

Chemistry - 12th Class Chemistry Chapter 12 Short Questions Preparation

Q1. What is Formalin?

Ans 1: Methyl alcohol is oxidized to gaseous formaldehyde which is absorbed in water, The resulting mixture is called formalin. Formalin is a mixture of 40% formaldehyde, 8% methyl alcohol and 52% water.

Q2. Write down mechanism of Cannizzaro reaction?

Ans 1: The hydroxide ion acts as a nucleophile. It attacks the electrophilic carbonyl carbon to form a complex anion.

Q3. Explain one method of formation of formaldehyde from methyl alcohol.

Ans 1: Formaldehyde is prepared in the laboratory by passing a mixture of methyl alcohol vapour and air over platinumized asbestos or copper or silver catalyst at 300°C. Acetaldehyde is prepared in the laboratory by the oxidation of ethyl alcohol with acidified sodium dichromate solution.

Q4. Fehling solution reacts with aldehydes to give red ppt, Justify it?

Ans 1: Aliphatic aldehydes form a brick red precipitate with Fehling solution. To an aldehyde solution, Fehling solution is added and boiled. A brick red precipitate of cuprous oxide is formed. Ketones do not give this test.

Q5. Addition of HCN on aldehydes and ketones is a base catalyzed reaction?

Ans 1: Hydrogen cyanide adds to aldehydes and ketones to form cyanohydrins. The reaction is carried out by adding slowly a mineral acid to an aqueous solution of sodium cyanide. The acid generates HCN from sodium cyanide in situ.

Q6. What is haloform reaction?

Ans 1: Acetaldehyde and methyl ketones react with halogens in the presence of sodium hydroxide to give haloform. This reaction is called haloform reaction. The term haloform is used to distinguish acetaldehyde from other aldehydes.

Q7. Describe the mechanism of base catalyst nucleophilic addition to a carbonyl compound?

Ans 1: A base catalyzed nucleophilic addition will take place with a strong nucleophilic reagent which has a general mechanism.

Q8. How will you distinguish between ethanal and propanal?

Ans 1: Ethanal forms a yellow precipitate of iodoform with an alkaline solution of iodine. Propanal will not give this test.

Q9. What is sodium bisulphate test?

Ans 1: Sodium bisulphate test: Aldehydes and small methyl ketons form a crystalline white precipitate with saturated sodium bisulphite solution.

Q10. Define Aldol condensation.

Ans 1: Aldehydes and ketons possessing α -hydrogen atoms react with cold dilute solution of an alkali to form addition products known as aldols. The name aldols is given to the products because they contain both aldehyde and alcohol functional groups. In this process two molecules of the same carbonyl compound condense to form an aldol.
