Chemistry - 12th Class Chemistry Chapter 8 Short Questions Preparation

Q1. How common name of alkenes are derived?Give common names of $CH_2=CH_2$and $CH_3-CH_2=CH_2$?

Ans 1: For alkanes the word is derived from the Greek or Latin numerals indicating the number of carbons atom in molecule and the name is completed by adding ane as a suffix.Alkenes are similarly named by replacing the ending "ane" of the name of alkane with "ylene".

Q2. Explain Markovnikov rule with one example,

Ans 1: In the addition of an unsymmetrical reagent to an unsymmetrical alkene the negative part of the adding reagent goes to that carbon,constituting the double bond which has least number of hydrogen atom is called Markovnikov rule.

Q3. What is Hydrogenolysis?Give an example.

Ans 1: Hydrogenolysis is a chemical reaction whereby a carbon -carbon or carbon-heteroatom single bond is cleaved or undergoes lysis by hydrogen.The heteroatom may vary,but it usually is oxygen,nitrogen or sulfur.A related reaction is hydrogenation,where hydrogen is added to the molecule,without cleaving bonds.
R-X + H-H-----> R-H + HX

Q4. Why ethene is more reactive than ethyne towards additions reactions?

Ans 1: Ethene contains sigma-bond having partially filled p-orbitals overlap in a parallel fashion.sigma-electrons are less firmly held between the nulei. In ethene a sigma-bond is a weak bond.

Ans 2: In ethyne,the carbon atoms are held together by a triple bond,a 0-bond and two sigma-bond.The electrons density between the carbon atoms is very high which draws atoms very close to each other.Electrons in a triple bond are,therefore,less exposed and thus less reactive reagents.

Q5. Define Hydrogenation,

Ans 1: Hydrogenation is a process in which molecule of hydrogen added to an alkene in the presence of a catalyst and at moderate pressure (1-5 atm) to give a saturated compound.

Q6. Identify the actual product ,when HBr is added to propene.

Ans 1: Propene is an unsymmetrical alkene,According to Markovnikov rule.the negative part of the adding reagent goes to that carbon,constituting the double bond,which has least number of hydrogen atom.

Q7. Explain acidic nature of ethyne?

Ans 1: Ethnelnethyne,the hydrogen atom is bonded to the carbon atom with sp-s overlap.The sp hybridized carbon atom of ethyne pulls the electrons more strongly making the attached hydrogen atom slightly acidic as:H-C=C^{-8}-H^{+8}

Q8. Why are alkenes also called olefins?

Ans 1: Alkenes also known as olefins(derived from Latin word olefiant meaning oil forming) because its lower members from oily products on treatment with chlorine or bromine.

Q9. What is effect of branching on boiling of alkanes?

Ans 1: The boiling points of alkanes having branced chain structure are lower than their isomeric normal chain alkanes,e.g n-butane has higher boiling point than isobutene.

Q10. Why pie bond is more reactive than alpha bond?

Ans 1: In the formation of pie bond,the partially filled p-orbitals overlap in a parallel fashion,the probability of finding electron is thus away from the line joining the two nuclei,due to this reason pei electron are less fimely helf between the nuclei.
