Date Planned : __ / __ / __	Daily Tutorial Sheet-1	Expected Duration : 45 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration :_____

1. An organic liquid 'A' containing C, H and O with boiling point 78°C, possessing a rather pleasant odour, on heating with concentrated sulphuric acid gives a gaseous product 'B' with the empirical formula, CH_2. 'B' decolourises bromine water as well as alkaline permanganate solution and takes up one mole of H_2 (per mole of B) in presence of finely divided nickel at high temperature. Identify the substances A and B. **(1979)**

2. Ethyl alcohol is heated with conc. H_2SO_4. The product formed is : **(1980)**

(A) $CH_3COOC_2H_5$ **(B)** C_2H_2 **(C)** C_2H_4 **(D)** C_2H_6

3. Which of the following is soluble in water ? **(1980)**

(A) CS_2 **(B)** C_2H_5OH **(C)** CCl_4 **(D)** $CHCl_3$

4. The compound which reacts fastest with Lucas reagent at room temperature is : **(1981)**

(A) butan-2-ol **(B)** butan-1-ol

(C) 2-methyl propan-1-ol **(D)** 2-methyl propan-2-ol

5. A compound 'X' containing C, H and O is unreactive towards sodium. It does not add with bromine. On refluxing with an excess of HI, 'X' yields only one organic product 'Y'. 'Y' on hydrolysis yields a new compound 'Z' which can be converted into 'Y' by reaction with red phosphorus and iodine. The compound 'Z' on oxidation with potassium permanganate gives a carboxylic acid. The equivalent weight of acid is 60. What are the compounds 'X', 'Y' and 'Z'? Write chemical equations leading to the conversion of 'X' to 'Y'. **(1981)**

6. Diethyl ether on heating with conc. HI give two moles of : **(1983)**

(A) ethanol **(B)** iodoform **(C)** ethyl iodide **(D)** methyl iodide

7. The yield of a ketone when a secondary alcohol is oxidized is more than the yield of aldehyde when a primary alcohol is oxidized. (True/False) **(1983)**

8. An alcohol A, when heated with conc. H_2SO_4 gives an alkene B. When B is bubbled through bromine water and the product obtained is dehydrohalogenated with excess of sodamide, a new compound C is obtained. The compound C gives D when treated with warm dilute H_2SO_4 in presence of $HgSO_4$. D can also be obtained either by oxidizing A with $KMnO_4$ or from acetic acid through its calcium salt. Identify A, B, C and D. **(1983)**

9. State the conditions under which the following preparations are carried out. Give necessary equations which need not be balanced. **(1983)**

(i) Ethanol from acetylene

(ii) Lead tetraethyl from sodium-lead alloy

(iii) Methyl chloride from aluminium carbide

10. An industrial method of preparation of methanol is : **(1984)**

(A) catalytic reduction of carbon monoxide in presence of $ZnO - Cr_2O_3$

(B) by reacting methane with steam at 900°C with nickel catalyst

(C) by reducing formaldehyde with $LiAlH_4$

(D) by reacting formaldehyde with aqueous sodium hydroxide solution

11. When phenol is treated with excess of bromine in water, it gives : **(1984)**

(A) m-bromophenol **(B)** o- and p-bromophenol

(C) 2, 4-dibromophenol **(D)** 2, 4, 6-tribromophenol

12. The acidity of phenol is due to the _____ of its anion. **(1984)**

13. A.....diol has two hydroxyl groups on .....carbon atoms. **(1985)**

14. Write down the main product of the following reaction : Ethanol $\xrightarrow{I_2 / NaOH}$ **(1985)**

15. Give a chemical test to distinguish between methanol and ethanol. **(1985)**

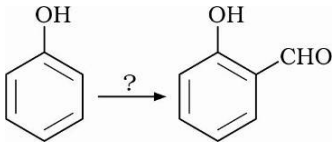
16. Suggest a reason for the large difference between the boiling points of butanol and butanal, although they have almost the same solubility in water. **(1985)**

17. A compound of molecular formula C_7H_8O is insoluble in water and dilute sodium bicarbonate but dissolve in dilute NaOH solution and gives a characteristic colour with $FeCl_3$. On treatment with bromine water, it readily gives a precipitate of $C_7H_5OBr_3$. Write down the structure of the compound. **(1985)**

18. Give reason in one or two sentences for the following : **(1985)**

"o-nitrophenol is steam volatile whereas p-nitrophenol is not.

19. Complete the following with appropriate reagents : **(1986)**



20. Sodium ethoxide is prepared by reacting ethanol with aqueous sodium hydroxide. (True/False) **(1986)**

21. How may be the following transformation be carried out (in not more than four steps) ? **(1986)**
"Ethyl alcohol to vinyl acetate."

22. Hydrogen bonding is maximum in : **(1987)**

(A) ethanol **(B)** diethyl ether **(C)** ethyl chloride **(D)** triethyl amine

23. Give reasons for the following : Phenol is an acid but it does not react with sodium bicarbonate. **(1987)**

24. In CH_3CH_2OH, the bond that undergoes heterolytic cleavage most readily is : **(1988)**

(A) C – C **(B)** C – O **(C)** C – H **(D)** O – H

25. Arrange the following in increasing order of boiling point: *n*-butane, *n*-butanol, *n*-butylchloride, *iso*-butane. **(1988)**