is polarographic maxima ? Give its types and differentiate between various types. 8

3. (a) Give the expression of half wave potential. Explain its significances. 8

(b) Why oxygen has to be removed from the test solution before polarographic measurements ? Explain. 8

SECTION – B

4. (a) Give the principle and experimental details for amperometric titrations with d. m. e. 8

(b) Explain rotating Pt. electrode (RPE) 8

5. Write notes on :

(i) Catalytic hydrogen wave. 8

(ii) Hanging mercury drop electrode. 8

SECTION – C

6. (a) Write note on chronopotentiometry. 6

(b) Differentiate between normal and pulse polarography. Explain their polarograms. 10

7. (a) Give the principle and various applications of coulometry. 8

(b) Discuss the principle and applications of square wave polarography. 8

SECTION – D

8. (a) Explain the design and working of liquid membrance electrode. 8

(b) Give various applications of ISE in the inorganic systems with examples. 8

9. (a) What do you know about Anodic deposition and Cathodic redissolution ? Discuss in details. 8

(b) Explain the theory of Cathodic stripping voltametry. Give applications of stripping analysis for the analytical chemistry. 8

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