Chemistry - 12th Class Chemistry Chapter 10 Short Questions Preparation

Q1. Give reason for reactivity Grignard reagent?

Ans 1: The reactivity of Grignard reagent is due to the nature of C-mg Bond which is highly polar,Magnesium is more electropositive than carbons and the C-mg bond though covalent is highly polar ,giving alkyl carbons the partial negative charge,This negative charge is unusual character which makes the alkyl group highly reactive towards electrophile center. Mostly reaction shown by Grignard reagent are exothermic.

Q2. Inversion of configuration is 50% in S_n1.Explain?

Ans 1: In S_n1 mechanism the nucleophile attacks when the leaving group had already gone,carbocation is a planner specie allowing the nucleophile to attack on it from both the direction with equal ease,We therefore observe 50% inversion of configuration and 50% reternation of configuration.

Q3. Why the reactivity of Alkyl halides depend upon Bind Energy.

Ans 1: The strength of bond shows that iodo compound with the weakest bonds would be the most reactive one whlefluor compound will be the leat reactive i.e the order of reactivity of alkyl halid should be R-I>R-Br>R-Cl>R-F

Q4. Write down any two method for the preparation of Alkyl halides?

Ans 1: 1.Alchol may be converted to the corrosponding alkyl halide by the action of halogen acid in the presence of $ZnCl_2$ which acts as catslyst.
2.Alcholo reacts with th;onyl chloride in pyrindine as a solvent to give alkyl chlorides which escape leaving behind the pure product.

Q5. What is Grignard reagent ?How it is prepared?

Ans 1: R-Mg-X known as Grignard reagent ,These are derivatives of alkyl halided belonging to class of organo metallic compounds .Grignard reagent was first prepared by Victor Grignard in 1900. Grignard reagent is so important in organic synthesis that almost all the classes of organic compounds can be prepared from them,Due to their importance and organic compounds can be prepared from them.

Q6. Why does SN_2mechanism give a product with inversion of configuration?

Ans 1: In nucleophilic substitution bimolecular the direction of attack of the attaching nucleophile is from the side which is opposite to the leaving group .In order to give the the nucleophile enough room to attack ,the substrate carbon atom changes it state of hybridization from tetrahedral to planner sp^2.

Q7. Define Nucleophile.

Ans 1: Nucleophile means nucleus loving ,It has an unshared electron paired available for bonding and in most cases it is basic in character,It may have negatively charged or neutral.

Q8. Why alkyl halides are more reactive than alkanes?

Ans 1: An alkyl halides molecule consists of two parts,an alkyl group with a partial positive charge on the carbon atom attached to halogen atom and the halide atom with partial negative charge,While alkanes have no partial position or negative charged sites in their molecules.Halogens atom attached to alkyl groups is more electronegative which makes the alkyl and halide weak bonds.

Q9. Discuss E2 mechanism.

Ans 1: In E2 mechanism the nucleophile attacks and the leaving group leaves at the same time with formation of carbon carbon double bond.

Q10. What are primary and tertiary Alkyl Halides?

Ans 1: In a primary alkyl halide halogen atom is attached with carbon which is further attached to one or more carbon atom.In a tertiary alkyl halide halogen atom is attached with a carbon which is further attached to three carbon atom.
