C.U.SHAH UNIVERSITY
Summer Examination-2018

Subject Name: Chemistry-II

Subject Code: 4SC02CHC1/4SC02CHE1   **Branch: B.Sc. (All)**

Semester: 2   **Date: 02/05/2018**   **Time: 10:30 To 01:30**   **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)	Define unit cell	**01**
	b)	What do you mean by promoters?	**01**
	c)	Define: Electrochemical cell.	**01**
	d)	Define: Emf series.	**01**
	e)	What do you mean by electrode?	**01**
	f)	What is called activation energy?	**01**
	g)	Define common ion effect.	**01**
	h)	What is called a catalyst?	**01**
	i)	Define the term PPM	**01**
	j)	Define ionic solids.	**01**
	k)	What do you meant by TDS?	**01**
	l)	What is called homogenous catalyst?	**01**
	m)	Define point defect.	**01**
	n)	Define the term crystal lattice	**01**

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

Q-2		**Attempt all questions**	**(14)**
	a)	Discuss packing efficiency in hcp and ccp structure.	**07**
	b)	Explain the method for calculation of heat of formation based on Hess's law.	**07**

Q-3		**Attempt all questions**	**(14)**
	a)	Draw the MO energy level diagram for O_2^- and explain the stability, magnetic properties and the bond order.	**07**
	b)	Write a note on catalysis.	**07**

Q-4		**Attempt all questions**	**(14)**
	a)	Explain the relation between ΔG, ΔH, ΔS and K.	**07**
	b)	Explain the determination of Ca^{+2} ion and Mg^{2+} ion in the given water sample	**07**

using complexometric titration.

Q-5	**Attempt all questions**	**(14)**
a)	Explain the schottky and frenkel defects in detail.	**07**
b)	Discuss the bond order, stability and magnetic properties of N_2^+ using MOT diagram.	**07**

Q-6	**Attempt all questions**	**(14)**
a)	What are ionic solids? Give their characteristics.	**05**
b)	Give the difference between V.B.T. and M.O.T	**05**
c)	Write a note on enzyme catalysis.	**04**

Q-7	**Attempt all questions**	**(14)**
a)	Discuss on the Nernst equation and its uses.	**07**
b)	50mL of 6.0×10^{-3} M $CaCl_2$ is mixed with 30mL of 0.04M NaF_2. Will precipitation of CaF_2 occur? ($K_{sp} = 4.0 \times 10^{-11}$).	**07**

Q-8	**Attempt all questions**	**(14)**
a)	Explain the temporary hardness of water.	**05**
b)	Explain the reaction involved in borax bead test.	**05**
c)	Write a note on galvanic cell.	**04**