Chemistry - 12th Class Chemistry Chapter 9 Short Questions Preparation

Q1. Predict major product of bromination of nitrobenzene.

Ans 1: m-bromonitrobenzene is the major product of bromination of nitrobenzene because nitro group on benzene is meta directing .

Q2. What happens when Acidified $KMnO_4$is added to Methyl Benzene and Ethylbenzene?

Ans 1: Alkyl benzenes re readily oxidized by acidified $KMnO_4$.In these reaction alkyl groups are oxidizedkeeping the benzenering intact.

Q3. What is the general pattern of reactivity of benzene towards electrophone?

Ans 1: The highly stable delocalized electron of benzene ring not radley available for the nucleophilic attack like the electrons of alkenes.Therefore the electron of benzene ring do not assist in the attack of weal electrophiles,It means that more powerful electrophiles are required to penetrate and break the continuous sheath of electron cloud in benzene.

Q4. What objective were raised on Kekule formula of Benzene?

Ans 1: Kekula formula with three double bonds demands of high degree of unsaturation from benzene while usually it exhibits a saturated character,This benzene yields substitution products readily and from addition products .Benzene is also very stable compound.

Q5. Define two reaction which confirm presence of three double bonds in benzene ring.

Ans 1: 1.Benzene is reduced to cyclohexane on heating at high temperature which hydrogen in the presence of Pt in an acidic solvent or Ni at 200 degree as a catalyst.
2.Benzene reacts with chlorine and bromine in the presence of sunlight to give addition products ,hexachlorobenzene or hexabromobenzene.

Q6. How will you prepare the following compound from benzene in two steps?m-chloronitrobenzene.

Ans 1: The introduction of NO group in benzene ring is called Nitration,The nitration of benzene takes place when it is heated with a 1:1 mixture of concat 50-55 degree.

Q7. Define resonance energy?What is the resonance energy of benzene?

Ans 1: Benzene is more stable than the hypothetical 1,3,5-cyclohexatriene by 150.5 kj/mole.This difference between amount of heat is actually released and that calculated on the basis of the Kekule structure is called Resonance Energy Benzene shows the phenomenon of resonance which makes it more stable than others.In benzene electrons are delocalized making it a very stable molecule.The resonance energy of benzene is 150.5 kj/mole

Q8. How benzene is converted into malic acid by catalytic oxidation?

Ans 1: Benzene ring is determine when it is strongly heated with air in the presence of V_2O_5as a catalyst and maleic acid is obtained.

Q9. Justify that Ethene is more reactive than C_6H_6.

Ans 1: The highly sable ,delocalized electron of benzene ring not readily available for the nucleophilic attack like the electron of alkenes,therefore the electrons of benzune ring do not assist in the attack of weak electrophiles.

Q10. What is Wurtz -Fritting reaction?

Ans 1: The Wurtz reaction for the synthesis of alkanes was extended by Fitting in 1864 to the synthesis of alyl aromatic hydrocarbons.