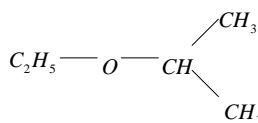


## ALCOHOLS, PHENOLS and ETHERS

1. The correct of reactivity of hydrogen halides with ethyl alcohol is [E-2008]

- 1) HF > HCl > HBr > HI                      2) HCl > HBr > HF > HI  
3) HBr > HCl > HI > HF                      4) HI > HBr > HCl > HF



2. The IUPAC name of is [E-2008]

- 1) ethoxypropane1                                      2) 1,1 - dimethyl ether  
3) 2- ethoxy isopropane                              4) 2- ethoxy propane

3. The functional groups present in 'salol' are [E-2007]

- 1)  $-\text{NH}_2$  and  $-\text{OR}$                                       2) OH and  $-\text{COR}$   
3)  $-\text{NH}_2$  and  $-\text{COOH}$                                       4)  $-\text{OH}$  and  $-\text{COOR}$

4. Hybridisation of oxygen in diethyl ether is [E-2007]

- 1) sp                                      2)  $\text{sp}^2$                                       3)  $\text{sp}^3$                                       4)  $\text{sp}^3\text{d}$

5. Which of the following compounds when heated with CO at and 500 atm pressure in presence of forms ethyl propionate? [E-2006]

- 1)  $\text{C}_2\text{H}_5\text{OH}$                                       2)  $\text{CH}_3\text{OCH}_3$                                       3)  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$                                       4)  $\text{CH}_3\text{OC}_2\text{H}_5$

6. When compound X is oxidised by acidified potassium dichromate, compound Y is formed. Compound Y on reduction with gives X,X and Y respectively are [E-2006]

- 1)  $\text{C}_2\text{H}_5\text{OH}$ ,  $\text{CH}_3\text{COOH}$                                       2)  $\text{CH}_3\text{COCH}_3$ ,  $\text{CH}_3\text{COOH}$   
3)  $\text{C}_2\text{H}_5\text{OH}$ ,  $\text{CH}_3\text{COCH}_3$                                       4)  $\text{CH}_3\text{CHO}$ ,  $\text{CH}_3\text{COCH}_3$

7. Ethyl chloride reacts with sodium ethoxide to form a compound A. Which of the following reactions also yields A ? [E-2006]

- 1)  $\text{C}_2\text{H}_5\text{Cl}$ ,  $\text{KOH}(\text{alc.})$ ,  $\Delta$                                       2)  $2\text{C}_2\text{H}_5\text{OH}$ ,  $\text{conc. H}_2\text{SO}_4$ ,  $140^\circ\text{C}$   
3)  $\text{C}_2\text{H}_5\text{Cl}$ ,  $\text{Mg}(\text{dry ether})$                                       4)  $\text{C}_2\text{H}_2$ ,  $\text{dil. H}_2\text{SO}_4$ ,  $\text{HgSO}_4$

8.  $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow[\text{step-1}]{\text{Cl}_2} \text{CH}_3\text{CHO} \xrightarrow[\text{step-2}]{3\text{Cl}_2} \text{Cl}_3\text{CCHO}$  [E-2006]

In above reactions the role of in step - 1 and step - 2 respectively is

- 1) oxidation, chlorination                                      2) reduction, chlorination  
3) oxidation, addition                                      4) reduction, substitution

9. Identify A and B in the following reactions :

[E-2005]



- 1)  $A = C_2H_2, B = C_2H_6$                       2)  $A = C_2H_5Cl, B = C_2H_4$   
 3)  $A = C_2H_4, B = C_2H_5Cl$                 4)  $A = C_2H_5Cl, B = C_2H_5Cl$

10. In which of the following reactions the product is an ether ?

[E-2005]

- 1)  $C_6H_6 + CH_3COCl / \text{anhydrous } AlCl_3$   
 2)  $C_2H_5Cl + \text{aq. KOH}$   
 3)  $C_6H_6 + C_6H_5COCl / \text{anhydrous } AlCl_3$   
 4)  $C_2H_5Cl + C_2H_5ONa$

11. In the reaction,  $C_2H_5OH \xrightarrow[300^\circ C]{\text{vapour, Cu}} X$  The molecular formula of X is

[E-2005]

