Quiz: Alcohols, Phenols and Ethers 1

Q1: Which compound is formed when sodium phenoxide reacts with ethyl iodide?

A) Phenetole
B) Ethyl phenyl alcohol
C) Phenol
D) None of the above

Q2: The reagent that differentiates primary, secondary and tertiary alcohols is Lucas reagent (conc. HCl + ZnCl2). Which of the following reacts fastest?

A) 1 deg alcohol
B) 2 deg alcohol
C) 3 deg alcohol
D) Phenol

Q3: Phenol gives violet color with FeCl3. What is the principal reason?

A) Hydrogen bonding
B) Formation of complex
C) No reaction
D) Oxidation

Q4: When ethanol is dehydrated with Conc.\ H2SO4, the major product is:

A) Ethane
B) Ethene
C) Ethanol sulfate
D) Acetaldehyde

Q5: Which product is formed on oxidation of benzyl alcohol with PCC?

A) Benzoic acid
B) Benzaldehyde
C) Benzene
D) Benzyl chloride

Q6: Which reagent is best for Williamson Ether Synthesis?

A) Alkoxide + alkyl halide
B) Alcohol + acid chloride
C) Ether + acid
D) Alcohol + base only

Q7: In the reaction C6H5OH + Br2 -> which of the following products form?

A) 2,4,6-tribromophenol
B) Bromobenzene
C) 4-bromophenol
D) No reaction

Q8: Ether cleavage by HI: R-O-R' + HI -> major products depend on carbocation stability. Which carbon is attacked first?

A) More substituted
B) Less substituted
C) Either equally
D) No reaction

Q9: Which of the following alcohols will give a positive iodoform test?

A) Methanol
B) Ethanol
C) Tert-butyl alcohol
D) Phenol

Q10: The acidic strength order among these compounds: water, phenol, ethanol, acetic acid is:

A) H_2O < Phenol < C_2H_5OH < CH_3COOH
B) C_2H_5OH < H_2O < Phenol < CH_3COOH
C) C_2H_5OH < H_2O < CH_3COOH < Phenol
D) H_2O < C_2H_5OH < Phenol < CH_3COOH

Q11: The product of the reaction: $ROH + PCl_5 \rightarrow RCl + HCl + POCl_3$ is:

A) Alkyl chloride
B) Alkyl alcohol
C) Phenol
D) Ester

Q12: Consider the reaction: $C_2H_5OH \rightarrow C_2H_5Cl$. This is an example of:

A) Substitution
B) Elimination
C) Oxidation
D) Reduction

Q13: Which compound has the highest boiling point?

A) Diethyl ether
B) Ethanol
C) Ethyl methyl ether
D) Ethane

Q14: What is the IUPAC name of $CH_3CH(OH)CH_2OH$?

A) Propane-1,2-diol
B) Propane-2,3-diol
C) Butane-2,3-diol
D) None

Q15: Which reagent converts alcohol to alkyl chloride?

A) $SOCl_2$
B) PCl_5
C) HCl + $ZnCl_2$
D) All of the above

Q16: The order of decreasing acidic strength: p-nitrophenol, phenol, m-nitrophenol is:

A) p-nitrophenol > o-nitrophenol > m-nitrophenol
B) m-nitrophenol > p-nitrophenol > phenol
C) phenol > m-nitrophenol > p-nitrophenol
D) o-nitrophenol > p-nitrophenol > m-nitrophenol

Q17: Ether CH3-O-CH2CH3 has bond angle C-O-C approximately:

A) 104.5 deg
B) 109.5 deg
C) 120 deg
D) 90 deg

Q18: Which of the following reactions is of nucleophilic substitution?

A) ROH + SOCl2
B) RCH=CH2 + H2O
C) C6H5OH + Br2
D) ROH -> Alkene

Q19: Phenol reacts with diazonium salt to form:

A) Azo compound
B) Ester
C) Ether
D) Alkane

Q20: Which of the following does not give a positive iodoform test?

A) Ethanol
B) Propanone
C) 2-propanol
D) Ethanal

Q21: Which of the following compounds has the highest boiling point?

A) Propan-1-ol
B) Butan-1-ol
C) Butan-2-ol
D) Pent-1-ol

Q22: Reaction of phenol with zinc dust gives:

A) Benzene
B) Toluene
C) Benzaldehyde
D) Benzoic acid

Q23: Which enzyme converts glucose to ethanol?

A) Zymase
B) Invertase
C) Maltase
D) Diastase

Q24: Which ether is used as an anaesthetic?

