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***Sincerity, Nobility and Service***

**CLASS: XI A CHEMISTRY**

**DATE: 27.01.19**

1. **Write IUPAC names of the following compounds:**



1. **Propanal and pentan-3-one are the ozonolysis products of an alkene. What is the structural formula of the alkene?**
2. **Draw the cis- and trans-structures for hex-2-ene. Which iosmer will have higher b.pt. and why?**
3. **Explain why alkyl groups act as electron donors when attached to a π-system.**
4. **Draw the resonance structures for the following compounds. Show the electron shift using curved-arrow notation. (a) C6H5OH  (b)CH3CH=CHCH2**
5. **What is the relationship between the members of following pairs of structures? Are they structural or geometrical isomers or resonance contributors?**

6. **Balance the following redox reactions by ion-electron method.**
**(a) MnO4–(aq) +I–(aq) ———>Mn02(s) + I2 (s) (in basic medium)**
7. **Depict the galvanic cell in which the reaction, Zn(s) + 2Ag+(aq) —> Zn2+(aq) + 2Ag(s)**
**takes place. Further show:**
**(i) Which of the electrode is negatively charged.**
**(ii) The carriers of current in the cell**
8. **Identify the substance oxidised, reduced, oxidising agent and reducing agent for each of the following reactions.**

9. **Arrange benzene, n-hexane and ethyne in decreasing order of acidic behaviour. Also give reason for this behaviour.**
10. **Why is benzene extra-ordinarily stable though it contains three double bonds?**
11. **What are the necessary conditions for any system to be aromatic?**
12. **For the following bond cleavages, use curved-arrows to show the electron flow and classify each as homolysis or heterolysis. Identify reactive intermediate produced as free radical, carbocation and carbanion.**

13. **Justify that the following reactions are redox reactions:**
**(a) CuO(s) + H2(g) —–> Cu(s) + H20(g)**
**(b) Fe2O3(s) +3CO(g) —-> 2Fe(s) + 3CO2(g)**
14. **Chlorine is used to purify drinking water. Excess of chlorine is harmful. The excess chlorine is removed by treating with sulphur dioxide. Present a balanced equation for the reaction for this redox change taking place in water.**
15. **How will you convert benzene into (i)p-nitrobromobenzene (ii) m-nitrochlorobenzene**

 **(iii) p-nitrotoluene ?**

1. **Explain the terms inductive and electromeric effects. Which electron displacement effect explain the following correct orders of acidity of the carboxylic acids?**
**(a) Cl3CCOOH > Cl2CHCOOH > ClCH2COOH**