- 1)  $C_4H_6O$                       2)  $C_4H_{10}O$                       3)  $C_2H_4O$                       4)  $C_2H_6$

12. Which one of the following is a secondary alcohol?

[E-2004]

- 1) 2-methyl - 1 - propanol                      2) 2-methyl -2-propanol  
 3) 2-butanol                                      4) 1-butanol

13. The IUPAC name of an unsymmetrical ether with the molecular formula,  $C_4H_{10}O$  is

[E-2004]

- 1) ethoxy propane    2) methoxy ethane    3) ethoxy ethane    4) methoxy propane

14. Identify A and B in the following reaction  $C_2H_5Cl \xrightarrow{A} C_2H_5OH \xleftarrow{B} C_2H_5Cl$

[E-2004]

- 1) A = aqueous KOH; B = AgOH  
 2) A = alcoholic KOH /; B = aqueous NaOH  
 3) A = aqueous NaOH; B = AgNO<sub>2</sub>  
 4) A = AgNO<sub>2</sub>; B = KNO<sub>2</sub>

15. In the reaction,  $C_2H_5OC_2H_5 + CO \xrightarrow[150^\circ C, 500 \text{ atm pressure}]{BF_3} X$ , What is X ?

[E-2003]

- 1) Diethyl carbonate                      2) Ethyl carbonate  
 3) Diethyl peroxide                      4) Ethyl propionate

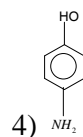
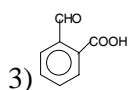
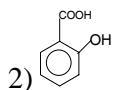
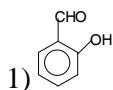
16. Which one of the following gases is liberated when ethyl alcohol is heated with methyl magnesium iodide ?

[E-2003]

- 1) Methane                                      2) Ethane                                      3) Carbon dioxide                                      4) Propane

17. Which one of the following compounds gives aspirin on reacting with acetic anhydride in the presence of conc.  $H_2SO_4$  ?

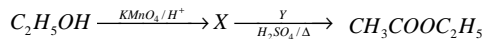
[E-2003]



18. The products formed when diethyl ether is reacted with cold HI are [E-2002]

- 1)  $C_2H_5I + C_2H_5OH$     2)  $2C_2H_5I + H_2O$     3)  $2C_2H_5OH$     4)  $C_2H_5-O-C_2H_5 + H_2O$

19. In the following reaction, X and Y respectively are [E-2002]



- 1)  $CH_3OH, C_2H_5OH$     2)  $CH_3CHO, CH_3OH$     3)  $CH_2=CH_2, CH_3COOH$     4)  $CH_3COOH, C_2H_5OH$

20. Which one of the following is a secondary alcohol? [E-2002]

- 1) 2-methyl - 2 propanol    2) 1-propanol  
3) 1-butanol    4) 2 - pentanol

21. Which one of the following pairs of compounds are functional isomers ? [E-2001]

- 1)  $CH_3CH_2CH_2OH, (CH_3)_2CHCH_2OH$     2)  $CH_3CH_2CH_2CH_2OH, (CH_3)_2CHCH_2OH$   
3)  $CH_3CH_2CH_2OH, CH_3CH_2CH_2Cl$     4)  $CH_3CH_2CH_2OH, CH_3-O-CH_2CH_3$

22. Ethanol, when reacted with gave A, and HCl. A reacts with silver nitrite to form B (major product) and AgCl. A and B are respectively [E-2001]

- 1)  $C_2H_5Cl$  and  $C_2H_5OC_2H_5$     2)  $C_2H_6$  and  $C_2H_5OC_2H_5$   
3)  $C_2H_5Cl$  and  $C_2H_5NO_2$     4)  $C_2H_6$  and  $C_2H_5NO_2$

23. Chlorethane reacts with X to form diethyl ether. What is X ? [E-2001]

- 1) NaOH    2)  $H_2SO_4$     3)  $C_2H_5ONa$     4)  $Na_2S_2O_3$

24. 3 moles of ethanol react with one mole of phosphorus tribromide to form 3 moles of bromoethane and one mole of X .Which of the following is X ? [E- 2001]

