

## CHEMISTRY WORKSHEET (C.B.S.E XII)

**Topic :** Alcohols, Phenol and Ether

1. Write Equations for preparation of propan-2-ol, from (a) an alkene (b) a Grignard reagent
2. How do you account for the fact that unlike phenol, 2, 4-dinitrophenol and 2, 3, 6-trinitrophenol are Soluble in aqueous solution of sodium carbonate?
3. Give the equation of reaction of preparation of phenol from cumene.
4. How will you distinguish between the following pairs of chemical compounds :-  
(i)  $C_2H_5OH$  and (ii)  $CH_3OH$  and  $C_2H_5OH$  (iii) 1-Propanol and 2-propanol
5. Write short notes on (i) Reimer-Tiemann reaction (ii) Kolbe reaction
6. What is meant by : (i) Absolute alcohol (ii) Methylated spirit  
(iii) Power alcohol (iv) Rectified spirit
7. Give the mechanism of cleavage of ethyl methyl ether with HI.
8. How does diethyl ether react with: (i)  $PCl_5$  (ii)  $H_2SO_4$  (iii) HI
9. How does anisole react with : (i) HI at 373 K (ii) bromine in  $CCl_4$  (iii) conc.  $HNO_3/H_2SO_4$
10. Why ethers have a low boiling point ?
11. Account for the following : (i) Phenol has a smaller dipole moment than methanol  
(ii) Phenols do not give protonation reactions readily
12. Explain why phenols do not undergo substitution of the -OH group like alcohols.
13. write the series of reactions which would convert (i) ethanol into propanone  
(ii) phenol into benzaldehyde.
14. Give the structural formulae and names of the products when phenol is treated with an excess of aqueous bromine.
15. Give chemical test to distinguish between phenol and ethanol in seemingly similar solutions
16. Describe simple chemical test to distinguish between diethyl ether and propanol.
17. Write the steps and conditions involved in the following conversions:

(i) Acetophenone to 2-phenyl -2-butanol (ii) Propene to acetone

18. (a) Complete the following sequences of reactions by supplying X, Y and Z:

(I) (X) (y) (Z) 2,3-Dimethylbutane

(ii) (X) (Y) picric acid

(iii) (z) NaOH, Fuse (X)

(b) Give IUPAC names of the following compounds:

(i)  $\text{CH}_3\text{CHCH}_2\text{OH}$  (ii)  $\text{CH}_2$

19. Complete the following equations:

(i)  $\text{N}_2^+\text{Cl}^- + \text{H}_2\text{OH}$  (ii)  $\text{C}_2\text{H}_5\text{Br} + \text{C}_2\text{H}_5\text{ONa}$

20.  $\text{ONa} + \text{CO}_2 \xrightarrow{400\text{ K}, 4-7\text{ atm}}$

21.  $\text{OH} + \text{Br}_2$

22.  $\text{C}_2\text{H}_5\text{OH} + \text{CH}_3\text{MgI}$

23.  $\text{CH}_3\text{C}(\text{CH}_3)\text{CH}_2\text{CH}_3 \xrightarrow{\text{Conc. H}_2\text{SO}_4}$  ?

24.  $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_3$

25.  $\text{CH}_3$

26.  $\text{CH}_2=\text{CH}_2 \xrightarrow{\text{Cl}_2, \text{H}_2\text{O}}$  ?  $\xrightarrow{\text{Na}_2\text{CO}_3, \text{H}_2\text{O}}$  ?

27.  $\text{OH}$

28. X  $\xrightarrow{\text{Y}}$   $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_3$  Z

29. X  $\xrightarrow{\text{CH}_3\text{CH}_2\text{CH}_3, \text{Cu}/575\text{ K}}$  Y Z

30.  $\text{CH}_2=\text{CH}_2 + \text{CO} + \text{H}_2 \xrightarrow{\text{Co}(\text{CO})_4}$  ?

31.  $\text{CH}_3\text{CH}=\text{CH}_2$