Enrollment No:	Exam Seat No:
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C.U.SHAH UNIVERSITY

Summer Examination-2020

Subject Name: Chemistry-I

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

Semester: 1 Date: 04/03/2020 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)	Give the example of partially miscible liquids.	(1)
	b)	Define: covalent radius.	(1)
	c)	What is the definition of solution?	(1)
	d)	Write types of elimination reaction.	(1)
	e)	Give the example of sp hybridization.	(1)
	f)	What is isothermal process?	(1)
	g)	Define: Substitution reaction.	(1)
	h)	What is electron affinity?	(1)
	i)	What is Lewis acid?	(1)
	.j)	Give the structure of cyclo butadiene.	(1)
	k)	What is ionic radius?	(1)
	1)	Define: E ₁ reaction	(1)
	m)	Write bond angle for <i>sp</i> hybridization.	(1)
	n)	What do you mean by closed system in thermodynamic?	(1)
Attemp	/	our questions from Q-2 to Q-8	(-)
Q-2		Attempt all questions	(14)
	a)	Write periodic trend and factor affecting on the magnitude of ionic radius.	(7)
	b)	Explain elimination reaction briefly.	(7)
Q-3		Attempt all questions	(14)
	(a)	Give the definition of mole fraction and what is mole fraction of each component	[5]
		for 5% (w/w) solution of KCl? [molecular weight : KCl=74.5, H ₂ O=18]	
	(b)	Give the definition of molality and calculate that for 10% (W/W) solution of NaCl	[5]
		what is the mole fraction of each component in the solution? (Molecular weight:	
		NaCl= 58.5 and H ₂ O= 18)	F 43
	(c)	Write any four rules for VSEPR theory with short description of it.	[4]



Q-4		Attempt all questions	(14)
	(a)	Derive C_p - $C_v = R$.	(5)
	(b)	Give the chemical properties of cycloalkanes.	(5)
	(c)	Write a short note on preparation of standard solution.	(4)
Q-5		Attempt all questions	(14)
	(a)	Explain SN ₁ reaction with mechanism and its energy diagram.	[7]
	(b)	Write a note on Langmuir adsorption isotherm with diagram (At high pressure only).	[7]
Q-6		Attempt all questions	(14)
	(a)	Give the definition of buffer capacity and Calculate the pH of a 0.625 M solution of CH ₃ COONa .[K_a =1.754 x 10 ⁻⁵]	(7)
	(b)	Write note on first law of thermodynamics with mathematical form.	(7)
Q-7		Attempt all questions	(14)
	(a)	Write any four methods for preparation of cycloalkanes.	(8)
	(b)	Write types of system with example.	[4]
	(c)	What is the V.B.? Write any two limitations of it.	[2]
Q-8		Attempt all questions	(14)
	(a)	Write brief note on ionization potential and factors affecting on it.	(7)
	(b)	What is buffer solution explain briefly with mechanism.	(7)

