

## Chemistry - 12th Class Chemistry Chapter 9 Short Questions Preparation

Q1. Write down nitration and sulphonation of benzene?

**Ans 1:** The introduction of NO<sub>2</sub>group in benzene ring is called Nitration,.The nitration of benzene takes place when it is heated with a 1:1 mixture of conc.HNO<sub>3</sub>and conc.Sulphuric at 50-55 degree acid reacts with nitrir acid to generate nitronium ion.

Q2. 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.

Q3. Why benzene is less reactive than alkenes although it has three pi bonds in it?

**Ans 1:** Benzene is extraordinary stable molecule, This stability is due to the extensive delocalization of pi electron. The unhybridized orbital partially overlap to form a continue sheath of electron cloud, enveloping above and below the six carbon carbon sigma bonds of the ring,

Q4. What are monocyclic and polycyclic aromatic Hydrocarbons?

**Ans 1: Monocyclic**: Aromatic hydrocarbons containing one benzene ring in their molecules are called monocyclic aromatic hydrocarbons e.g benzene,toluene phenol,aniline benzoic acid,benzaldehyde and benzene sulphonic acid.

**Ans 2: Polycyclic:**Aromatic hydrocarbons containing two or more benzene rings in their molecules are called monocyclic aromatic hydrocarbons.

Q5. 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 .

Q6. Justify that Ethene is more reactive than C<sub>6</sub>H<sub>6</sub>.

**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.

Q7. What is resonance?

Ans 1: The possibility of different pairing schemes of valence electrons of atom is called resonance and the different thus arranged

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Q8. Define two reaction which show that Benzene is an unsaturated hydrocarbons?

**Ans 1:** Benzene is reduced to cyclohexane on heating at high temperature with hydrocarbons in the presence if Pt in an acidic solvent or Ni at 200 Degree as a catalyst, This reaction show that benzene is Un-saturated compound.

Halogenation: Benzene reacts with chlorine and bromine in the presence of sunlight to give addition products ,hexechlorobenezene or hexebromobenzene.

Q9. What are aromatic hydrocarbons? Give two example.

Ans 1: The carbocyclic compounds containing at least one benzene ring,six carbon atoms with three alternate double and single bonds are called aromatic hydrocarbons. These bonds are usually shown in the form of a circle. Examples: Toluene, Phenol and Nitrobenzene.

Q10. What happens when Acidified KMnO<sub>4</sub>is added to Methyl Benzene and Ethylbenzene?

Ans 1: Alkyl benzenes re readily oxidized by acidified KMnO<sub>4.In these</sub> reaction alkyl groups are oxidizedkeeping the benzenering intact.