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

Summer Examination-2019

Branch: B.Sc. (All)

Subject Name: Chemistry-I Subject Code: 4SC01CHE1

Semester: 1 Date: 22/03/2019 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) | Define: Substitution reaction. | (1) |
| | b) | Which type of hybridization present in CH ₄ ? | (1) |
| | c) | Define: Adsorbate. | (1) |
| | d) | What is the definition of solution? | (1) |
| | e) | Write statement of lewis concept for acid and base. | (1) |
| | f) | What do you mean by closed system in thermodynamic? | (1) |
| | g) | Give the name of two types of standard solution. | (1) |
| | h) | Write types of elimination reaction. | (1) |
| | i) | What is electron affinity? | (1) |
| | j) | Write the definition of hybridization. | (1) |
| | k) | What is isothermal process? | (1) |
| | 1) | Write the pH for pure water. | (1) |
| | m) | Define: covalent radius. | (1) |
| | n) | Give the structure of cyclo butadiene. | (1) |
| Attemp | | Cour questions from Q-2 to Q-8 | ` / |
| Q-2 | | Attempt all questions | (14) |
| | a) | Explain SN ₁ and SN ₂ reaction with mechanism. | (7) |
| | b) | Discuss Arrhenius concept and lowry-bronsted concept for acid and base. | (7) |
| | | | |
| Q-3 | | Attempt all questions | (14) |
| | (a) | Give the definition of buffer capacity and Calculate the pH of a 0.625 M solution | [5] |
| | | of CH_3COONa .[$K_a=1.754 \times 10^{-5}$] | |
| | (b) | Write brief note on ionization potential. | [5] |
| | (c) | Write any four rule of VSEPR theory. | [4] |
| Q-4 | | Attempt all questions | (14) |
| | (a) | Describe work obtain during isothermal change. | (6) |
| | (b) | Write note on first law of thermodynamics with mathematical form. | (5) |



| | (c) | Differentiate physical adsorption and chemical adsorption. | (3) |
|------------|------------|--|------|
| Q-5 | | Attempt all questions | (14) |
| | (a) | Write periodic trend and factor affecting on the magnitude of ionic radius. | [7] |
| | (b) | Give the definition of molality and calculate that for 10% (W/W) solution of NaCl what is the mole fraction of each component in the solution? (Molecular weight: | [5] |
| | | NaCl= 58.5 and H ₂ O= 18) | |
| | (c) | What is the V.B.? Write any two limitations of it. | [2] |
| Q-6 | | Attempt all questions | (14) |
| | (a) | Write any four methods for preparation of cycloalkanes. | (8) |
| | (b) | Write any six uses of adsorption. | (6) |
| Q-7 | | Attempt all questions | (14) |
| | (a) | Give the definition of mole fraction and strength of solution and find out weight fraction percentage (%W/W) of solution prepared from 5 gm NaOH stabilized into 45 gm H ₂ O | (5) |
| | (b) | Explain SP ² hybridization with example of ethylene molecule. | [5] |
| | (c) | Write short note on preparation of standard solution. | [4] |
| Q-8 | | Attempt all questions | (14) |
| - | (a) | Explain elimination reaction briefly. | (7) |
| | (b) | Write a note on freundlich adsorption isotherm with diagram. | (7) |

