

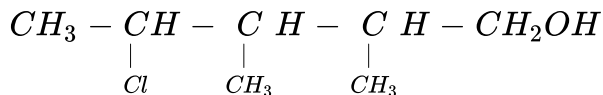
CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA CHEMISTRY (GUJRATI ENGLISH)

ALCOHOLS , PHENOLS AND ETHERS

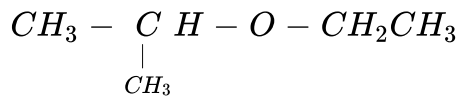
Example

1. Give IUPAC names of the following compounds :



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2. Give IUPAC names of the following compounds :



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3. Give IUPAC names of the following compounds :



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4. Give IUPAC names of the following compounds :



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5. Give the structures and IUPAC names of the products expected from the following reactions :

Catalytic reduction of butanal.

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6. Give the structures and IUPAC names of the products expected from the following reactions :

Hydration of propene in the presence of dilute sulphuric acid.

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7. Give the structures and IUPAC names of the products expected from the following reactions :

Reaction of propanone with methyl magnesium bromide followed by hydrolysis.

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8. Arrange the following sets of compounds in order of their increasing boiling points :

Pentan-1-ol, butan-1-ol, butan-2-ol, ethanol, propan-1-ol, methanol.



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9. Arrange the following sets of compounds in order of their increasing boiling points :

Pentan-1-ol, n-butane, pentanal, ethoxyethane.



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10. Arrange the following compounds in increasing order of their acid strength :

Propan-1-ol, 2,4,6-trinitrophenol, 3-nitrophenol, 3,5-dinitrophenol, phenol, 4-methylphenol

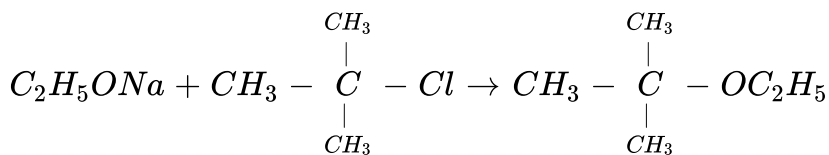
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11. Write the structures the major products expected from the following reactions :

- (a) Mononitration of 3-methylphenol
- (b) Dinitration of 3-methylphenol
- (c) Mononitration of phenyl methanoate.

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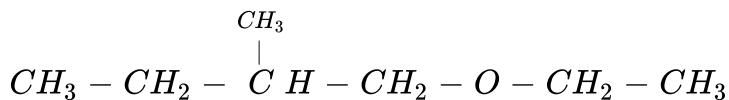
12. The following is not an appropriate reaction for the preparation of t-butylethyl ether.



- (i) What would be the major product of this reaction ?
- (ii) Write a suitable reaction for the preparation of t-butylethyl ether.

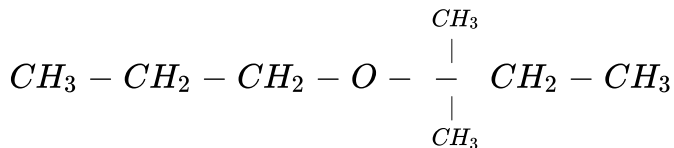
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13. Give the major products that are formed by heating of the following ethers with HI.



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14. Give the major products that are formed by heating of the following ethers with HI.



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15. Give the major products that are formed by heating of the following ethers with HI.



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Section A Questions

1. What are alcohols, phenols and ethers ? State the various applications of these compounds in day-to-day life ?

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Section A 11 1 Classification

1. Give classification of alcohols and phenols based on number of OH groups.

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2. Give classification of monohydric alcohols based on -OH group bonded to sp^3 and sp^2 carbon.



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3. Give classification of ethers.



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Section A 11 2 Nomenclature

1. Explain IUPAC naming of alcohols, phenols and ethers.



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Section A 11 3 Structures Of Functional Groups

1. Explain the structures of alcohols and phenols.



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2. Write a note on structure of ethers.

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Section A 11 4 Alcohols And Phenols

1. Give the preparation of alcohols from alkenes.

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2. Give preparation of alcohols from aldehydes and ketones.

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3. Give the preparation of alcohols from carboxylic acids and esters.

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4. Give commercial preparation of methanol and state its properties and uses.

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5. Give commercial preparation of ethanol. State its properties and uses.

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6. Give preparation of phenol from chloro benzene

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7. Write a note on Dow's process.

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8. Explain cumene process.

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9. Give preparation of phenol from benzene sulphonic acid and benzene diazonium chloride.

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10. Write a note physical properties of alcohols.

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11. Write a note on physical properties of phenols.

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12. Write a note on chemical properties of alcohols.

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13. Write a note on acidic nature of alcohols.

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14. Write a note on esterification reaction of alcohols.

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15. Write a note of acidic nature of phenol and compare its acidic strength with the alcohols.

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16. Write a note on acidic strength of substituted phenols.

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17. Explain dehydration of alcohols.

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18. Give the mechanism of dehydration alcohols.

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19. Write the reactions of alcohols with hydrogen halides

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20. Explain Lucas test.

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21. Give the reactions of alcohols with phosphorus halides.

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22. Write a note on oxidation of alcohols.

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23. Write a note on nitration reactions of phenols.

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24. Write a note on bromination of phenols.

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25. Write a note on Kolbe's reaction.

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26. Write a note on Reimer-Tiemann reaction.

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27. Give the oxidation and the reduction reactions of phenols.

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1. Give preparation of ethers from alcohols.

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2. Explain the intermolecular dehydration of alcohols. State the limitations of this method.

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3. Write a note on Williamson's ether synthesis

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4. Write a laboratory preparation of symmetrical and unsymmetrical ethers.

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5. Write a note on physical properties of ethers.

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6. Write a note on reaction of ethers with hydrogen halides.

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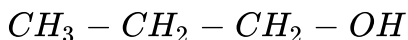
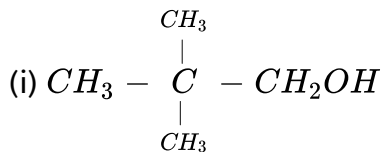
7. Write the mechanism of reaction of ethers with hydrogen halides.

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8. Write a note on electrophilic substitution reactions of anisole.

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1. Classify the following as primary, secondary and tertiary alcohols :

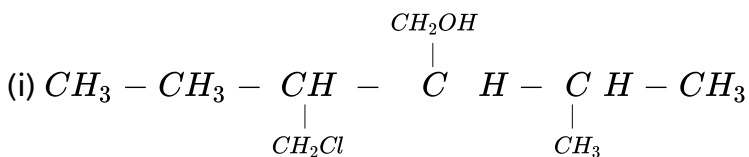


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2. Identify the allylic alcohols in the above (ii) and (vi) are allylic alcohols

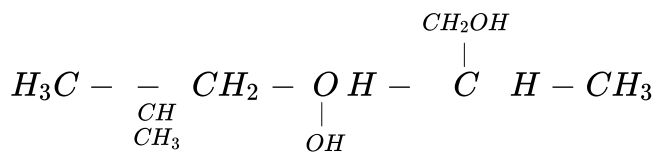
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3. Name the compound according to IUPAC system .



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4. Name the compound according to IUPAC system .



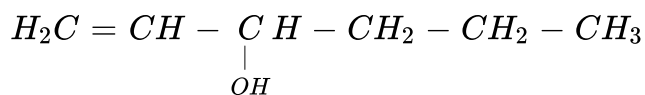
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5. Name the compound according to IUPAC system .



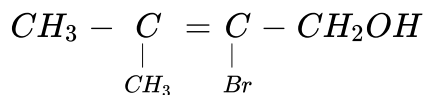
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6. Name the compound according to IUPAC system .



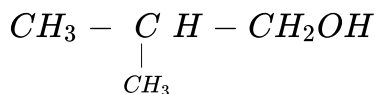
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7. Name the compound according to IUPAC system .



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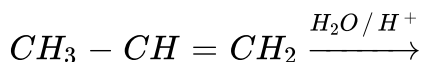
8. Show how are the following alcohols prepared by the reaction of a suitable Grignard reagent on methanol.



(ii) 

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9. Write the structures of the product of the following reaction



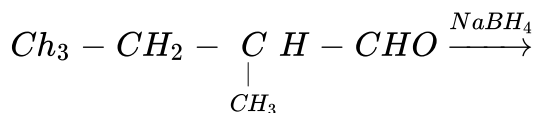
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10. Write the structures of the product of the following reaction



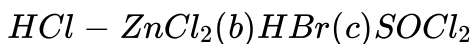
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11. Write the structures of the product of the following reaction



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12. Give the structures of the products you would expect when each of the following alcohol reacts with



(i) Butan-1-ol (ii) 2-Methylbutan-2-ol

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13. Predict the major product of acid -catalysed dehydration of Methylcyclohexanol

 [View Text Solution](#)

14. Predict the major product of acid -catalysed dehydration of Butan-1-ol

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15. Ortho and para nitrophenols are more acidic than phenol. Draw the reasoning structures of the corresponding phenoxide ions.

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16. Write the equation involved in the Reimer-Themann reaction.

