Enrollment No: _____ Exam Seat No:_____

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Chemistry-I

Subject Code: 4SC01CHE1 Branch: B.Sc. (All)

Semester: 1 Date: 27/04/2022 Time: 11:00 To 02:00 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) What is metallic radii? 01
b) Define SP hybridization. 01
c) What do you mean by closed system? 01
d) Define Saytzeff's rule. 02
e) Define desorption. 01
f) What is isothermal process? 01
g) Write full form of VSEPR. 01
h) What is normality? 01
i) Define E^2 reaction. 01
j) What is the shape of BF_3? 01
k) Define ionization potential. 01
l) What is adsorbent? 01
m) What is an acid according to Arrhenius concept? 01

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

Q-2 Attempt all questions (14)

a) Explain Pauling's method for the determination of ionic radius. 05
b) Describe valence electron pair repulsion theory. 05
c) Explain SP^3 hybridization with an example. 04

Q-3 Attempt all questions (14)

a) Explain E^1 and E^2 reaction with mechanism. 07
b) Write the reaction of alkyl halide react with KSH, K_2S and $AgNO_2$. 03
c) Explain the preparation of cyclopentane by dieckmann method. 04

Q-4 Attempt all questions (14)

a) Explain Stainless theory of sasche-Mohr. 05
b) A sample of 0.58gm of NaCl is dissolved in water made upto 100ml. 05

		calculate the normality of this solution. [Na=23, Cl=35.5]	
	c)	State all the statements of 1st law of thermodynamics.	04
Q-5		**Attempt all questions**	**(14)**
	a)	Write any three uses of adsorption.	02
	b)	Explain and derive Langmuir adsorption isotherm equation.	07
	c)	Give a short note on Freundlich adsorption isotherm.	05
Q-6		**Attempt all questions**	**(14)**
	a)	Explain all thermodynamic processes.	07
	b)	Explain the buffer action of an acidic buffer.	05
	c)	Define the following terms: i) Ph of solution ii) Degree of hydrolysis	02
Q-7		**Attempt all questions**	**(14)**
	a)	How to prepare 1000 ml standard solution borax?	05
	b)	Calculate molarity of 1 liter's solution containing 50gm of NaOH.	04
	c)	Derive Henderson equation to calculate the pH of an acidic buffer solution.	05
Q-8		**Attempt all questions**	**(14)**
	a)	Write the difference between the part per million and part per thousand.	04
	b)	Discuss mechanism of acid and basic buffer solution	07
	c)	Write a note on electron affinity.	03