Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 60 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration :_____

26. Phenol reacts with bromine in carbon disulphide at low temperature to give : **(1988)**

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

(C) p-bromophenol **(D)** 2, 4, 6-tribromophenol

27. **Statement-I** : Solubility of alcohols in water decreases with increase in molecular weight. **(1988)**

Statement-II : The relative proportion of the hydrocarbon part in alcohols increases with increasing molecular weight which permit enhanced hydrogen bonding with water.

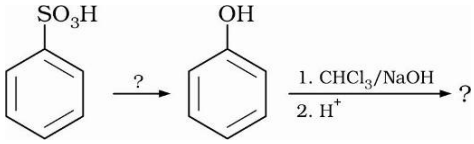
(A) Statement-I is correct, Statement-II is correct, Statement-II is the correct explanation of Statement-I

(B) Statement-I is correct, Statement-II is correct, Statement-II is not the correct explanation of Statement-I

(C) Statement-I is correct, Statement-II is incorrect

(D) Statement-I is incorrect, Statement-II is correct

28. Complete the following reaction : **(1988)**



29. Formation of phenol from chlorobenzene under abnormal condition is an example of _____ aromatic substitution. **(1989)**

***30.** Aryl halides are less reactive towards nucleophilic substitution reaction as compared to alkyl halide due to: **(1990)**

(A) the formation of less stable carbonium ion

(B) resonance stabilisation

(C) longer carbon halogen bond

(D) sp^2-hybridised carbon bonded to halogen

***31.** The products of reaction of alcoholic silver nitrite with ethyl bromide are : **(1991)**

(A) ethane **(B)** ethene **(C)** nitroethane **(D)** ethyl nitrite

32. An organic compound containing C, H and O exists in two isomeric forms A and B. An amount of 0.108 g of one of the isomers gives on combustion 0.308 g of CO_2 and 0.072 g of H_2O. A is insoluble in NaOH and $NaHCO_3$ while B is soluble in NaOH. A reacts with concentrated HI to give compounds C and D. C can be separated from D by the ethanolic $AgNO_3$ solution and D is soluble in NaOH. B reacts readily with bromine water to give compound E having molecular formula, $C_7H_5OBr_3$. Identify A, B, C, D and E with justification and give their structures. **(1991)**

33. The product of combustion of an aliphatic thiol (RSH) at 298 K are : **(1992)**

(A) $CO_2(g)$, $H_2(g)$ and $SO_2(g)$ **(B)** $CO_2(g)$, $H_2O(\ell)$ and $SO_2(g)$

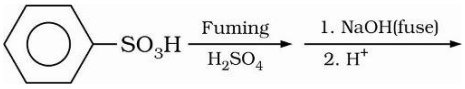
(C) $CO_2(\ell)$, $H_2O(\ell)$ and $SO_2(g)$ **(D)** $CO_2(g)$, $H_2O(\ell)$ and $SO_2(\ell)$

34. Aliphatic ethers are purified by shaking with a solution of ferrous salt. Comment upon the statement. **(1992)**

35. Compound X (molecular formula, C_5H_8O) does not react appreciably with Lucas reagent at room temperature but gives a precipitate with ammoniacal silver nitrate. With excess of MeMgBr, 0.42 g of X gives 224 mL of CH_4 at STP. Treatment of X with H_2 in presence of Pt catalyst followed by boiling with excess HI, gives n-pentane. Suggest structure for X and write the equation involved. **(1992)**

36. Amongst the three isomers of nitrophenol, the one that is least soluble in water is _____. **(1992)**

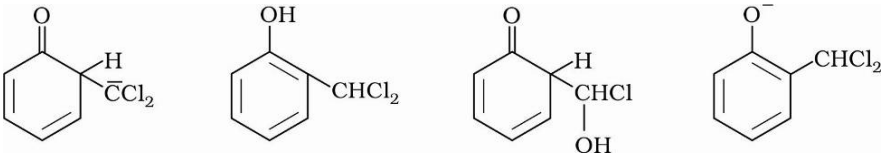
37. Complete the following with appropriate structures : **(1992)**



38. Identify $C(C_4H_8)$ which when treated with H_2O/H_2SO_4 gives $C_4H_{10}O$ which cannot be resolved into optical isomers. **(1993)**

39. When t-butanol and n-butanol are separately treated with a few drops of dilute $KMnO_4$, in one case only the purple colour disappears and a brown precipitate is formed. Which of the two alcohols gives the above reaction and what is the brown precipitate ? **(1994)**

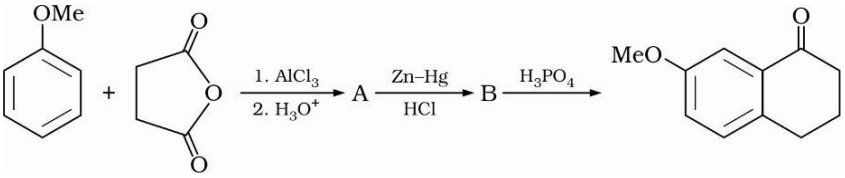
***40.** When phenol is reacted with $CHCl_3$ and NaOH followed by acidification, salicylaldehyde is formed. Which of the following species are involved in the above mentioned reaction as intermediate ? **(1995)**



(A) **(B)** **(C)** **(D)**

41. A compound $D(C_8H_{10}O)$ upon treatment with alkaline solution of iodine gives a yellow precipitate. The filtrate on acidification gives a white solid $E(C_7H_6O_2)$. Write the structures of D, E and explain the formation of E. **(1996)**

42. Predict the structures of the intermediates/product in the following reaction sequence : **(1996)**



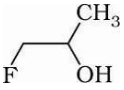
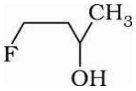
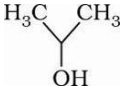
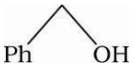
43. An optically active alcohol $A(C_6H_{10}O)$ absorbs two moles of hydrogen per mole of A upon catalytic hydrogenation and gives a product B. The compound B is resistant to oxidation by CrO_3 and does not show any optical activity. Deduce the structures of A and B. **(1996)**

44. 3, 3-Dimethylbutan-2-ol loses a molecule of water in the presence of concentrated sulphuric acid to give tetramethylethylene as a major product. Suggest a suitable mechanism. **(1996)**

45. Glycerine contains one.....hydroxyl group. **(1997)**

46. 2,2-dimethyloxirane can be cleaved by acid (H^+). Write mechanism. **(1997)**

47. The order of reactivity of the following alcohols towards concentrated HCl is : **(1997)**

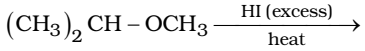
I.  **II.**  **III.**  **IV.** 

(A) I > II > III > IV **(B)** I > III > II > IV

(C) IV > III > II > I **(D)** IV > III > I > II

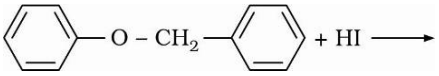
48. Give reason for the following: Although phenoxide ion has more number of resonating structures than benzoate ion, benzoic acid is a stronger acid than phenol. **(1997)**

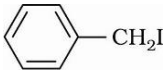
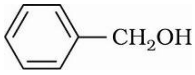
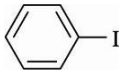
49. Write the structures of the products :



(1998)

***50.** The following ether, when treated with HI produces : **(1999)**



(A)  **(B)**  **(C)**  **(D)**