 [View Text Solution](#)

17. Write the equation involved in the Kolbe's reaction

 [View Text Solution](#)

18. Write the reactions of Williamson's synthesis of 2-ethoxy-3-methylpentane starting from ethanol and 3-methylpentan-2-ol.

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19. Which of the following is an appropriate set of reactions for the preparation of 1-Methoxy-4-nitrobenzene and why ?



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20. Predict the product of the reaction



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21. Predict the product of the reaction



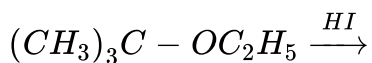
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22. Predict the product of the reaction



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23. Predict the product of the reaction



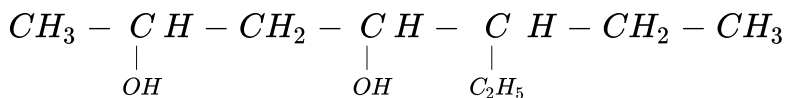
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Section C Textual Exercise

1. Write the IUPAC name of the $CH_3 - \underset{\underset{CH_3}{|}}{C}H - \underset{\underset{OH}{|}}{C}H - \overset{\overset{CH_3}{|}}{C} - CH_3$

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2. Write the IUPAC name of the



 [View Text Solution](#)

3. Write the IUPAC name of the $CH_3 - \underset{\underset{OH}{|}}{C}H - \underset{\underset{OH}{|}}{C}H - CH_3$

 [View Text Solution](#)

4. Write the IUPAC name of the $HO - CH_2 - \underset{\substack{| \\ OH}}{C}H - CH_2 - OH$

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5. Write the IUPAC name of the 

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6. Write the IUPAC name of the 

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7. Write the IUPAC name of the 

 [View Text Solution](#)

8. Write the IUPAC name of the 

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9. Write the IUPAC name of the $CH_3 - O - CH_2 - \underset{\substack{| \\ CH_3}}{C} H - CH_3$

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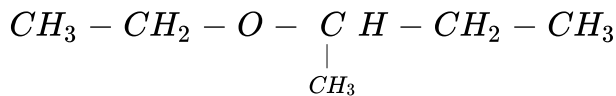
10. Write the IUPAC name of the $C_6H_5 - O - C_2H_5$

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11. Write the IUPAC name of the $C_6H_5 - O - C_7H_{15}(n^-)$

 [View Text Solution](#)

12. Write the IUPAC name of the



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13. Write structures of the compound whose IUPAC names are as follows

:

2-Methylbutane-2-ol



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14. Write structures of the compound whose IUPAC names are as

follows :

1-Phenylpropan-2-ol



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15. Write structures of the compound whose IUPAC names are as follows

:

3,5-Dimethylhexane-1,3,5-triol



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16. Write structures of the compound whose IUPAC names are as follows

:

2-3 Diethylphenol



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17. Write structures of the compound whose IUPAC names are as follows

:

1-Ethoxypropane



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18. Write structures of the compound whose IUPAC names are as follows

:

2-Ethoxy-3-methylpentane



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19. Write structures of the compound whose IUPAC names are as follows

:

Cyclohexylmethanol



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20. Write structures of the compound whose IUPAC names are as follows :

3-Cyclohexylpentan-3-ol



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21. Write structures of the compound whose IUPAC names are as follows :

Cyclopent-3-en-1-ol

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22. Write structures of the compound whose IUPAC names are as follows :

4-Chloro-3-ethylbutane-1-ol

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23. (i) Draw the structures of all isomeric alcohols of molecular formula $C_5H_{12}O$ and give their IUPAC names.

(ii) Classify the isomers of alcohols in question (3) (i) as primary, secondary and tertiary alcohols.

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24. Explain why propanol has higher boiling point than that of the hydrocarbon, butane ?

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25. Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain this fact.

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26. Give the structures and IUPAC names of monohydric phenols of molecular formula C_7H_8O .

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27. While separating a mixture of ortho and para nitrophenols by steam distillation, name the isomer which will be steam volatile. Give reason.

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28. Give the equations of reactions for the preparation of phenol from cumene.

 [View Text Solution](#)

29. Write chemical reaction for the preparation of phenol from chlorobenzene.

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30. You are given benzene, conc. H_2SO_4 and NaOH. Write the equations for the preparation of phenol using these reagents.



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31. Show how will you synthesize :

1-Phenylethanol from a suitable alkene.



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32. Show how will you synthesize :

Cyclohexylmethanol using alkyl halide by an S_N2 reaction.



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33. Show how will you synthesize :

Pentan-1-ol using suitable alkyl halide ?



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34. Explain why is ortho nitrophenol more acidic than ortho methoxyphenol ?

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35. Explain how does the -OH group attached to a carbon of benzene ring activate it towards electrophilic substitution ?

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36. Give equations of the following reactions :

Oxidation of propan-1-ol with alkaline $KMnO_4$ solution.

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37. Give equations of the following reactions :

Bromine in CS_2 with phenol.



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38. Give equations of the following reactions :

Dilute HNO_3 with phenol.



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39. Give equations of the following reactions :

Treating phenol with chloroform in presence of aqueous NaOH.



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40. Explain the following with an example.

(i) Kolbe's reaction.

(ii) Reimer-Tiemann reaction.

(iii) Williamson ether synthesis.

(iv) Unsymmetrical ether.



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41. How are the following conversions carried out?

Propane \rightarrow Propan-2-ol .



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42. How are the following conversions carried out?

Benzyl chloride \rightarrow Benzyl alcohol.



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43. How are the following conversions carried out?

Ethyl magnesium chloride \rightarrow Propan-1-ol.



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44. How are the following conversions carried out?

Methyl magnesium bromide \rightarrow 2-Methyl- propan-2-ol.

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45. Name the reagents used in the following reactions :

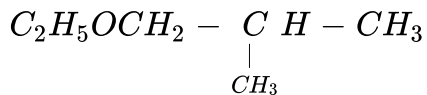
- (i) Oxidation of a primary alcohol to carboxylic acid.
- (ii) Oxidation of a primary alcohol to aldehyde. of phenol
- (iii) Bromination tribromophenol. to 2,4,6
- (iv) Benzyl alcohol to benzoic acid.
- (v) Dehydration of propan-2-ol to propene.
- (vi) Butan-2-one to butan-2-ol.

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46. Give reason for the higher boiling point of ethanol in comparison to methoxymethane.

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47. Give IUPAC names of the following ethers :



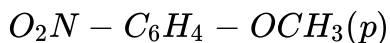
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48. Give IUPAC names of the following ethers :



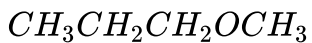
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49. Give IUPAC names of the following ethers :



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50. Give IUPAC names of the following ethers :



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51. Give IUPAC names of the following ethers :



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52. Give IUPAC names of the following ethers :



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53. Write the names of reagents and equations for the preparation of the following ethers by Williamson's synthesis :

(i) 1-Propoxypropane

(ii) Ethoxybenzene

(iii) 2-Methoxy-2-methylpropane

(iv) 1-Methoxyethane



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54. Illustrate with examples the limitations of Williamson synthesis for the preparation of certain types of ethers.



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55. How is 1-propoxypropane synthesised from propan-1-ol? Write mechanism of this reaction.



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56. Write the equation of the reaction of hydrogen iodide with :

(i) 1-propoxypropane

(ii) methoxybenzene and

(iii) benzyl ethyl ether.

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57. Explain the fact that in aryl alkyl ethers (i) the alkoxy group activates the benzene ring towards electrophilic substitution and (ii) it directs the incoming substituents to ortho and para positions in benzene ring.

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58. Write the mechanism of the reaction of HI with methoxymethane.

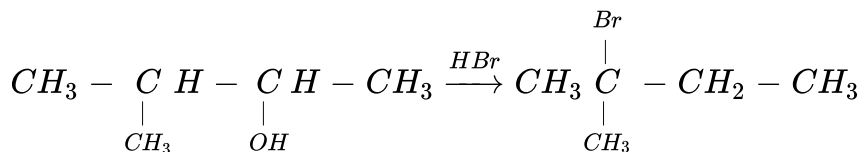
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59. Show how would you synthesis the following alcohols from appropriate alkenes ?



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60. When 3-methylbutan-2-ol is treated with HBr, the following reaction takes place :



Give a mechanism for this reaction

(Hint : The secondary carbocation formed in step-II rearranges to a more stable tertiary carbocation by a hydride ion shift from 3rd carbon atom).

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1. Mono-chlorination of toluene in a sunlight followed by hydrolysis with aq. NaOH yields

- A. o-Cresol
- B. m-Cresol
- C. 2,4- Dihydroxytoluene
- D. Benzyl alcohol

Answer: D

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2. How many alcohols with a molecular formula $C_4H_{10}O$ are chiral in nature?

- A. 1
- B. 2

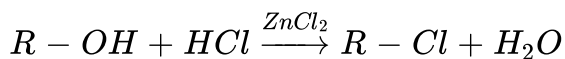
C. 3

D. 4

Answer: A

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3. What is the correct order of reactivity of alcohols in the following reaction ?



