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

1. During dehydration of alcohols to alkenes by heating with concentrated H_2SO_4 the initiation step is : **(2003)**

(A) protonation of alcohol molecule **(B)** formation of carbocation

(C) elimination of water **(D)** formation of an ester

2. An ether is more volatile than an alcohol having the same molecular formula. This is due to : **(2003)**

(A) dipolar character of ethers

(B) alcohols having resonance structures

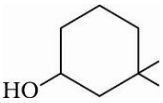
(C) intermolecular hydrogen bonding in ethers

(D) intermolecular hydrogen bonding in alcohols

3. Among the following compounds which can be dehydrated very easily? **(2004)**

(A) $CH_3CH_2CH_2CH_2CH_2OH$ **(B)** $CH_3CH_2CH_2\underset{\displaystyle OH}{\underset{|}{C}}HCH_3$

(C) $CH_3CH_2\underset{\displaystyle OH}{\underset{|}{\overset{\displaystyle CH_3}{\overset{|}{C}}}}CH_2CH_3$ **(D)** $CH_3CH_2\underset{\displaystyle CH_3}{\underset{|}{C}}HCH_2CH_2OH$

4. The IUPAC name of the compound  is : **(2004)**

(A) 3, 3-dimethyl-1-hydroxy cyclohexane **(B)** 1, 1-dimethyl-3-hydroxy cyclohexane

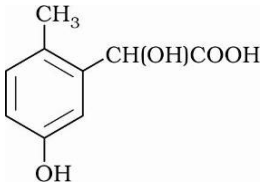
(C) 3, 3-dimethyl-1-cyclohexanol **(D)** 1, 1-dimethyl-3-cyclohexanol

5. For which of the following parameters the structural isomers C_2H_5OH and CH_3OCH_3 would be expected to have the same values ? (Assume ideal behaviour) **(2003)**

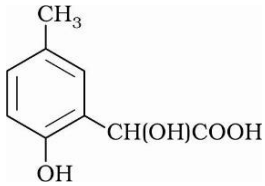
(A) Heat of vaporisation **(B)** Vapour pressure at the same temperature

(C) Boiling points **(D)** Gaseous densities at the temperature and pressure

6. p-cresol reacts with chloroform in alkaline medium to give the compound A which adds hydrogen cyanide to form the compound B. The latter on acidic hydrolysis gives chiral carboxylic acid. The structure of the carboxylic acid is : **(2005)**



(A)



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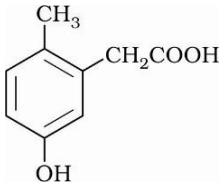

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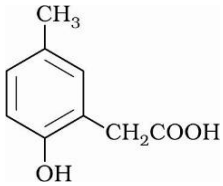


(D)

7. The best reagent to convert pent-3-en-2-ol into pent-3-en-2-one is : **(2005)**

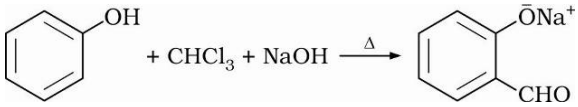
(A) acidic permanganate **(B)** acidic dichromate

(C) chromic anhydride in glacial **(D)** pyridinium chlorochromate

8. HBr reacts with $CH_2 = CH - OCH_3$ under anhydrous conditions at room temperature to give : **(2006)**

(A) CH_3CHO and CH_3OH **(B)** $BrCH_2CHO$ and CH_3OH

(C) $BrCH_2 - CH_2 - OCH_3$ **(D)** $H_3C - CHBr - OCH_3$

9. 

The electrophile involved in the above reaction is : **(2006)**

(A) dichloromethyl cation $(CH\overset{\oplus}{C}l_2)$ **(B)** dichlorocarbene $(:CCl_2)$

(C) trichloromethyl anion $(\overset{\ominus}{C}Cl_3)$ **(D)** formyl cation $(\overset{\oplus}{C}HO)$

10. Phenyl magnesium bromide reacts with methanol to give : **(2006)**

(A) a mixture of anisole and Mg(OH)Br **(B)** a mixture of benzene and Mg(OMe)Br

(C) a mixture of toluene and Mg(OH)Br **(D)** a mixture of phenol and Mg(Me)Br

11. In the given sequence of reactions, $CH_3CH_2OH \xrightarrow{P+I_2} A \xrightarrow[ether]{Mg} B \xrightarrow{HCHO} C \xrightarrow{H_2O} D$ the compound D is : **(2007)**

(A) propanal **(B)** butanal **(C)** n-butyl alcohol **(D)** n-propyl alcohol

12. Phenol, when it first reacts with concentrated sulphuric acid and then with concentrated nitric acid, gives : **(2008)**

(A) nitrobenzene **(B)** 2, 4, 6-trinitrobenzne

(C) o-nitrophenol **(D)** phthalic acid

13. The major product obtained on interaction of phenol with sodium hydroxide and carbon dioxide is : **(2009)**

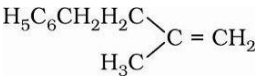
(A) benzoic acid **(B)** salicylaldehyde **(C)** salicylic acid **(D)** phthalic acid

14. From amongst the following alcohols the one that would react fastest with conc. HCl and anhydrous $ZnCl_2$, is: **(2010)**

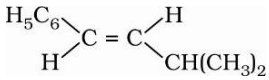
(A) 1-butanol **(B)** 2-butanol

(C) 2-methylpropan-2-ol **(D)** 2-methylpropanol

15. The main product of the following reaction is : $C_6H_5CH_2CH(OH)CH(CH_3)_2 \xrightarrow{Conc.\ H_2SO_4}$ **(2010)**



(A)



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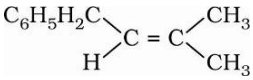

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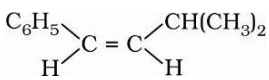


(D)

16. Sodium ethoxide has reacted with ethanoyl chloride. The compound that is produced in this reaction is : **(2011)**

(A) diethyl ether **(B)** 2-butanone

(C) ethyl chloride **(D)** ethyl ethanoate

17. Phenol is heated with a solution of mixture of KBr and $KBrO_3$. The major product obtained in the above reaction is : **(2011)**

(A) 2-bromophenol **(B)** 3-bromophenol

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

18. Ortho-nitrophenol is less soluble in water than p- and m-nitrophenols because : **(2012)**

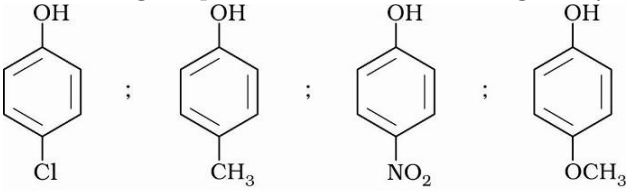
(A) o-nitrophenol shows intramolecular H-bonding

(B) o-nitrophenol shows intermolecular H-bonding

(C) melting point of o-nitrophenol is lower than those of *m*- and *p*-isomers

(D) o-nitrophenol is more volatile in steam than those of *m*- and *p*-isomers

19. Arrange the following compounds in order of decreasing acidity : **(2013)**



(I) **(II)** **(III)** **(IV)**

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

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

20. The most suitable reagent for the conversion of $R-CH_2-OH \longrightarrow R-CHO$ is : **(2014)**

(A) PCC **(B)** $KMnO_4$ **(C)** CrO_3 **(D)** $K_2Cr_2O_7$