

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name: Inorganic Chemistry-I

Subject Code: 4SC03ICH1

Branch: B.Sc. (Chemistry)

Semester: 3

Date: 01/12/2018

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

- Q-1 Attempt the following questions: (14)**
- What is electronegativity? (1)
 - What is covalent radius? (1)
 - Define *s*-block elements. (1)
 - Give IUPAC name of elements have atomic number 104 and 101. (1)
 - Which substance are called "Boranes"? (1)
 - Which boranes are quite stable and don't hydrolyze readily? (1)
 - Define kinetic stability. (1)
 - What is thermodynamic stability? (1)
 - Define labile. (1)
 - Give definition of lanthanides. (1)
 - Which oxidation state shown by all the lanthanide metals? (1)
 - What is general configuration of actinides? (1)
 - How are actinides prepared? (1)
 - Give the oxidation states of Uranium. (1)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- Discuss Electronic configuration and type of elements: *s*, *p* and *d* (14)
- Q-3 Attempt all questions (14)**
- Define inner orbital and outer orbital complexes. Describe labile and inert octahedral complexes according to CFT. (7)
 - Write a note on factors affecting on the stability of complexes. (7)
- Q-4 Attempt all questions (14)**
- Give brief note on preparation of Diborane (B_2H_6). (14)
- Q-5 Attempt all questions (14)**
- Discus experimental determination of stability constant by spectrophotometric (7)



- method.
- b) Write note on structure of Diborane. (7)
- Q-6** **Attempt all questions** (14)
- a) Discuss the magnetic property of actinides. (7)
- b) Explain experimental determination of stability constant by potentiometric method. (7)
- Q-7** **Attempt all questions** (14)
- a) Write electronic configuration, name and symbol of any ten lanthanides. (8)
- b) Discuss lanthanide contraction. (6)
- Q-8** **Attempt all questions** (14)
- a) Discuss about ionic radii of actinides. (6)
- b) Write electronic configuration, name and symbol of any ten actinides. (8)