A. $1^\circ > 2^\circ > 3^\circ$

B. $1^\circ < 2^\circ > 3^\circ$

C. $3^\circ > 2^\circ > 1^\circ$

D. $3^\circ > 1^\circ > 2^\circ$

Answer: C

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4. CH_3CH_2OH can be converted into CH_3CHO by ...

- A. Catalytic hydrogenation
- B. Treatment with $LiAlH_4$
- C. Treatment with pyridinium chlorochromate
- D. Treatment with $KMnO_4$

Answer: C



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5. The process of converting alkyl halide into alcohols involves

- A. Addition reaction
- B. Substitution reaction
- C. Dehydrohalogenation reaction

D. Rearrangement reaction

Answer: B

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6. Which of the following compounds is aromatic alcohol ?



A. (A), (B), (C) and (D)

B. (A) and (D)

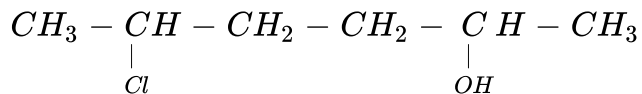
C. (B) and (C)

D. (A)

Answer: C

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7. Give the IUPAC name of the compound given below:



- A. 2-Chloro-5-hydroxyhexane
- B. 2-Hydroxy-5-chlorohexane
- C. 5-Chlorohexan-2-ol
- D. 2-Chlorohexan-5-ol

Answer: C



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8. IUPAC name of m-cresol is

- A. 3-methylphenol
- B. 3-chlorophenol
- C. 3-methoxyphenol

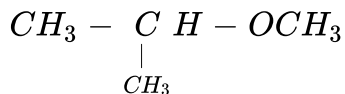
D. Benzene-1,2-diol

Answer: C



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9. IUPAC name of the compound



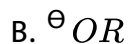
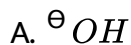
- A. 1-methoxy-1-methylethane
- B. 2-methoxy-2-methylethane
- C. 2-methoxypropane
- D. Isopropylmethyl ether

Answer: C



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10. Which of the following species can act as the strongest base ?

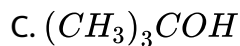
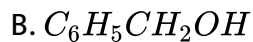
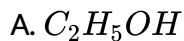


Answer: B



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11. Which of the following compounds will react with sodium hydroxide solution in water ?



D. C_2H_5OH

Answer: A

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12. Phenol is less acidic than

A. Ethanol

B. o-nitrophenol

C. o-methyl phenol

D. o-methoxyphenol

Answer: B

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13. Which of the following is most acidic ?

- A. Benzyl alcohol
- B. Cyclohexanol
- C. Phenol
- D. m-chlorophenol

Answer: D

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14. Mark the correct order of decreasing acidic strength of the following compounds:



- A. $V > IV > II > I > III$
- B. $II > IV > I > III > V$
- C. $IV > V > III > II > I$
- D. $V > IV > III > II > I$

Answer: B



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15. Mark the correct increasing order of reactivity of the following compounds with HBr / HCl



A. $I < II < III$

B. $II < I < III$

C. $II < III < I$

D. $III < II < I$

Answer: C



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16. Arrange the following compounds in increasing order of boiling point :

Propan-1-ol, Butan-1-ol, Butan-2-ol, Pentan-1-ol

A. Propan-1-ol, Butan-2-ol, Butan-1-ol, Pentan-1-ol

B. Propan-1-ol, Butan-1-ol, Butan-2-ol, Pentan-1-ol

C. Pentan-1-ol, Butan-2-ol, Butan-1-ol, Propan-1-ol

D. Pentan-1-ol, Butan-1-ol, Butan-2-ol, Propan-1-ol

Answer: D



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Section D Multiple Choice Questions Mcqs More Than One Options

1. Which of the following are used to convert $R - CHO$ to $R - CH_2OH$?

A. H_2 / Pd

B. $LiAlH_4$

C. $NaBH_4$

D. Reaction with R-MgX followed by hydrolysis.

Answer: A::B::C::D

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2. Which of the following reactions will yield phenol ?

A. 

B. 

C. 

D. 

Answer: A::B::C::D

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3. Which of the following reagents can be used to oxidize primary alcohols to aldehydes ?

- A. CrO_3 in anhydrous medium
- B. $KMnO_4$ in acidic medium
- C. Pyridinium chlorochromate
- D. Heat in presence of Cu at 573 K

Answer: A::C::D



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4. Phenol can be distinguished from ethanol the reaction with

- A. Br_2 / water
- B. Na

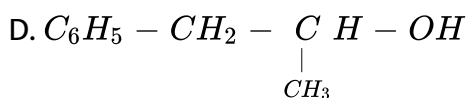
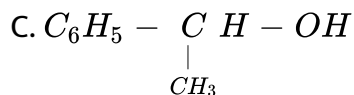
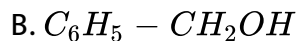
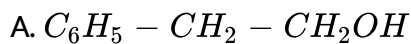
C. Neutral $FeCl_3$

D. All of the above

Answer: A:C

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5. Which of the following are benzylic alcohols?



Answer: B::C

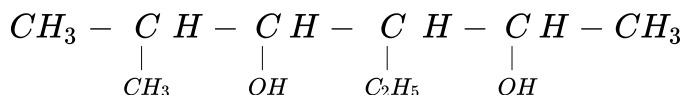
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Section D Short Answer Type Questions

1. What is the structure and IUPAC name of glycerol ?

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2. What is the IUPAC name of the compounds?



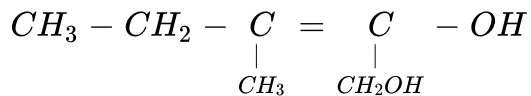
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3. What is the IUPAC name of the compounds?



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4. Write the IUPAC name of the compound given below:



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5. Name the factors responsible for the solubility of alcohols in water.

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6. What is denatured alcohol ?

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7. Suggest the reagent for the following conversion :



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8. Out of 2-chloroethanol and ethanol, which is more acidic and why ?

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9. Suggest a reagent for conversion of ethanol to ethanal.

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10. Suggest the reagent for conversion of ethanol to ethanoic acid.

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11. Out of o-nitrophenol and p-nitrophenol, which is more volatile ?

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12. Out of o-nitrophenol and o-cresol which is more acidic ?

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13. When phenol is treated with bromine water, white precipitate is obtained. Give the structure and the name of the compound formed.

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14. Arrange the following compounds in increasing order of acidity and give a suitable explanation. Phenol, o-nitrophenol, o-cresol.

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15. Alcohols react with active metals, e.g., Na, K etc. to give corresponding alkoxides. Write down the decreasing order of reactivity of sodium metal primary, secondary and tertiary,



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16. What happens when benzene diazonium chloride is heated with water ?



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17. Arrange the following compounds in decreasing order of acidity:



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18. Name the enzymes and write the reactions involved in the preparation of ethanol from sucrose by fermentation.



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19. How can propan-2-one be converted to tertiary butyl alcohol ?

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20. Write the structures of the isomers of alcohols with molecular formula $C_4H_{10}O$. Which of these will exhibit optical activity ?

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21. Explain why the -OH group in phenols more strongly held as compared to -OH group in alcohols?

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22. Explain why the nucleophilic substitution reactions are not very common in phenol ?

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23. Preparation of alcohols from alkenes involves the electrophilic attack on alkene carbon. Explain its mechanism.

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24. Explain why is $O=C=O$ non-polar while $R-O-R$ is polar ?

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25. Why is the reactivity of all three classes of alcohols with concentrated HCl and $ZnCl_2$ (Lucas' reagent) different ?

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26. Write the steps to carry out the conversion of phenol to aspirin.

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27. Nitration is an example of aromatic electrophilic substitution reaction and its rate depends upon the group already present in the benzene ring. Out of benzene and phenol, which one is more easily nitrated ?

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28. In Kolbe's reaction, instead of phenol, the phenoxide is treated with the carbon dioxide. Why ?

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29. Dipole moment of phenol is smaller than that of methanol. Why ?

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30. Ethers can be prepared by Williamson synthesis in which an alkyl halide is reacted with sodium alkoxide. Di-tertiary ether can't be prepared by this method. Explain.

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31. Why is the C-O-H bond angle in alcohol is slightly less than the tetrahedral angle whereas the C-O-C bond angle in ether is slightly greater ?

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32. Explain why are low molecular mass alcohols soluble in water?

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33. Explain why p-nitrophenol is more acidic than phenol ?



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34. Explain why the ethers and alcohols of comparable molecular mass have different boiling points ?

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35. The carbon-oxygen bond in phenol is slightly stronger than that in methanol. Why?

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36. Arrange water, ethanol and phenol in increasing order of acidity and give reason for your answer.

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1. Match the structures of the compounds given in column-I with the name of the compounds given in column - II



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2. Match the starting materials given in Column-I with the products formed by these (Column-II) in the reaction with HI.



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3. Match the items of Column-I with the items of Column-II



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4. Match the items of column-I with the items of Column-II



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Section D Assertion And Reason Type

1. Assertion (A) : Addition reaction of water to but-1-ene in acidic medium yields butan-1-ol.

Reason: Addition of water in acidic medium proceeds through the formation of primary carbocation.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: B



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2. Assertion (A) : p-nitrophenol is more acidic than phenol

Reason (R) : Nitro group helps in the stabilisation of the phenoxide ion by dispersal of negative charge due to resonance.

