

Roll No.

42004

**M. Sc. (Chemistry) 4th Semester
Examination – May, 2019**

INORGANIC SPECIAL - V

Paper : CY(H)-402(a)/4284

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*.

All questions carry equal marks.

1. (a) How a large concentration of a supporting electrolyte can eliminate the migration current ?
 - (b) Define coulometry.
 - (c) What is anodic deposition ?
 - (d) What are the main sources of residual current in polarography ?
 - (e) Give two applications of Square wave Polarography.

P. T. O.

- (f) Draw a neat and clean diagram of Hanging Mercury Drop Electrode.
- (g) What do you mean by Ilkovic Equation ?
- (h) Write the two disadvantages of Dropping Mercury Electrode. $8 \times 2 = 16$

SECTION - A

2. (a) What are polarographic maxima ? Explain its various types. How can these be suppressed ? 8
- (b) Explain various factors governing limiting current in polarography. 8
3. (a) What do you understand by electrons at and across interface ? Explain in detail. 8
- (b) Explain half wave potential and its significances. 8

SECTION - B

4. (a) Discuss different types of carbon electrodes; such as carbon paste, graphite and glassy carbon electrode. 8
- (b) Explain the apparatus and applications of amperometric titrations. 8
5. (a) Give a detail account of catalytic hydrogen wave. 8
- (b) Write short notes on :
Rotating Platinum Electrode & Gold Electrode 8

(2)

SECTION - C

6. (a) Explain square wave polarography in detail.
- (b) Discuss principle, instrumentation applications of Differential Pulse Polarography.
7. (a) Explain chronoamperometry in detail.
- (b) Discuss the principle and applications superimposed AC polarography.

SECTION - D

8. (a) Write in detail about Anodic stripping voltametry.
- (b) Discuss the design and working of Linzyne substrate Electrode.
9. (a) Explain concentration process and rest period.
- (b) Explain the various applications of Ion Selective Electrodes to Inorganic Systems.

(3)