Enrollment No: _____ Exam Seat No: _____

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Inorganic Chemistry-I

Subject Code: 4SC03ICH1 **Branch: B.Sc. (Chemistry)**

Semester: 3 **Date: 25/04/2022** **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)**

a) Who gave the modern periodic law? **(1)**
b) Define Metallic radius **(1)**
c) Which elements are known as Eka-Silicon **(1)**
d) Give IUPAC name of elements have atomic number 104 and 109. **(1)**
e) Write general formulae of boron hydride **(1)**
f) B_2H_6 + Heat ---------->?? **(1)**
g) Who gave the idea of 3c-2e bond? **(1)**
h) Give the equations of relation between formation constant (Kf) and the standard Gibbs free energy change. **(1)**
i) Full form of CFSE is…… **(1)**
j) Some salt of lanthanides are colored due to _____transitions. **(1)**
k) Which oxidation state shown by all the lanthanide metals? **(1)**
l) What is Lanthanides contractions? **(1)**
m) ----------is the most important mineral containing lanthanides. **(1)**
n) Give the oxidation states of Cerium. **(1)**

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

Q-2 **(14)**

Explain Electron configuration and type of elements*: s, p,* and *d* blocks

Q-3 **Attempt all questions** **(14)**

a) Explain thermodynamic stability. **(7)**
b) Discus experimental determination of stability constant by Job's method. **(7)**

Q-4 **Attempt all questions** **(14)**

a) Give preparation of Diborane (B_2H_6). **(06)**
b) Discuss the structure of Diborane. **(08)**

Q-5			**(14)**
		Explain factors affecting the stability of metal complexes	
Q-6		**Attempt all questions**	**(14)**
	a)	Discus properties of lanthanides.	**(7)**
	b)	Explain oxidation states of lanthanides.	**(7)**
Q-7		**Attempt all questions**	**(14)**
	a)	Write electronic configuration, name and symbol of any ten lanthanides.	**(8)**
	b)	Discus oxidation state and color of actinides.	**(6)**
Q-8		**Attempt all questions**	**(14)**
	a)	Write uses of lanthanides.	**(6)**
	b)	Write electronic configuration, name and symbol of any ten actinides.	**(8)**