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SARDAR PATEL UNIVERSITY  
B.Sc. Semester-I Examination [CBCS]  
Subject : General Chemistry-1 [US01CCHE51]

Date: 11/02/2022, Friday  
Time: 03.00 P.M to 05.00 P.M

11/02/2022, Friday

Total Marks: 70

- Que.1 Choose the correct option and rewrite the answer of the following. 10
- How many isomers are possible for hexane ?  
(a) 4 (b) 5 (c) 6 (d) 7
  - The general formula of Grignard reagent is.....  
(a) RMgLi (b) RMgX (c) MgX (d) RMgOH
  - Which carbocation is least stable ?  
(a)  $2^{\circ}$  (b)  $3^{\circ}$  (c)  $1^{\circ}$  (d)  $\text{CH}_3^+$
  - is not gas at room temperature.  
(a)  $\text{H}_2$  (b)  $\text{N}_2$  (c)  $\text{Br}_2$  (d) Ne
  - element does not form ionic compound readily.  
(a) Be (b) Sr (c) Ca (d) Mg
  - Which of the following is not a Lewis base?  
(a)  $\text{H}_2\text{O}$  (b)  $\text{Ag}^+$  (c)  $\text{C}_2\text{H}_5\text{OH}$  (d)  $\text{CN}^-$
  - What is the value of  $K_{\text{SP}}$  for  $\text{PbCl}_2$ ?  
(a)  $[\text{Pb}^{+2}][2\text{Cl}^-]^2$  (b)  $[\text{Pb}^{+2}]/[2\text{Cl}^-]^2$  (c)  $[\text{Pb}^{+2}][\text{Cl}^-]^2$  (d)  $[\text{Pb}^{+2}]/[\text{Cl}^-]^2$
  - Phenolphthalein is a .....  
(a) strong acid (b) strong base (c) weak acid (d) weak base
  - Gravimetric and Volumetric are -----  
(a) Chemical analysis (b) instrumental analysis (c) Both of these (d) None of these
  - Which of the following method is based on amount of sample -----  
(a) Proximate Analysis (b) Partial Analysis (c) Complete Analysis (d) Macro Analysis
- Que.2 Fill in the blanks: 08
- Which is not an oxidising agent ? ( $\text{KMnO}_4/\text{HgSO}_4$ )
  - E2 reaction is a .....step reaction. (single/two)
  - No space reserved for-----element in Mendeleeff's periodic table.(inert gases/ chalcogen)
  - ..... is the more fundamental property of the elements.(atomic number/atomic weight)
  - A weak base has strong conjugate.....( Base /Acid)
  - ..... is sparingly soluble salts. ( AgCl/ NaCl).
  - The positional mean for the given set of data is ----- (Arithmetic Mean/Median)
  - ..... Significant figure is present in the data : 0.00250 (3/5).
- (P.T.O)

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Que.3 Answer the following questions (any ten)

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1. Explain Wurtz reaction.
2. Explain Acetylene is stronger acid than ethane.
3. Give all the possible isomers of  $C_5H_{10}$  and their IUPAC name.
4. Define ionization energy.
5. Define electron affinity.
6. What is Modern periodic law.?
7. Give the difference between strong electrolyte and weak electrolyte.
8. Give any four limitations of Arrhenius acid-base theory.
9. Define pH. How the pH scale useful to classify the solution?
10. Write advantages of instrumental methods.
11. Define the term real sample and sampling.
12. Give limitations of chemical methods.

Que.4 Answer the following questions. ( any four )

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1. Discuss  $E1_r$  reaction mechanism with example.
2. Calculate the percentage of isomeric products obtain upon mono chlorination of n-butane. The relative reactivity of  $1^{\circ}$ ,  $2^{\circ}$  and  $3^{\circ}$  H-atom is 1 : 3.8 : 5
3. Discuss factors affecting the magnitude of electronegativity.
4. Discuss the defects of Mendeleeff's periodic table.
5. Write a note on Selective precipitation with suitable example.
6. Write a note on Buffer solution.
7. Give complete classification of chemical analysis.
8. Discuss briefly different methods for minimization of systematic error.

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