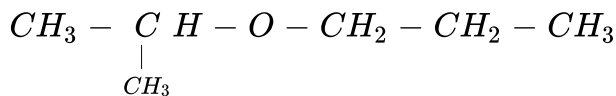
- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: A



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3. Assertion (A) : IUPAC name of the compound is 2-ethoxy-2-methylethane



Reason (R) : In IUPAC nomenclature, ether is regarded as hydrocarbon derivative in which a hydrogen atom is replaced by -OR or -OAr group.

[R = alkyl group, Ar = aryl group]

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: D



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4. Assertion (A): Bond angle in ethers is slightly less than the tetrahedral angle.

Reason (R) : There is a repulsion between the two bulky (-R) groups.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: D



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5. Assertion (A) : Boiling points of alcohols and ethers are high.

Reason (R) : They can form intermolecular H-bonding.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: B



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6. Assertion (A): Like bromination of benzene bromination of phenol is also carried out in presence of Lewis acid.

Reason (R) : Lewis acid polarises bromine molecule.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: D

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7. Assertion (A): o-nitrophenol is less soluble in water than m-nitrophenol.

Reason (R): m-nitrophenol and p-nitrophenols exist as associated molecules.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion and reason both are correct statements but reason does not explain the assertion.

Answer: D

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8. Assertion(A) Ethanol is a weaker acid than phenol

Reason (R) : Sodium ethoxide may be prepared by reaction of ethanol with aqueous KOH

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: C



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9. Assertion (A) : Phenol forms 2,4,6-tri bromophenol on treatment with Br_2 in carbon disulphide at 273 K.

Reason (R) : Bromine polarizes carbon disulphide

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: B



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10. Assertion (A): Phenol give o- and p-nitrophenol on nitration with conc. HNO_3 and H_2SO_4 mixture.

Reason (R) : -OH group in phenol is o- and p-directing.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: D



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Section D Long Answer Type Questions

1. Write mechanism of the reaction of HI with methoxy benzene.

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Section E Multiple Choice Questions Mcqs

1. The general molecular formula of monohydric alcohols and . . is same.

A. Aldehyde

B. Ketones

C. Ethers

D. Ester

Answer: C

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2. Which of the following isomerism is not shown by alcohols?

A. Chain

B. Position

C. Functional

D. Metamerism

Answer: D

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3. Ordinary spirit is

A. Methanol

B. Ethanol

C. Phenol

D. Butan-1-ol

Answer: B

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4. Wood spirit is ...

- A. Methanol
- B. Isopropyl alcohol
- C. Butan-1-ol
- D. Phenol

Answer: A

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5. The IUPAC name of $(CH_3)_3C - CH_2OH$ is

- A. 2,2-Dimethylpropan-1-ol
- B. Tertiary butyl carbinol
- C. Neopentyl alcohol
- D. 1,1-Dimethylethylcarbinol

Answer: A

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6. The given two compounds are :



A. Constitutional isomers

B. Enantiomers

C. Diastereomers

D. Identical

Answer: B

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7. Identify the correct order of boiling points :

A. Propane < Methoxymethane < Fluoroethane < Ethanol

B. Propane < Fluoroethane < Methoxymethane < Ethanol

C. Methoxymethane < Propane < Fluoroethane < Ethanol

D. Fluoroethane < Methoxymethane < Ethanol < Propane

Answer: B

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8. Which compound is used to treat cold and cough ?

A. Phenyl benzoate

B. Phenyl salicylate

C. Methyl salicylate

D. Ethyl salicylate

Answer: C

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9. The given two compounds are ..



- A. Enantiomers
- B. Identical
- C. Constitutional isomers
- D. Meso-compounds

Answer: C

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10. An organic compound (A) C_7H_8O is insoluble in aqueous $NaHCO_3$, but soluble in NaOH. (A) on treatment with bromine water rapidly forms compound (B), $C_7H_5OBr_3$. The compound (A) is

A. 

B. 

C. 

D. 

Answer: C

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11. What is the IUPAC name of $H_2C = CH - CH_2OH$?

A. Prop-2-en-1-ol

B. Prop-1-en-3-ol

C. 1-Hydroxypropene

D. Allyl alcohol

Answer: A

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12. The correct order of dehydration of alcohols form ethers is

A. $1^\circ > 2^\circ > 3^\circ$

B. $1^\circ < 2^\circ < 3^\circ$

C. $2^\circ > 3^\circ > 1^\circ$

D. $3^\circ < 1^\circ < 2^\circ$

Answer: A



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13. Which of the following is not an oxidizing agent ?

A. Lithium aluminium hydride

B. Pyridinium chlorochromate

C. CrO_3 / H_2SO_4

D. Alkaline $KMnO_4$

Answer: A

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14. Which of the following will not form yellow precipitates with alkaline iodine solution ?

A. Ethanol

B. Isopropyl alcohol

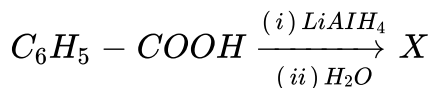
C. Isobutyl alcohol

D. Acetone

Answer: C

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15. Identify the product of the reaction :



- A. Phenyl methanol
- B. Ethyl benzene
- C. 1-Phenyl ethanol
- D. Ethyl benzoate

Answer: A



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16. The butanol can be obtained by the reaction of methyl magnesium iodide with..

A. 

B. 

C. Methanal

D. Propanal

Answer: B

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17. The catalyst used in the industrial production of methanol is

A. $ZnO - Cr_2O_3$

B. $Pt - Rh$

C. $Fe + Mo$

D. MnO_2

Answer: A

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18. The pure ethanol is obtained by

- A. Membrane technology
- B. Fermentation
- C. Acid catalyst hydration of alkenes
- D. Hydroboration oxidation reaction

Answer: A

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19. Which of the following is not soluble in sodium hydrogen carbonate

?

- A. Formic acid
- B. Picric acid
- C. Carbolic acid

D. Benzoic acid

Answer: C

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20. Alcohols are

A. Bronsted Base

B. Lewis Base

C. Bronsted acid

D. All of these

Answer: D

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21. The phenol with a high purity is obtained from

- A. cumene
- B. Benzene sulphonic acid
- C. Chlorobenzene
- D. Diazonium salt

Answer: A

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22. The enzyme that carries out the conversion sucrose to glucose and fructose is

- A. Zymase
- B. Transferase
- C. Invertase
- D. Zymase

Answer: C



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23. The correct structural formula of pyridinium chlorochromate is

A. 

B. 

C. 

D. 

Answer: A



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24. 0.037 g of an alcohol was added to methyl magnesium iodide and the gas evolved at STP, occupies the volume 11.2 cm^3 . On dehydration, the alcohol gives an alkene. The alkene upon ozonolysis produces

acetone as one of its products. The alcohol gives the carboxylic acid upon oxidation with same number of carbon atom. The alcohol is ...

- A. n-butyl alcohol
- B. Isopropyl alcohol
- C. Isobutyl alcohol
- D. Sec. Butyl alcohol

Answer: C



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25. Which of the following is used to distinguish the given pair of compounds ?



- A. Acetone
- B. Alkaline $KMnO_4$

C. Alkaline I_2 solution

D. Victor Meyer's reagent.

Answer: A

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26. Which of the following statements is true for the given reaction ?



A. Anti-addition of -H (from BH_3) and -OH (from solution) occurs.

B. Syn-addition of -H (from BH_2) and -OH (from H_2O_2) occurs.

C. The product formed is optically active.

D. Addition follows Markovnikov's rule.

Answer: C

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27. The dehydration of alcohols to form ethers in presence of concentrated acid follows:

- A. Unimolecular nucleophilic substitution reaction.
- B. Biomolecular nucleophilic substitution reaction
- C. Unimolecular elimination reaction
- D. Bimolecular elimination reaction

Answer: B



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28. The order of esterification of alcohols is

- A. Tertiary > Primary > Secondary
- B. Tertiary > Secondary > Primary
- C. Primary > Secondary > Tertiary

D. Secondary > Primary > Tertiary

Answer: C

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29. The isopropyl alcohol and n-propyl alcohol can be distinguished chemically by

- A. Alkaline solution of iodine
- B. Reduction
- C. Ozonolysis
- D. Phosphorus pentachloride

Answer: A

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30. The alcohol that responds to Lucas reagent fastest is

A. 2-Methyl propan-2-ol

B. 2-Methyl propan-1-ol

C. Butan-2-ol

D. Propan-1-ol

Answer: A



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31. The reactivity of the following compounds with acetyl chloride is



A. $III > II > I$

B. $II > III > I$

C. $I > III > II$

D. $II > I > III$

Answer: C

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32. A yellow product formed when an organic compound C_3H_8O is warmed with aqueous solution of sodium carbonate and iodine solution. The product is

- A. Sodium iodide
- B. Acetone
- C. Iodoform
- D. Sodium iodate

Answer: C

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33. The correct order of acidic strength of following compounds is



A. $III > II > I > IV$

B. $II > I > IV > III$

C. $III > II > IV > I$

D. $IV > I > II > III$

Answer: B



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34. The electrophile in Reimer-Tiemann reaction is

A. Dichlorocarbocation

B. Dichlorocarbene

C. Trichlorocarbocation

D. Formyl cation

Answer: B

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35. On heating 2,2-Dimethylcyclohexanol with concentrated sulphuric acid, the major alkene formed is

A. 

