Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name: Chemistry-I
Subject Code: 4SC01CHE1 **Branch: B.Sc. (All)**
Semester: 1 **Date: 22/03/2019** **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) Define: Substitution reaction. **(1)**
b) Which type of hybridization present in CH_4? **(1)**
c) Define: Adsorbate. **(1)**
d) What is the definition of solution? **(1)**
e) Write statement of lewis concept for acid and base. **(1)**
f) What do you mean by closed system in thermodynamic? **(1)**
g) Give the name of two types of standard solution. **(1)**
h) Write types of elimination reaction. **(1)**
i) What is electron affinity? **(1)**
j) Write the definition of hybridization. **(1)**
k) What is isothermal process? **(1)**
l) Write the pH for pure water. **(1)**
m) Define: covalent radius. **(1)**
n) Give the structure of cyclo butadiene. **(1)**

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

Q-2 **Attempt all questions** **(14)**

a) Explain SN_1 and SN_2 reaction with mechanism. **(7)**
b) Discuss Arrhenius concept and lowry-bronsted concept for acid and base. **(7)**

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

(a) Give the definition of buffer capacity and Calculate the pH of a 0.625 M solution of CH_3COONa .[K_a=1.754 x 10^{-5}] **[5]**
(b) Write brief note on ionization potential. **[5]**
(c) Write any four rule of VSEPR theory. **[4]**

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

(a) Describe work obtain during isothermal change. **(6)**
(b) Write note on first law of thermodynamics with mathematical form. **(5)**

	(c)	Differentiate physical adsorption and chemical adsorption.	**(3)**
Q-5		**Attempt all questions**	**(14)**
	(a)	Write periodic trend and factor affecting on the magnitude of ionic radius.	**[7]**
	(b)	Give the definition of molality and calculate that for 10% (W/W) solution of NaCl what is the mole fraction of each component in the solution? (Molecular weight: NaCl= 58.5 and H_2O= 18)	**[5]**
	(c)	What is the V.B.? Write any two limitations of it.	**[2]**
Q-6		**Attempt all questions**	**(14)**
	(a)	Write any four methods for preparation of cycloalkanes.	**(8)**
	(b)	Write any six uses of adsorption.	**(6)**
Q-7		**Attempt all questions**	**(14)**
	(a)	Give the definition of mole fraction and strength of solution and find out weight fraction percentage (%W/W) of solution prepared from 5 gm NaOH stabilized into 45 gm H_2O	**(5)**
	(b)	Explain SP^2 hybridization with example of ethylene molecule.	**[5]**
	(c)	Write short note on preparation of standard solution.	**[4]**
Q-8		**Attempt all questions**	**(14)**
	(a)	Explain elimination reaction briefly.	**(7)**
	(b)	Write a note on freundlich adsorption isotherm with diagram.	**(7)**