

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 ₂ S 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: 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