B. 

C. 

D. 

Answer: D

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36. Phenol and ethanol are distinguished chemically by

A. Neutral $FeCl_3$

B. Fehling's reagent

C. Ammonical Cu_2Cl_2

D. Tollen's reagent

Answer: A



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37. Phenol is distilled with a zinc dust followed by Friedel-Craft's alkylation with propyl chloride in the presence of $AlCl_3$ to give a compound (B). (B) is oxidized in the presence of air to form a compound (C). The structural formula of (C) is

A. 

B. 

C. 

D. 

Answer: D

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38. The rate of dehydration of alcohols to form alkenes depends on

A. Both the concentration of dehydrating agent and alcohol

B. Only on the concentration of alcohol

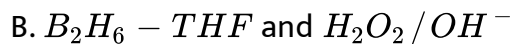
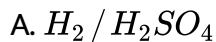
C. The concentration of protonated alcohol

D. Only on the concentration of dehydrating agent.

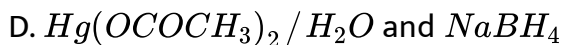
Answer: C

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39. Propan-1-ol is prepared from Propene by



C. Pyridinium chlorochromate in methylene dichloride



Answer: B



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40. Which of the following ethers will not form peroxide ?



Answer: D

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41. The correct reacting order of following alcohols with ($H_2SO_4 + NaBr$) is



A. $III > I > II > IV$

B. $I > III > II > IV$

C. $IV > III > I > II$

D. $II > IV > III > I$

Answer: A

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42. The action of enzyme is inhibited during the fermentation once the concentration of alcohol exceeds

A. 14 percent

B. 15 percent

C. 20 percent

D. 10 percent

Answer: A



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43. Which of the following is not an example of electrophilic substitution ?

A. Kolbe's reaction

B. Oxidation of phenol

C. Reimer-Tiemann reaction

D. Bromination of phenol

Answer: B

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44. Which of the following is the strongest acid ?

A. Cyclohexan-1-ol

B. Phenol

C. p-nitrophenol

D. p-methyl phenol

Answer: C

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45. Phenetole is

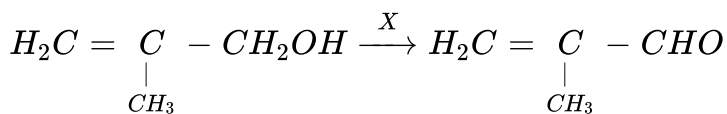
- A. Diphenyl ether
- B. Ethoxy benzene
- C. Methoxy benzene
- D. Diethyl ether

Answer: B



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46. Identify the (X) in the following reaction :



- A. CrO_3 / H_2SO_4
- B. PCC / CH_2Cl_2
- C. $Na_2Cr_2O_7 / H_2SO_4$

D. $KMnO_4 / H_2SO_4$

Answer: B

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47. Propan-1-ol and Ethanol is distinguished chemically by ...

- A. Lucas test
- B. Victor Meyer's test
- C. Iodoform test
- D. Libermann's test

Answer: C

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48. The reagent used in hydroboration oxidation of alkene is

A. Diborane

B. Borax

C. Sodium borohydride

D. Boric acid

Answer: A



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49. The major product of the reaction of alcohols with carboxylic acid in presence of acid catalyst is

A. Ester

B. Ether

C. Anhydride

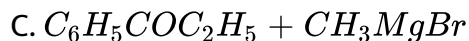
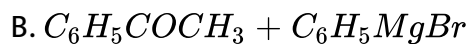
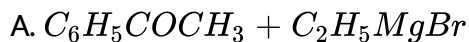
D. Aldehyde

Answer: A



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50. 2-Phenylbutan-2-ol is best prepared by which of the following combinations?



D. All of these

Answer: D



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51. Which of the following alcohols give ketone on oxidation ?

A. Propan-2-ol

B. Propan-1-ol

C. 2-Methyl propan-1-ol

D. Butan-1-ol

Answer: A

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52. The product (B) in the reaction is



A. 

B. 

C. 

D. 

Answer: D

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53. The major product of the following reaction is



A.

B.

C.

D.

Answer: A



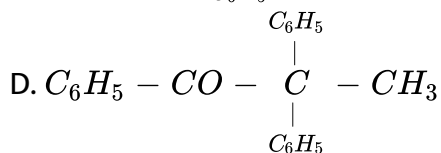
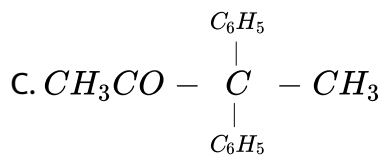
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54. The major product of the following reaction is



A.

B. 



Answer: C

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55. R-(-)-2-Bromooctane on treatment with aqueous KOH mainly gives 2-octanol. Which of the following is true ?

- A. Optically active with R-configuration
- B. Optically active with S-configuration
- C. A racemic mixture
- D. A meso compound

Answer: B



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56. The correct order of basicity of the following anions is



A. $II > III > I$

B. $I > II > III$

C. $II > I > III$

D. $III > II > I$

Answer: C



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57. Identify the correct order of the acidic strength:

A. Methanol $>$ Phenol $>$ H_2O

B. H_2O > Methanol > Phenol

C. Phenol > H_2O > Methanol

D. H_2O > Phenol > Methanol

Answer: C



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58. Which of the following is an analgesic drug ?

A. 

B. 

C. 

D. 

Answer: C



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59. The preparation of salicylaldehyde phenol is known as

- A. Dow's reaction
- B. Reimer- Tiemann reaction
- C. Kolbe's reaction
- D. Cumene process

Answer: B



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60. Which of the following compound having maximum solubility and highest boiling point ?

- A. Ethanol
- B. Ethane-1,2-diol
- C. Propane-1,2,3-triol

D. Butan-1-ol

Answer: C

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61. The bromination of anisole is carried out in the presence of.....

A. CH_3COCH_3

B. CH_3COOH

C. CH_3CH_2OH

D. CH_3CN

Answer: B

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62. In which of the following, intermolecular H-bond is not present ?

A. Alcohol-Alcohol

B. Phenol-Phenol

C. Ether-Ether

D. Ether-Water

Answer: C



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63. The cleavage of carbon-oxygen bond in ether takes place in

A. Alkaline medium

B. Acidic medium

C. Neutral medium

D. Alcohol medium

Answer: B



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64. The boiling point of ethanol is

A. 334 K

B. 351 K

C. 360 K

D. 313 K

Answer: B



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65. In the following reaction, the (X) is ...



A. Benzene

B. Nitrobenzene

C. m-dinitrobenzene

D. 1,3,5-trinitrobenzene

Answer: B

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66. The major product  in the following reaction is :

A. Picric acid

B. 2,4-Dinitrophenol

C. m-nitrobenzene sulphonic acid

D. 3,5-Dinitrobenzenesulphonic acid

Answer: A

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67. Which reagent is used to reduce aldehyde and ketone to alcohol ?

- A. Sodium borohydride
- B. Lithium Aluminium hydride
- C. H_2 / Pd
- D. All of these

Answer: D



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68. The by-product in Dow's process

- A. Ketone
- B. Aldehyde
- C. Ether
- D. Carboxylic acid

Answer: C

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69. Which of the following gives primary alcohol with a Grignard reagent ?

A. HCHO

B. $C_6H_5CHO_3$

C. CH_3CH_2CHO

D. C_6H_5CHO

Answer: A

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70. The product obtained by oxidation of phenol is

A. 1,4-Benzoquinone

B. Resorcinol

C. Catechol

D. Hydroquinone

Answer: A



[View Text Solution](#)

71. The oxidation of phenol in presence of alkaline per-sulphate solution is

A. 1,4-Benzoquinone

B. Hydroquinone

C. Catechol

D. Resorcinol

Answer: B



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72. The acid catalysed hydration of alkenes proceeds by formation of

- A. Carbene intermediate
- B. Carbocation intermediate
- C. Carbanion intermediate
- D. Free radical intermediate

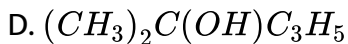
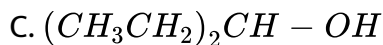
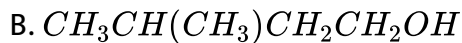
Answer: B



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73. A compound (X) with a molecular formula $C_4H_{10}O$ on oxidation gives (Y) which gives positive iodoform test. (Y) with CH_3MgI followed by hydrolysis gives (Z). The (Z) is

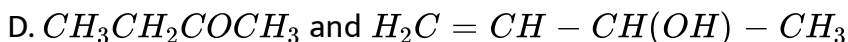
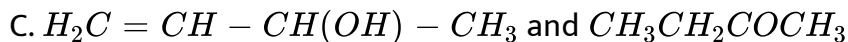
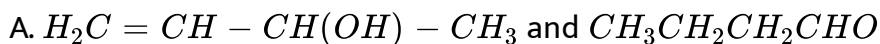
- A. $CH_3 - (CH_2)_4 - OH$



Answer: D

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74. The two compounds (X) and (Y) have the same molecular formula C_4H_8O . These two compounds were subjected to certain chemical tests and following results were obtained :



Answer: B

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75. Identify (X), (Y) and (Z) in the reaction :



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76. An optically active alcohol with a minimum number of carbon atoms when oxidized by acidic dichromate solution gives (Y). (Y) when reacted with CH_3MgI followed by hydrolysis gives the (Z). No change in colour takes place when acidic dichromate solution was added to (Z). However, (2) gives immediate turbidity with HCl (conc.) in presence of $ZnCl_2$ (anhydrous). The (X), (Y) and (Z) in the reaction are respectively:



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77. Common name of Propane 2 - ol is

- A. Propanol
- B. Butanol
- C. Isopropyl alcohol
- D. None of these

Answer: C



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78. The boiling point of alcohol is higher than that of isomeric alkane and alkyl halide, because....

