No. of Printed Pages : 03 **Roll No. .....**

CC-294

M. Sc. EXAMINATION, May 2018

(Third Semester)

(Re-appear Only)

CHEMISTRY

CH651B

Inorganic Chemistry Elective-I (NEC)

Time : 3 *Hours*] [*Maximum Marks :* 100

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

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What is nuclear stability rule ? What is effect of N/Z ratio on stability of a nucleus ? Explain with suitable example. **20**

2. Explain the following :

(a) Photoelectric effect

(b) Heisenberg's charge exchange force

(c) Shell model for nuclear structure

(d) Pair Production. **4,4,10,2**

Unit II

3. (a) Give a brief idea about compound nucleus theory.

(b) What are Photonuclear reaction ? Give its different type. **16,4**

4. (a) What are thermonuclear reactions ? Explain the different types of thermonuclear reaction in universe and on earth.

(b) Give a brief idea about accelerators. **10,10**

Unit III

5. (a) Give the expression for half wave potential. Explain its significance. **10**.

(b) Explain the role of supporting electrolyte in polarography. **5**

(c) What kind of interference is shown by oxygen in the polarography wave ? **5**

6. (a) Explain the Ilkovic equation for diffiusion current in polarography. Also give consequences of this equation. **10**

(b) Describe DME. Explain the advantage of this electrode. **10**

Unit IV

7. Write a note on Amperometric Titrations *or* Coulometry. **20**

8. (a) What are Qualitative and Quantitative application of polarography ? **10**

(b) Determination of stability constant of complexes by D.C. Polarography. **10**