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| **Grade 11** | | | | | |
| **PERIODIC TEST 1 (2023-24)** | | | | | |
| **Subject: CHEMISTRY**  **Grade: XI** | | Max. Marks:35Time:1Hr15mins | | | |
| **Name:** | | | **Section:** | **Roll No:** | |
| ***General Instructions:***   * 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 mark.  6. All questions are compulsory.  7. Use of calculators is not allowed | | | | | |
|  | **SECTION A** | | | | |
| 1 | The alicyclic compound among the following is-   1. C6H5OH 2. C6H5CH2OH 3. C6H12   d) C6H6 | | | | 1 |
| 2 | Which of the following carbon atom marked with an asterisk is expected to have the greatest positive charge?   1. \*CH3-CH2-Cl 2. \*CH3-CH2-Mg-Cl 3. \*CH3-CH2-Br 4. \*CH3-CH2-CH3 | | | | 1 |
| 3 | Electrophiles are electron-seeking species. Which of the following groups contain only electrophiles?  a) BF3, NH3, H2O  b) AlCl3, **:**CCl2, NO2+  c) NO2+, CH3+, H2O  d) NO2+, C2H5+, NH3 | | | | 1 |
| 4 | The correct IUPAC name for the compound given below is-     1. 5-Butyl-6,7-dimethyloctane 2. 5-Isopropylnonane 3. 5-Isobutylnonane 4. 5-(1,2-Dimethylpropyl) nonane | | | | 1 |
| 5 | In the question below, two statements are marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:   1. Both A and R are correct, and R is the correct explanation of A. 2. Both A and R are correct, but R is not the correct explanation of A. 3. Both A and R are not correct 4. A is not correct but R is correct   Assertion (A): Resonance structures differ in the location of the constituent atoms.  Reason (R): Resonance stabilizes a molecule/ion. | | | | 1 |
|  | **SECTION B** | | | |  |
| 6 | Identify the type of organic reaction mechanism in each case:   1. R-X + OH **-** → R-OH + X **-** 2. Bromoethane to ethene | | | | 2 |
| 7 | Draw the bond line structures for-   1. 1,2,3-Cyclohexatriene 2. 3-Methylbutan-2-one | | | | 2 |
| 8 | Write the IUPAC names of the following:   1. (CH3)2CHCOOH 2. Ph-CH=CH-CHO | | | | 2 |
| 9 | Write any two differences between homolytic and heterolytic fissions. | | | | 2 |
| 10. | Draw the hyper conjugative structures for propene. | | | | 2 |
|  | **SECTION C** | | | |  |
| 11 | 1. Write the IUPAC name of the lowest molecular mass alkane with a quaternary carbon. 2. O2N-CH2CH2O**-** is more stable than CH3CH2O**-**. Why? 3. **For the following bond fission, use curved arrows to show the electron flow and classify it as homolysis or heterolysis.** | | | | 3 |
| 12 | Draw the structural formulae for the following compounds-   1. 4-Chloropentan-2-one 2. Hex -2-en-4- ynoic acid 3. 2,2-Dichloroethanol | | | | 3 |
| 13 | Answer the questions based on the information given below -  “Stability of carbocations depends upon the electron releasing inductive effect of groups adjacent to the positively charged carbon atom, involvement of neighboring groups in hyperconjugation and resonance”.  a) Arrange these carbocations in order of increasing stability  CH3CH2+ (CH3)3C+ (CH3)2CH+  b) State any one difference between a carbocation and a free radical.  c) Name the reactive intermediate formed in the following reaction?  CH2=CH2 + H+ ——> | | | | 3 |
| 14 | Write the IUPAC names for-  a)  b)  c) | | | | 3 |
| 15 | a) Draw all the resonance structures of phenol showing electron shift using curved arrow notation.  b) Classify the following species as electrophiles and nucleophiles.  BF3 **:**CCl2 H2O Br**-** | | | | 3 |
|  | . **SECTION D** | | | |  |
| 16 | . a) Name the chain isomer of C5H12 which has a tertiary carbon atom.  b) In which C – C bond of CH3CH2CH2Br, the inductive effect is expected to be the least?  c) Name the intermediates formed by the heterolytic fission of CH3Cu.  d) Draw the structure of a non-benzenoid compound.  e) Write the bond line formula for 3-Methylpentanenitrile | | | | 5 |