- A. They are in liquid state
- B. Intermolecular attractions are more
- C. They have H-bond

D. Not given

Answer: C

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79. The boiling point of alcohol, gradually decrease as moving from 1° (Primary) to 3° (Tertiary) alcohol because -

- A. Intermolecular distance decreases
- B. Formation of H-bond
- C. Intermolecular distance increases
- D. All of these

Answer: C

 [View Text Solution](#)

80. Which of the following alcohol is more acidic than water ?

- A. Methanol
- B. Ethanol
- C. Propanol
- D. All of these

Answer: A



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81. Which group will increase the electron density of Alcohol ?

- A. $-CH_3$
- B. $-C_2H_5$
- C. $-CH_2CH_2CH_3$
- D. All of these

Answer: D

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82. Which is the correct order of acidity of alcohol ?

A. $1^\circ > 2^\circ > 3^\circ$

B. $3^\circ > 2^\circ > 1^\circ$

C. $1^\circ < 2^\circ < 3^\circ$

D. $2^\circ > 1^\circ > 3^\circ$

Answer: A

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83. 

this reaction is known as -

- A. Acid catalysed hydration
- B. Acid catalysed hydrolysis of alkenes
- C. (A) and (B) both
- D. hydration of alkene

Answer: A

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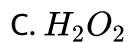
84. $CH_3CH = CH_2 + H_2O \xrightleftharpoons{H^+} X$, identify X

- A. Propane
- B. Propane 2-ol
- C. Propanol
- D. None of these

Answer: B

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85. Indirect addition of water molecule to alkene, during the preparation of alcohol in laboratory is takes place in presence of which reagent ?



D. All of these

Answer: B

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86. The addition product is obtained by reaction between alkene and diborane. This reaction is called ..

A. Acid catalysed hydration

B. Reduction of alkene

C. Oxidation of alkene

D. Hydroboration reaction

Answer: D

 [View Text Solution](#)

87. $3(CH_3(CH=CH_2)) \xrightarrow[\text{Hydroboration}]{(BH_3)_2} X$ Identify X.

A. $(CH_3CH_2CH_2)_3 \cdot B$

B. $(CH_3CH_2CH_2)_2B$

C. $CH_3CH_2CH_2B$

D. $CH_3 - CH(OH)CH_3 \cdot B$

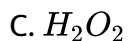
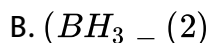
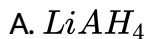
Answer: A

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88. Which oxidizing reagent used to oxidise trialkyl borane in presence of aq. sodium hydroxide ?



D. All of these

Answer: C



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89. $CH_3CH_2CH_2CH_2CH = CH_2 \xrightarrow[H_2O]{H_3O^+}$ Alcohol, identify alcohol.

A. Hexan-2-ol

B. Hexan-2-ol

C. Hexan-3-ol

D. Hexan-4-ol

Answer: A

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90. Which reagent reduce aldehyde and ketone Alcohol ?

A. Sodium borohydride ($NaBH_4$)

B. Lithium Aluminium hydride

C. (A) and (B) both

D. Hydrogen peroxide

Answer: C

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91. Which type of alcohol is obtained on reduction of aldehyde?

A. 1°

B. 2°

C. 3°

D. All of these

Answer: A



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92. Which type of alcohol is obtained on reduction of ketone ?

A. 1°

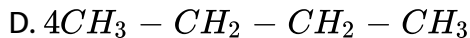
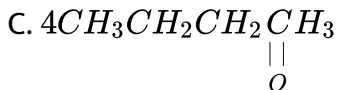
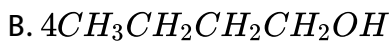
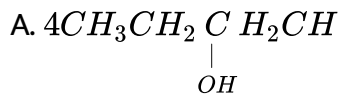
B. 2°

C. 3°

D. All of these

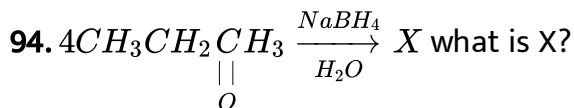
Answer: B

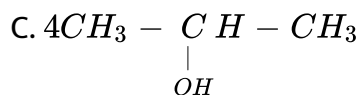
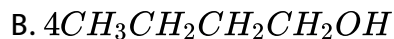
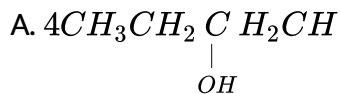
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Answer: B

 [View Text Solution](#)





Answer: A



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95. Which reagent is used to reduce acid or ester ?

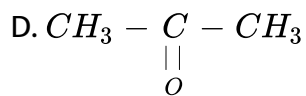
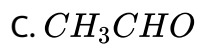
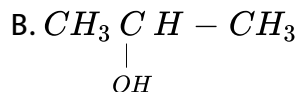
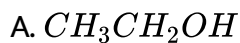
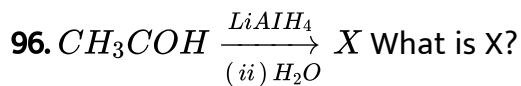


D. All of these

Answer: C



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Answer: A



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97. 

what is X ?

A. Phenyl methanol

B. Ethyl Benzene

C. 1 phenyl 1 ethanol

D. Ethyl Benzoate

Answer: A

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98. $CH_3COOCH_2CH_3 \xrightarrow[(ii) H_2O]{LiAlH_4} X$, identify X.

A. $CH_3CH_2CH_2OH$


B. $2CH_3CH_2OH$

C. $CH_3 - CHO$

D. $CH_3 - CH(OH)CH_3$

Answer: B

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99.  Identify X.

A. 

B. 

C. 

D. 

Answer: A



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100. Addition of Grignard reagent to carbonyl compounds results into which alcohol ?

A. 1°

B. 2°

C. 3°

D. All of these

Answer: D

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101. Which of the following convert into 1° alcohol on reaction with Grignard reagent ?

A. Ethanal

B. Methanal

C. Benzaldehyde

D. None of these

Answer: B

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102. Which compounds gives tertiary alcohol on treatment with Grignard reagent ?

- A. Ketones
- B. Ethens
- C. Phenols
- D. All of these

Answer: A



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103. Industrial production of ethanol is done by which method ?

- A. Grignard reagent
- B. Fermentation method
- C. Oxidation

D. None of these

Answer: B



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104. Sugar on fermentation with which enzyme convert into Glucose and Fructose ?

A. Invertase

B. Zymase

C. Cellulase

D. None of these

Answer: A



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105. Which enzyme is present in yeast ?

- A. Invertase
- B. Zymase
- C. Cellulase
- D. All of these

Answer: B



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106. Pick up the azeotropic mixture from the following.

- A. 90% ethanol + 10% water
- B. 5% ethanol + 95% water
- C. 95% ethanol + 5% water
- D. 85% ethanol + 5% water

Answer: C



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107. Which method is used to get pure ethanol ?

- A. Membrane Technology
- B. Esterification
- C. Fermentation method
- D. None of these

Answer: A



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108. Which is the use of ethanol ?

- A. In colour industry as a solvent

B. In preparation of organic compounds

C. (A) & (B) both

D. Remove colour impurities

Answer: C

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109. Which metal not react with Alcohol ?

A. Na

B. Mg

C. K

D. Ni

Answer: D

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110. $2CH_3OH + 2Na \rightarrow X + H_{(2)(g)}$ What is X?

- A. Sodium methoxide
- B. Sodium ethoxide
- C. Sodium ethanoate
- D. sodium methanoate

Answer: A



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111. $2CH_3CH_2OH + Mg \rightarrow X + H_{2(g)}$ What is X?

- A. Magnesium methoxide
- B. Magnesium ethoxide
- C. Magnesium methanol
- D. Magnesium ethanol

Answer: B



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112. Reaction of Alcohol with carboxylic acid in presence of acid catalyst is known as reaction.

A. Fermentation

B. Esterification

C. Oxidation

D. Hydration

Answer: B



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113. $CH_3OH + C_6OH + C_6H_5COOH \xrightleftharpoons{H^+} X + H_2O$: What is X?

