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| **PT1/CHQP/1223/A 10-APR-2023** | | | | | |
| **PERIODIC TEST - I (2023-24)** | | | | | |
| **Subject: CHEMISTRY**  **Grade: XII** | | Max. Marks:35Time:1Hr 15Mins | | | |
| **Name:** | | | **Section:** | **Roll No:** | |
| ***General Instructions:***  Read the following instructions carefully.  1. There are 16 questions in this question paper.  2. SECTION A - Q. No. 1 to 5 are multiple choice questions carrying 1mark each.  3. SECTION B - Q. No. 6 to 10 are short answer questions carrying 2 marks each.  4. SECTION C- Q. No. 11 to 15 are short answer questions carrying 3 marks each.  5. SECTION C- Q. No. 16 is a long answer question carrying 5 marks.  6. All questions are compulsory.  7. Use of calculators is not allowed | | | | | |
| **SECTION A** | | | | | |
| 1. | Which of the following is not true about enantiomers?   1. They have the same density 2. They have the same melting and boiling point 3. They have the same specific rotation 4. They have the same chemical reactivity | | | | 1 |
| 2 | Which of the following has the highest melting point?   1. o-Dichlorobenzene 2. m- Dichlorobenzene 3. p- Dichlorobenzene 4. all have the same melting point | | | | 1 |
| 3 | Which of the following belongs to the class of allyl halides?   1. CH2=CH-Cl 2. CH2=CH-CH2-CH2-Cl 3. CH2=CH-CH(Cl) -CH3 4. CH≡C-CH2-Cl | | | | 1 |
| 4 | Which is the correct increasing order of boiling points of the following compounds?  1-bromoethane, 1-bromopropane, 1-bromobutane, Bromobenzene   1. Bromobenzene < 1-bromobutane < 1-bromopropane < 1-bromoethane 2. Bromobenzene < 1-bromoethane < 1-bromopropane < 1-bromobutane 3. 1-bromopropane < 1-bromobutane <1-bromoethane < Bromobenzene 4. 1-bromoethane < 1-bromopropane < 1-bromobutane < Bromobenzene | | | | 1 |
| 5 | Which one is most reactive towards SN1 reaction?   1. C6H5CH(C6H5)Br 2. C6H5CH(CH3)Br 3. C6H5C(CH3)(C6H5)Br 4. (d) C6H5CH2Br | | | | 1 |
| **SECTION B** | | | | | |
| 6 | Haloalkanes react with KCN to form alkyl cyanides as main product while AgCN form isocyanides as the chief product. Explain. | | | | 2 |
| 7 | Why aryl halides are extremely less reactive towards nucleophilic substitution reactions? | | | | 2 |
| 8 | The treatment of alkyl chlorides with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain. | | | | 2 |
| 9 | Give reasons:   1. C-Cl bond length in chlorobenzene is shorter than C-Cl bond length in CH3-Cl. 2. SN1 reactions are accompanied by racemization in optically active alkyl halides. | | | | 2 |
| 10 | 1. Identify the compound that on hydrogenation produces an optically active compound from the following compounds:      1. Arrange the following in the increasing order of dipole moment:   Dichloromethane, Chloroform, Carbon tetrachloride | | | | 2 |
| **SECTION C** | | | | | |
| 11 | Give reason:   1. Allyl chloride is more reactive than n-propyl chloride towards nucleophilic substitution reaction. 2. Chloroform is stored in dark-coloured bottles. 3. For the preparation of alkyl chlorides from alcohols, thionyl chloride (SOCl2) is preferred. | | | | 3 |
| 12 | Among all the isomers of molecular formula C4H9Br, identify:   1. One isomer which is optically active 2. One isomer which is highly reactive towards SN2 3. Two isomers which give same product on dehydrohalogenation with alc.KOH   Justify your answers. | | | | 3 |
| 13 | When benzene reacts with CH3Cl in presence of AlCl3 to give A(C7H8). A reacts with 1mole of Cl2 in presence of sun light to form B C7H7Cl. B on reaction with KCN to form C. Identify A, B, C and explain the reactions. | | | | 3 |
| 14 | 1. Give the IUPAC name of the following compound:CH3-CH(Br)-CH2-CH(Cl)-CH3 2. Grignard reagents should be prepared under anhydrous conditions. Why? 3. Alkyl halides are polar but immiscible with water. Justify. | | | | 3 |
| 15 | An optically active compound having molecular formula C7H15Br reacts with aqueous KOH to give a racemic mixture of products. Write the mechanism involved in this reaction. | | | | 3 |
| **SECTION D** | | | | | |
| 16 | 1. Illustrate the following with suitable examples: 2. Wurtz-Fittig reaction 3. Finkelstein reaction 4. Convert Aniline to Iodobenzene 5. Complete the following: 6. CH3CH2CH=CH2 + HBr---------🡪 7. CH3CH2Br + KCN-----------🡪 | | | | 5 |

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