

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.
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Q-1 Attempt the following questions: (14)

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|--|----|
| 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)**

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|--|----|
| 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)

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|---|----|
| 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)

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|--|----|
| 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 1 st 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:	02
	i) Ph of solution	
	ii) Degree of hydrolysis	
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