A. Phenyl methanol

B. Benzophenone

C. Methyl benzoate

D. Phenyl benzoate

Answer: C

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114. $CH_3CH_2OH + CH_3COOH \xrightleftharpoons{H^+} X + H_2O$ What is X?

A. Ethyl ethanoate

B. Methyl ethanoate

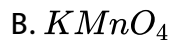
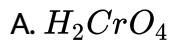
C. Ethyl propanoate

D. Ethyl methanoate

Answer: A

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115. Which oxidising agent is used for the oxidation of alcohol ?



C. PCC

D. All of these

Answer: D



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116. Which of the following compound is most acidic ?

A. Phenol

B. Ethanol

C. P-nitrophenol

D. Picric acid

Answer: D

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117. Which product is obtained when primary alcohol is oxidised with $KMnO_4$ or H_2CrO_4 ?

A. Aldehyde

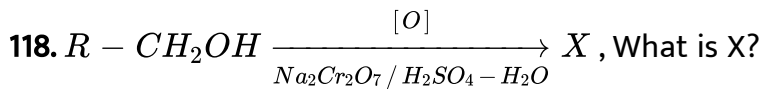
B. Ketone

C. Acid

D. Ester

Answer: C

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A. $R - COOH$

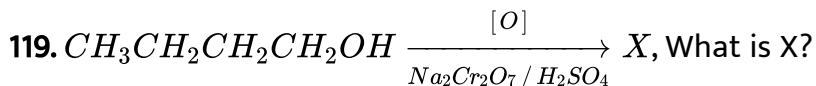
B. $R - CHO$

C. $R - CO - R$

D. $R - O - H$

Answer: A

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A. CH_3CH_2COOH

B. CH_3COOH

C. $CH_3CH_2CH_2COOH$

D. $CH_3CH_2CH_2CHO$

Answer: C

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120. Which reagent stops the alcohol at aldehyde stage ?

- A. PCC
- B. H_2CrO_4
- C. $KMnO_4$
- D. All of these

Answer: A

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121. $R - CH_2OH \xrightarrow[\text{[O] } CH_2Cl_2]{\text{PCC}} X$ What is X ?

- A. R-COOH

B. R-CHO

C. R-CO-H

D. R-O-H

Answer: B

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122. $CH_3CH_2CH_2CH_2OH \xrightarrow[CH_2Cl_2]{PCC[O]} X$ What is X?

A. $CH_3CH_2CH_2CHO$

B. $CH_3CH_2CH_2COOH$

C. $CH_3 - \underset{\begin{array}{c} | \\ CH_3 \end{array}}{C} H - COOH$

D. $CH_3 - \underset{\begin{array}{c} || \\ O \end{array}}{C} - CH_2 - CH_3$

Answer: A

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123. Which of the following compound obtain on oxidation of 2° alcohol with H_2CrO_4 or $KMnO_4$?

A. Aldehyde

B. Ketone

C. Ester

D. None of these

Answer: B



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124. $CH_3 - \underset{\substack{| \\ OH}}{C} H - CH_3 \xrightarrow[Na_2Cr_2O_7 / H_2SO_4]{[O]} X$, What is X?

A. Propanone


B. Propanal

C. Propanoic acid

D. None of these

Answer: A

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125.  What is X?

A. Cyclohexane

B. Cyclohexanone

C. Cyclohexene

D. None of these

Answer: B

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126. 3° alcohol can not be oxidised even with strong oxidising agent because -

- A. 'C' with -OH group does not having H atom
- B. 'C' with -OH group having H atom
- C. It is a tertiary 'C' atom
- D. Quaternary H is not attached to 'C'

Answer: A



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127. Which test used to detect the types of Alcohol ?

- A. Tollen's test
- B. Dow process
- C. Lucas test

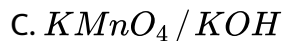
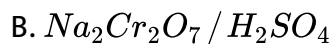
D. Cumene process

Answer: C



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128. Which of the following is a strong oxidising agent ?



D. All of these

Answer: D



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129. What is observed when tertiary alcohol is subjected to Lucas test ?

- A. Oily droplets on the upper surface
- B. Mixture remain unreacted
- C. Mixture becomes milky white within 5 minutes
- D. None of these

Answer: A

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130. Which catalyst used in Lucas test ?

- A. Anhydrous $ZnCl_2$
- B. Hydrus $ZnCl_2$
- C. Anhydrous $ZnSO_4$
- D. Hydrus $ZnSO_4$

Answer: A

 [View Text Solution](#)

131. Which alcohol respond slowly in Lucas Test?

- A. Primary
- B. Secondary
- C. Tertiary
- D. Aryl alcohol

Answer: B



[View Text Solution](#)

132. $R - OH + HCl \xrightarrow[\Delta]{\text{Anhy. ZnCl}_2} X + H_2O$ What is X?

- A. R-Cl
- B. R-CO-R
- C. R-COOH

D. R-O-R

Answer: A

 [View Text Solution](#)

133. What happened when $CH_3 - \underset{\substack{| \\ OH}}{C}H - CH_3$ undergo Lucas Test?

- A. Mixture remain unreacted
- B. Mixture becomes milky white within 5 minutes
- C. Oily droplets observed on the surface
- D. Mixture becomes brown coloured

Answer: B

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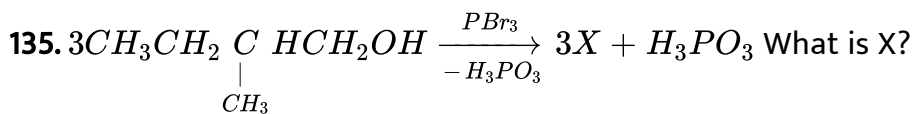
134. What is the product, when 1° and 2° alcohol is react with phosphorus Tribromide (PBr_3) ?

- A. Bromo alcohol
- B. Bromo alkane
- C. Bromo butane
- D. Bromo ketone

Answer: B



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- A. 1-bromo - 2 - methyl butane
- B. 3- methyl - 4 - bromo butane
- C. 1-bromo - 3- methyl butane

D. 3-bromo -1-methyl butane

Answer: A

 [View Text Solution](#)

136.  What is X?

A. 

B. 

C. 

D. 

Answer: A

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137. Formation of alkene by removal of water molecule from alcohol is called of alcohol.

- A. Hydration
- B. Dehydration
- C. Oxidation
- D. Reduction

Answer: B



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138. Which of the following is used for dehydration alcohol ?

- A. 85% Phosphoric acid
- B. 75% Phosphoric acid
- C. 85% Sulphuric acid

D. None of these

Answer: A

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139. The correct order of ease with which the alcohol dehydrates to form an alkene is

A. $3^\circ > 2^\circ > 1^\circ$

B. $2^\circ > 3^\circ > 1^\circ$

C. $1^\circ > 2^\circ > 3^\circ$

D. $3^\circ < 2^\circ < 1^\circ$

Answer: A

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140. Which compound will react rapidly with anhydrous $ZnCl_2$ and Conc. HCl ?

- A. Propan 1-ol
- B. Ethanol
- C. 2-methyl Propan 2-ol
- D. None of these

Answer: C



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141. Which reagent mixture is used in Lucas test?

- A. Anhydrous $AlCl_3$
- B. Anhydrous $ZnCl_2$ + Conc. HCl
- C. Anhydrous $ZnCl_2$ + Conc. HNO_3

D. Anhydrous $ZnCl_2 + H_2SO_4$

Answer: B

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142. Which of the following will reduce alcohol ?

A. Red P

B. Black P

C. White P

D. None of these

Answer: A

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143. $CH_3CH_2OH + 2HI \xrightarrow[\Delta]{\text{Red P}} X + I_2 + H_2O$ What is X?

A. Methane

B. Ethane

C. Ethene

D. Butane

Answer: B



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144. State the IUPAC name of 

A. o - cresol

B. 2-methyl phenol

C. 3-methyl phenol

D. m- cresol

Answer: B




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145. State the IUPAC name of 

- A. Benzene phenol
- B. p-cresol
- C. 4 methyl phenol
- D. o- cresol

Answer: C

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146. What is the IUPAC name of 

- A. Benzene 1, 4 di-ol
- B. Dihydroxy Benzene
- C. p-hydroxybenzene phenol

D. All of these

Answer: A

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147. What is the IUPAC name of 

A. Picric acid


B. 2, 4, 6 Triamino phenol

C. 2, 4, 6 Trinitro phenol

D. 2, 4, 6 Trinitro benzene

Answer: C

 [View Text Solution](#)

148. What is the IUPAC name of 

A. 5-chloro - 2-methyl phenol

B. 3-methylchloro phenol

C. 4-chlorohydroxy Toluene

D. 3-chloro 1 hydroxy Toluene

Answer: A



[View Text Solution](#)

149. In phenol, the hybrid state of C and O are respectively

A. sp^3 , sp^2

B. sp^2 , sp^3

C. sp , sp^2

D. sp^2 , sp

Answer: B



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150. What is the C-O-H bond angle in phenol ?