- 1)  $H_3PO_4$     2)  $H_3PO_2$     3)  $HPO_3$     4)  $H_3PO_3$

25. Absolute alcohol (100% alcohol) is prepared by distilling rectified spirit over [E-2001]

- 1) Na    2)  $CaCl_2$     3) Mg    4)  $Mg(OC_2H_5)_2$

26. Which of the following is Lucas reagent ? [E-2000]

- 1) Ammoniacal  $AgNO_3$     2)  $Br_2 / CCl_4$   
3)  $ZnCl_2 / conc.HCl$     4) Cold alk.  $KMnO_4$

27. Which of the following is a tertiary alcohol? [E-2000]

- 1)  $\begin{array}{c} CH_3-CH-CH_2OH \\ | \\ CH_3 \end{array}$     2)  $CH_3CH_2CH_2CH_2OH$   
3)  $\begin{array}{c} CH_3CH_2-CH-OH \\ | \\ CH_3 \end{array}$     4)  $\begin{array}{c} CH_3 \\ | \\ CH_3-C-OH \\ | \\ CH_3 \end{array}$

28. HOCH<sub>2</sub>. CH<sub>2</sub>OH on heating with periodic acid gives (AIPMT 2009)  
 1) 2 HCOOH      2) CHO – CHO      3) 2HCHO      4) 2CO<sub>2</sub>
29. CH<sub>3</sub>OC<sub>2</sub>H<sub>5</sub> and (CH<sub>3</sub>)<sub>3</sub>COCH<sub>3</sub> are treated with hydroiodic acid. The fragments after reaction obtained are (AIIMS 2007)  
 1) CH<sub>3</sub>I + C<sub>2</sub>H<sub>5</sub>OH ; (CH<sub>3</sub>)<sub>3</sub>C-I + CH<sub>3</sub>OH    2) CH<sub>3</sub>OH + C<sub>2</sub>H<sub>5</sub>I ; (CH<sub>3</sub>)<sub>3</sub>C-I + CH<sub>3</sub>OH  
 3) CH<sub>3</sub>OH + C<sub>2</sub>H<sub>5</sub>I ; (CH<sub>3</sub>)<sub>3</sub>C-OH + CH<sub>3</sub>I    4) CH<sub>3</sub>I + C<sub>2</sub>H<sub>5</sub>OH ; CH<sub>3</sub>I + (CH<sub>3</sub>)<sub>3</sub>C-OH
30. Identify 'Z' in the following sequence      Ethanol  $\xrightarrow{PBr_3}$  X  $\xrightarrow{alc. KOH}$  Y  $\xrightarrow[\text{ii) } H_2O, \text{ heat}]{\text{i) } H_2SO_4, 25^\circ C}$  Z (AIPMT 2009)  
 1) CH<sub>2</sub> = CH<sub>2</sub>      2) CH<sub>3</sub>CH<sub>2</sub>OH      3) CH<sub>3</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>3</sub>      4) None
31. In the reaction  $CH_3 - \overset{CH_3}{\underset{|}{C}} - CH_2 - O - CH_2 - CH_3 + HI \xrightarrow{\text{heat}} \dots$  Which of the following compounds will be formed ? (AIPMT 2008)  
 1)  $CH_3 - \overset{CH_3}{\underset{|}{CH}} - CH_2OH + CH_3CH_2I$       2)  $CH_3 - \overset{CH_3}{\underset{|}{CH}} - CH_2I + CH_3CH_2OH$   
 3)  $CH_3 - \overset{CH_3}{\underset{|}{CH}} - CH_3 + CH_3CH_2OH$       4)  $CH_3 - \overset{CH_3}{\underset{|}{CH}} - CH_2OH + CH_3CH_3$

**KEY**

- 1) 4    2) 4    3) 4    4) 3    5) 3    6) 1    7) 2    8) 1    9) 4    10) 4  
 11) 3    12) 3    13) 4    14) 1    15) 4    16) 1    17) 2    18) 1    19) 4    20) 4  
 21) 4    22) 3    23) 3    24) 4    25) 4    26) 3    27) 4    28) 3    29) 1    30) 2  
 31) 1