**KIIT WORLD SCHOOL**

**ASSIGNMENT**

**CLASS 12 CHEMISTRY**

**UNIT 11: ALCOHOLS, PHENOLS AND ETHERS**

**KNOWLEDGE BASED**

**Q1. Describe the following name reactions with equations:**

1. **Kolbe’s reaction**
2. **Reamer – Teimann reaction**
3. **Williamson synthesis**

**Q2. What is Lucas test? How is it useful?**

**Q3. How is Grignard reagent prepared? Why Grignard reagents should be prepared under anhydrous conditions?**

**Q4. Write the mechanism of the reaction of HI with methoxymethane.**

**Q5. What is absolute alchohol?**

**Q6. Why are ethers insoluble in water?**

**UNDERSTANDING BASED**

**Q7. Write the IUPAC name for the following compounds:**

1. **CH3NHCH2CH(NO2)CH3**
2. **(CH3)2C=CHCOCH3**
3. **CH3CH(CH3)CH2CH(OH)CH(CH3)CH2OH**
4. **CH2=CHCH(OH)CH2CH2CH3**
5. **C6H5CH2CH2OH**
6. **CH3CH(OH)CH(OH)CH2OH**

**Q8. Write the structure of the following organic compounds:**

1. **4-Methylpent-3-ene-2-one**
2. **P-methoxyacetophenone**
3. **1-phenylpropan-2-ol**
4. **2,6-dimethylphenol**
5. **2-methylpropan-2-ol**
6. **Hex-1-en-3-ol**

**Q9. Give reasons for the following:**

1. **P-nitrophenol boils at a higher temperature than 0-nitrophenol**
2. **O-nitrophenol has much lower solubility in water than m- or p- isomers.**
3. **Phenols are much more acidic than alcohols.**
4. **The boiling point of ethers are much lower than those of the alcohols of comparable molar masses.**
5. **Propanol has higher boiling point than that of butane.**
6. **Alcohols are comparatively more soluble in water than the corresponding hydrocarbons.**
7. **M-aminophenol is a stronger acid than o-aminophenol.**
8. **Alcohols act as weak bases.**
9. **Boiling point of ethanol is higher than that of methoxymethane.**

**Q10. Out of the benzene and phenol, which is more easily nitrated? Why?**

**Q11.How can you account for the miscibility of ethoxyethane in water?**

**Q12. Lower alchohols are soluble in water but higher are not. Why?**

**APPLICATION/SKILL**

**Q13. Describe a chemical test to distinguish between the following pairs:**

1. **Ethanol and phenol**
2. **1-propanol and 2-propanol**

**Q14. Explain the mechanism for the following:**

1. **Acid dehydration of ethanol to yield ethene**
2. **Acid catalysed hydration of alkenes to give alcohols**
3. **Phenol to salicylaldehyde**
4. **Dehydration of alcohols to give ethers**
5. **Methoxyethane to give ethyl iodide**

**Q15. How are the following conversions done?**

1. **Phenol to salicyaldehyde**
2. **Propene to propan-2-ol**
3. **Anisole to phenol**
4. **Phenol to 2,4,6-tribromophenol**
5. **Ethylmagnesium chloride to propan-1-ol**
6. **Benzyl chloride to benzyl alcohol**
7. **Methylmagnesium bromide to 2-methylpropan-2-ol**
8. **2-methylpropanol to 2-methylpropene**
9. **Phenol to picric acid**
10. **Phenol to benzophenone**

**Q16. Draw the structures and name the product formed if the following alcohols are oxidised. Assume that an excess of oxidising agent is used.**

1. **Butanol**
2. **But-2-en-1-ol**
3. **2-methylpropan-1-ol**

**HOTS**

**Q17. Sodium was added to diethyl ether but no reaction occurred. Why?**

**Q18. Which is a stronger acid- phenol or cresol? Why?**

**Q19. Explain why sodium metal can be used for drying diethyl ether but not ethyl alcohol.**

**Q20. An organic compound A having molecular formula C3 H6 on treatment with aq sulphuric acid gives B which on treatment with HCl/ZnCl2 gives C. the compound C on treatment with ethanolic KOH gives back the compound A. identify the compounds.**

**Q21. an aromatic compound A on treatment with CHCl3/KOH gives two compounds B and C. Both give the same compound D when distilled with Zn dust. Oxidation of D gives E having molecular formula C7H6O2. The sodium salt of E on heating with sodalime gives F which may also be obtained by distilling A with Zn dust. Identify A to F.**

**VBQ**

**Q22. In a slum area large number of people fell ill after drinking liquor sold by local vendor. Many people started vomiting, some complained of not being able to see properly and some other were unconscious. Ravi’s father also suffered from severe stomach ache after consuming liquor. Ravi calmed down his mother and helped her to call the ambulance for other people as well. He also informed the police.**

**i) mention the values shown by ravi.**

**ii) state the possible cause of poisoning by liquor.**

**iii) write the reaction shown by conversion of molasses to ethyl alcohol using yeast.**

**ATTEMPT ALL INTEXT AND BACK EXERCISE QUESTIONS OF NCERT**