NATIONAL ACADEMY FOR LEARNING, BENGALURU
CHEMISTRY

Grade: 12 ISC **Type of Assessment: WS**
Topic: Alcohols **No. of Pages: 2**

1. Propan-2-ol on reaction with iodine and sodium hydroxide gives _____ precipitate and the reaction is called _____test.

2. A mixture of conc. HCl and anhydrous ZnCl2 is called _____ which shows maximum reactivity with _____ alcohol.

3. Bleaching powder, on treatment with ethanol or acetone gives _____. This is an example of _____ reaction

4. In the dehydration of alcohols to alkenes by heating with concentrated sulphuric acid, the initiation step is: (1) formation of carbocation (2) formation of an ester (3) protonation of alcohol molecule (4) elimination of water

5. When acetone is treated with Grignard's reagent, followed by hydrolysis, the product formed is: (1) Secondary alcohol (2) Tertiary alcohol (3) Primary alcohol (4) Aldehyde

6. When acetaldehyde is treated with Grignard reagent followed by hydrolysis, the product formed is: (1) Primary alcohol (2) Secondary alcohol (3) Carboxylic acid (4) Tertiary alcohol

7. Reaction between acetone and methyl magnesium chloride, followed by hydrolysis will give: (1) tert-butyl alcohol (2) iso-butyl alcohol (3) iso-propyl alcohol (4) sec-butyl alcohol

8.Ethyl alcohol when reacted with PCl_5 gives a compound (A). When compound (A) is treated with alc. KOH, compound (B) is formed along with KCl and H_2O.

(i) The compound (A) is: (a) $C_2H_4Cl_2$ (b) CH_3CHO (c) C_2H_5Cl (d) CH_3OH
(ii) The compound (B) is: (a) C_2H_2 (b) C_2H_4 (c) C_2H_6 (d) C_2H_5OH

9. An unknown alcohol is treated with Lucas reagent to determine whether the alcohol is primary, secondary or tertiary.

(i) Which alcohol reacts fastest and by what mechanism? (a) Tertiary alcohol by SN 2 (b) Secondary alcohol by SN 1 (c) Tertiary alcohol by SN 1 (d) Secondary alcohol by SN 2
(ii) What is the chemical composition of the Lucas reagent used above? (a) Anhydrous zinc chloride in concentrated HCl (b) Anhydrous aluminium chloride in concentrated HCl (c) Anhydrous lead chloride in concentrated HCl (d) Anhydrous barium chloride in concentrated HCl

10.Write the mechanism of acid dehydration of ethanol to yield ethene.

11. How will you obtain the following? (Give balanced equation)

a. Ethyl acetate from ethanol.
b. Iodoform from ethanol
c. Propan–2–ol from Grignard's reagent
d. Ethylamine to ethyl alcohol
e. Ethyl alcohol is treated with thionyl chloride.
f. Ethanol from formaldehyde

12. Write the chemical equations for the dehydration of ethanol with conc. H_2SO_4 at 140°C and 170°C.

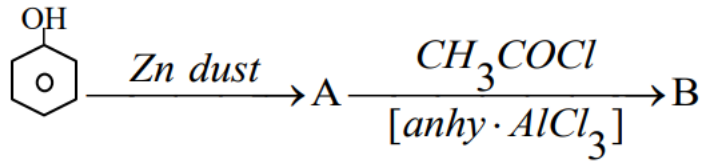
13.Give one chemical test each to distinguish between the following pairs of compounds:

a. Ethanol and acetic acid
b. Propan-1-ol and propan-2-ol
c. Methanol and ethanol
d. Phenol and propan-2-ol

14.

Identify the compounds A and B in the given reactions:

(1) $C_2H_5OH \xrightarrow[\Delta]{Cu} A \xrightarrow{dil.NaOH} B$

(2) 

15. Give reason:

a. Alcohols have higher boiling points than those of corresponding alkanes.
b. Alcohols are more soluble in water than hydrocarbons of comparable molecular masses.

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