

Enrollment No: _____ Exam Seat No: _____

C. U. SHAH UNIVERSITY

Winter Examination-2022

Subject Name: Chemistry-I

Subject Code: 4SC01CHE1

Branch: B.Sc. (All)

Semester: 1

Date: 06/01/2023

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) In periodic table group I, known as _____.	01
	b) Write any two example of noble gas with name and symbol.	01
	c) Write down the full form of ABMO and BMO.	01
	d) Which gas is produced when ethanol is with sodium?	01
	e) Draw the structure of Spiro pentane.	01
	f) Define: Spiro compound.	01
	g) What is called open system?	01
	h) In isothermal process _____ remains constant.	01
	i) Physical adsorption is a _____ process.	01
	j) Write the formula of molarity.	01
	k) The substance which is presence in large quantity in the solution is called_____.	01
	l) What is the value of pH for acidic solution?	01
	m) Who suggested a new scale to express pH?	01
	n) Which hybridization can be seen in CH ₄ ?	01

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

Q-2	Attempt all questions	(14)
	a) Write a note on ionization energy.	07
	b) Discuss in detail: Mendeleev's periodic table.	07
Q-3	Attempt all questions	(14)
	a) Write four general methods for the preparation of cycloalkanes.	07
	b) Discuss chemical properties of cycloalkanes.	07



Q-4	Attempt all questions	(14)
a)	Explain SN_1 reaction with mechanism.	07
b)	Define heat capacity and derive $C_p - C_v = R$.	07
Q-5	Attempt all questions	(14)
a)	Write the reaction of CH_3CH_2Br with $AgOH$, KCN and NH_3 .	06
b)	Give the difference between physical adsorption and chemical adsorption.	08
Q-6	Attempt all questions	(14)
a)	Answer briefly sp^3 hybridization with examples.	07
b)	Discuss in details VSEPR Theory.	07
Q-7	Attempt all questions	(14)
a)	What is equivalent weight, explain the equivalent weight of acid and base.	08
b)	A sample of 0.58gm of $NaCl$ is dissolved in water and made up to 100ml. Calculate the normality of this solution. [$Na = 23$, $Cl=35.5$]	06
Q-8	Attempt all questions	(14)
a)	Explain Bronsted – Lowry concept for acids and bases.	07
b)	Derive an equation for K_a and K_b .	07