A) Diethyl ether
B) Dimethyl ether
C) Ethyl methyl ether
D) Diphenyl ether

Q25: The C-O-H bond angle in alcohols is slightly less than tetrahedral angle due to:

A) Repulsion between bond pairs
B) Repulsion between lone pairs
C) Hydrogen bonding
D) Large size of oxygen

Q26: When glycerol is treated with excess HI, the major product is:

A) 2-iodopropane
B) Propene
C) 1,2,3-triiodopropane
D) Allyl iodide

Q27: Arrange the following in increasing acidic strength: phenol, cyclohexanol, 2,4,6-trinitrophenol, ethanol.

A) Cyclohexanol < ethanol < phenol < 2,4,6-trinitrophenol
B) Ethanol < cyclohexanol < phenol < 2,4,6-trinitrophenol
C) Cyclohexanol < ethanol < 2,4,6-trinitrophenol < phenol
D) Phenol < ethanol < cyclohexanol < 2,4,6-trinitrophenol

Q28: Which of the following undergoes fastest oxidation with dichromate?

A) 1-propanol
B) 2-propanol
C) tert-butyl alcohol
D) Phenol

Q29: The product of the reaction: CH3CH(OH)CH3 -> is:

A) Propanol
B) Acetone
C) Propanone
D) No reaction

Q30: Which one of the following gives a positive Tollens' test?

A) Ethanol
B) Propanal
C) 2-propanone
D) Tert-butyl alcohol

Q31: Ether cleavage by HI for CH3OCH2CH3 yields:

A) Methanol + ethyl iodide
B) Methyl iodide + ethanol
C) Ethanol + ethane
D) Methyl iodide + ethyl iodide

Q32: Which reagent converts phenol to sodium phenoxide?

A) HCl
B) NaOH
C) ZnCl2
D) PCl5

Q33: The IUPAC name of CH3CH2OCH2CH3 is:

A) Ethyl ether
B) Diethyl ether
C) Methoxyethane
D) Ethanoxyethane

Q34: Which alcohol would react fastest with Lucas reagent?

A) 1-butanol
B) 2-butanol
C) tert-butanol
D) Ethanol

Q35: Phenol on reaction with Br2 in water gives:

A) Bromobenzene
B) 2,4,6-tribromophenol
C) Bromophenol
D) No reaction

Q36: Which alcohol does not give iodoform test?

A) Ethanol
B) Isopropanol
C) 2-butanol
D) Methanol

Q37: Product of Williamson ether synthesis from sodium ethoxide and CH3I is:

A) Ethyl methyl ether
B) Dimethyl ether
C) Diethyl ether
D) Ethanol

Q38: Which molecule has highest boiling point?

A) Diethyl ether
B) Ethanol
C) Methoxyethane
D) Ethane

Q39: Which reagent can oxidize primary alcohol to acid?

A) PCC
B) KMnO4
C) LiAlH4
D) Pd/H2

Q40: Phenol reacts with Na_2CO_3 to give:

A) Sodium phenoxide
B) No reaction
C) Phenol carbonate
D) Phenyl carbonate

Q41: Dehydration of secondary alcohol results in:

A) Symmetrical ether
B) Unsymmetrical ether
C) Alkene
D) Ester

Q42: Which test identifies phenols?

A) Tollens' test
B) Lucas test
C) $FeCl_3$ test
D) Iodoform test

Q43: Which of these gives an aldehyde on oxidation?

A) 1-propanol with PCC
B) 2-propanol with $KMnO_4$
C) Tert-butanol with PCC
D) Methanol with PCC

Q44: Which ether is most easily cleaved by HI?

A) Methyl tert-butyl ether
B) Diethyl ether
C) Ethyl methyl ether
D) Dipropyl ether

Q45: Product of $C_6H_5OH + CO_2/NaOH$ -> followed by acidification is:

A) Salicylic acid
B) Phenol carbonate
C) Benzoic acid
D) No reaction

Q46: Order of increasing acidity: ethanol, phenol, acetic acid is:

A) Ethanol < phenol < acetic acid
B) Phenol < ethanol < acetic acid
C) Acetic acid < phenol < ethanol
D) Phenol < acetic acid < ethanol

Q47: In $CH_3CH_2Br + NaOCH_3$-> major product is:

A) Ethyl methyl ether
B) Methyl bromide
C) Ethanol
D) No reaction

Q48: Which compound yields 2,4,6-tribromophenol with bromine water?

A) Phenol
B) Aniline
C) Benzene
D) Toluene

Q49: The product of dehydration of CH3CH(OH)CH3 with conc. H2SO4 is:

A) Propane
B) Propene
C) Isopropyl sulfate
D) Acetone

Q50: Reaction of phenol with HNO3 gives mainly:

A) o-Nitrophenol
B) p-Nitrophenol
C) Mixed o- and p-nitrophenols
D) m-Nitrophenol