Chemistry - 12th Class Chemistry Full Book Short Questions Preparation

Q1. 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.

Q2. Describe factor of acidic strength of oxyacids of halogens?

Ans 1:

1. Number of oxygen atoms attached to the oxyacid halogens.
2. oxidation state of hydrogen in oxyacid of halogens.
3. Tendency to lose proton from oxyacid of halogens.

Q3. 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.

Q4. What is the difference between aldhydes an ketones?

Ans 1: Aldehydes: In aldehydes,the cabonyl group is bonded to at leat one hydrogen atom,and so occurs at the end or a chain,An aldehyde can be represented by the general formula.

Ans 2: Ketones: In ketones ,the carbonyl group is bonded to two carbons atoms and so it occurs within a chain,A ketone may be represented by the general formula.

Q5. What is metamerism?

Ans 1: Isomerism arises due to the unequal distribution of carbon atom on either side of the functional group ,Such compound belong to the same homologous series.

Q6. Why the lattice energy of Fluorides is greater than Chlorides?

Ans 1: Due to small size of fluoride ions(f),there will be a better overlap of orbitals and consequently leads to shorter and stronger bonds with other elements.Ionic fluorides have higher lattice energies than the chlorides and the value is responsible for the insolubility of the fluorides in water.Due to low dissociation energy of fluorine molecule,it is highly reactive.The other halogens react slowly under similar conditions.The fluorides are,however more stable with respect to dissociation into elements.

Q7. Give name and formulas of Oxyacids of Phosphorous.

Ans 1: **Name Formula**
Phosphoric acid H_3PO_3
Orthophosphoric acid H_3PO_4
Pyrophosphoric acid $H_4P_2O_7$
Metaphosphoric acid HPO_3

Q8. Mention four uses of ethene.

Ans 1: i) For the manufacture of polythene,a plastic material used of making toys,cables,bags,boxes etc.

Ans 2: ii) For a artificial ripening of the fruits.

Ans 3: iii) As a general anesthetic.

Ans 4: iv) For preparing Mustard gas a chemical used in Word War I,the name comes from its mustard like odour,it is not a gas,but a high boiling liquid that is dispersed as a mist of tiny droplest.

Q9. Solution of Na_2O in water is alkaline.Justify the statement.

Ans 1: Alkali metal oxides dissolve in water to give alkaline solutions.For Example:
Na_2O+H_2O----------->2NaOH

Ans 2: The reaction of alkali metal oxide with water is an acid-base reaction.The reaction involved the decomposition of water molecule by an oxide ion as:
$O^{2-}+ H_2O$ -------->$2OH^-$

Q10. Why the metals are good conductors?

Ans 1: Metal are good conductors due to the presence of relatively loose electrons in the outermost shell of the element and ease of their movement in the solid lattice.

Q11. Why 1^{st}electron affinity is negative and $2^{nd}$is positive?

Ans 1: Energy is usually released when electronegative elements absord the first electron and E.A in such case is expressed in negative figure,as in the case of halogens,when a second electron is added to a uni negative ion,the incoming electrons is repelled by the already present negative charge and energy in this process is represented by +ve sign

Ans 2: $O+e^-$------>O^- $E.A_1$=-141 kj mol^{-1}
O^-+e^-------->O^{-2} $E.A_2$=+780 kj mol^{-1}

Q12. 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.

Q13. What is the cause of paramagnetic behaviour?

Ans 1: Paramagnetic behaviour is caused by the presence of unpaired electrons in an atom.molecule or ion because there is magnetic moment a associated with the spinning electrons,It increase with the increase in the number of unpaired electrons.

Q14. Justify that $H_2SO_4$is a king of chemicals?

Ans 1: H_2SO_4has many applications in daily life,laboratories,industries etc.What's common to petrol,fertilizers,cars and soap? They,like a lot of other things require sulfuric acid to be made.That's why sulfuric acid is called the king of chemicals.

Q15. 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.

Q16. Lonic radii of negative ion is always bigger in size than its parent atom.Why?

Ans 1: The reason is that addition of one or more electrons in the shell of a neutral atom enhances repulsion between the electrons causing expansion of the shell.For example the radius of fluorine atom is 72 pm and that of the fluoride ion F ion is 136 pm.

Q17. Name different forms of iron and which is the purest.

Ans 1: Pig iron or case iron : 2.5 to 4.5% Carbon
Wrought iron: 0.12 to 0.25 carbon
Steel : 0.25 - 2.5% Carbon
Purest form of iron is Wrought iron.

Q18. What are the common bleaching agent used in paper industry in Pakistan?

Ans 1: IN Pakistan ,bleaching is done with chlorine dioxide or sodium hypochlorite and hydrogen peroxide.

Q19. Why hydroxyl group in ortho and para directing?

Ans 1: Hydroxyl group release electron to the benzene ring .there by facilities the availability of electron to the electrophiles at ortho and para position.This result in the increase chemical reactivity of benzene ring towards electrophiles,The benzene ring can offer more than one position the new incoming group.

Q20. Ethanol has higher boiling point than diethyl ether.

Ans 1: Ethanol has higher boiling point than diethyl ether because ethanol has strong hydrogen bonding in molecule while ether don't show hydrogen bonding with its molecule.