- A. 108.5°
- B. 109°
- C. 108°
- D. 111.7°

Answer: B



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151. Boiling point and solubility of phenol is more than that of other arenes and haloarene with same molecular weight, because

- A. Phenol can form intermolecular H-bond
- B. Phenol can form weak Vander valls bond

C. Phenol is very reactive

D. All of these are correct

Answer: A

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152. Following structure represents which thing?



A. Intermolecular H-bond between phenols

B. Intermolecular H-bond between phenol and water

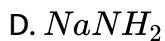
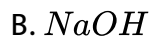
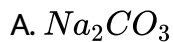
C. Intermolecular H-bond between phenol and alcohol

D. All of the above.

Answer: B

 [View Text Solution](#)

153. Which of the following will neutralise the phenol?



Answer: B



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154. Phenol is

A. Acidic

B. Basic

C. Neutral

D. Amphoteric

Answer: A



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155. Aquous solution of phenol is more acidic than which of the following ?

A. Acetic acid

B. Alcohol

C. (A) & (B) both

D. None of these

Answer: B



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156. Which is the use of phenol ?

- A. Production of dyes
- B. Production of drugs
- C. Production of polymers
- D. All of these

Answer: D

 [View Text Solution](#)

157. Which is the bi-product in Dow process ?

- A. Phenoxy benzene
- B. Methoxy benzene
- C. Ethoxy benzene
- D. Chlorobenzene

Answer: A

 [View Text Solution](#)

158. Which reagent mixture is used in Dow process ?




- A. Chlorobenzene + 6 - 8% NaOH
- B. Chlorobenzene + 6-8% HCl
- C. Chlorobenzene + 6-8% NH_4OH
- D. Chlorobenzene + 6-8% Na_2CO_3

Answer: A



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159.  What is X?

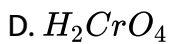
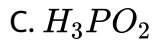
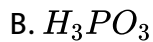
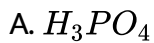
- A. 
- B. 
- C. 

D. 

Answer: C

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160. Which catalyst is used in cumene process ?



Answer: A

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161.  What is Z?

- A. Cumene
- B. Phenol
- C. Ethyl Benzene
- D. None of these

Answer: A

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162. Which is the product, when benzene reacts with fuming H_2SO_4 ?

- A. Phenol
- B. Benzene sulphonic acid
- C. Benzene sulphonate
- D. Acetone

Answer: B

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163. The reaction between Aniline and Nitrous acid at very low temp ($0^{\circ}C$) gives which product ?

- A. Acetanilide
- B. Benzene diazonium chloride
- C. Sodium phenoxide
- D. Diphenyl ether

Answer: B



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164. Which product is formed by reaction between water and benzene diazo chloride salt ?

- A. Diphenyl ether

B. Sodium phenoxide

C. No reaction

D. Phenol

Answer: D

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165. Which compound not reacts with phenol ?

A. Na_2CO_3

B. $NaHCO_3$

C. (A) and (B) both

D. NaOH

Answer: C

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166. Phenol gives which product of reaction with acid anhydride or acid chloride in alkali medium ?

- A. Phenyl ester
- B. Phenyl ether
- C. Phenyl acid
- D. Phenyl amine

Answer: A



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167.  What is X?

- A. Sodium phenoxide
- B. Phenyl benzoate
- C. Phenyl acetate

D. Aniline

Answer: C

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168.  What is X?

A. Phenyl acetate

B. Phenyl benzoate

C. Phenoxy benzene

D. Toluene

Answer: A

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169.  What is X?

A. 

B. 

C. 

D. 

Answer: C

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170. Reaction between solution of phenol in aq.sodium hydroxide and halo alkane will give ether, what is the name of this process of ether preparation ?

A. Williamson's synthesis

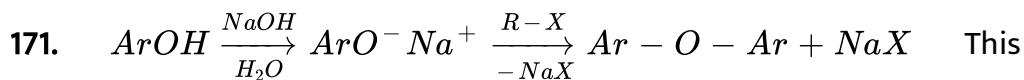
B. Dow process

C. Cumene process

D. None of these

Answer: A

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reaction represent which of the following ?

- A. Lucas test
- B. Cumene test
- C. Dow process
- D. None of these

Answer: D

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172.  What is X?

A. Methoxy benzene

B. Phenoxy benzene

C. Ethoxy benzene

D. Toluene benzene

Answer: A



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173. Phenol on heating with zinc powder give which of the following product ?

A. Toluene

B. Benzene

C. Nitrobenzene

D. Anisole

Answer: B



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174. Which is the product when sodium phenoxide is heated with ethyl iodide ?

- A. ethoxy benzene
- B. Methoxy benzene
- C. Iodo benzene
- D. None of these

Answer: A



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175. Which product is obtained on addition of Br_2 water to phenol at room temperature ?

- A. Bromobenzene

B. 2, 4, 6 Tribromo phenol

C. 2, 4, 6 Tribromo benzene

D. 4 - bromophenol

Answer: B

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176. Which is the product when phenol is reacts with Br_2 , in presence of carbon disulphide at 273 - 278 K temperature ?

A. 4- bromophenol

B. 2 - bromophenol

C. 3 bromophenol

D. None of these

Answer: A

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177. When phenol reacts with acid chloride/acid anhydride in presence of anhydrous $AlCl_3$, gives phenolic ketone. This process is known as.....

- A. Lucas test
- B. Fries rearrangement
- C. Williamson's process
- D. Tollen's test

Answer: B



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178. Preparation of salicylic acid from phenol is known as process.

- A. Dow
- B. Cumene

C. Kolbe-Schmitt

D. Reimer-Teimann

Answer: C

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179. Which of the following drug is prepared from salysilic acid ?

A. Aspirin

B. Methyl salisylate

C. (A) and (B) both

D. Paracetamol

Answer: C

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180. Which is the correct structural formula hydroxy benzoic acid (salysilic acid) ?

A. 

B. 

C. 

D. 

Answer: A



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181. The addition of aldehyde group to aromatic molecules of phenol when it react with sodium hydroxide and chloroform is known as Reaction.

A. Kolbe-Schmitt

B. Reimer-Tiemann

C. Williamson's

D. Fries rearrangement

Answer: B

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182. Which is the product when phenol is oxidised with chromic acid ($Na_2Cr_2O_7 + \text{Conc. } H_2SO_4$) ?

A. 1, 4 benzoquinon

B. Resorcinol

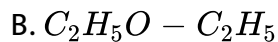
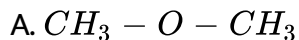
C. Benzoyl chloride

D. Hydro qunine

Answer: A

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183. Which one of the following is a symmetrical ether ?

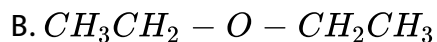
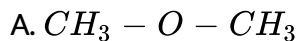


D. All of these

Answer: D

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184. Which of the following is an unsymmetrical ether ?



Answer: C


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185. What is the IUPAC name of 

- A. Methoxy benzene
- B. Methyl benzene
- C. Phenoxy methyl
- D. Benzene methy ether

Answer: A

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186. What is the IUPAC name of 

- A. Diphenyl ether

B. Phenoxy benzene

C. Dibenzene ether

D. Diphenyl ketone

Answer: B

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187. What is the IUPAC name of $CH_2 = CH - O - CH = CH_2$

A. Ethenoxy ethene


B. Divinyl ether

C. 2 - Ethoxy propane

D. Diethyl ether

Answer: A

 [View Text Solution](#)

188. What is the IUPAC name of 

A. Methoxy benzene

B. Phenetol

C. Ethyl phenyl ether

D. Ethoxy benzene

Answer: D



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189. What type of hybridisation of 'C' and 'O' in ether ?

A. sp

B. sp^2

C. sp^3

D. dsp^2

Answer: C



[View Text Solution](#)

190. State the value of C-O-C bond angle in ether.

A. 108°

B. 109°

C. 111.7°

D. 111°

Answer: C



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191. The Boiling point of ether is very low compared to that of same molecular weight of alcohol, because -

- A. Ether having intermolecular Vanderwall's bond.
- B. Ether is a weak polar solvent.
- C. Ether can not form intermolecular hydrogen bond.
- D. All of these

Answer: C

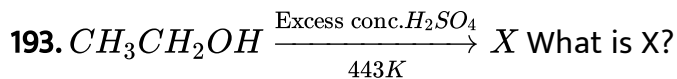
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192. The solubility of ether in water is similar that of -

- A. Alcohol having same molecular weight
- B. Phenol having same molecular weight
- C. Ester having same molecular weight
- D. Ketone having same molecular weight

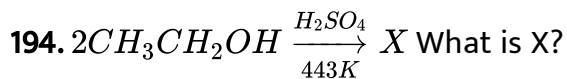
Answer: A

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- A. Ethene
- B. Ethane
- C. Dimethyl ether
- D. Butene

Answer: A

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- A. Ethene
- B. Ethoxy ethane
- C. Dimethyl ether

D. Butane

Answer: B

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195. Ethoxy ethane is obtained by the reaction between 2 mole of ethanol with conc. H_2SO_4 , at 413 K temp. This reaction is known as

.....

- A. Williamson's synthesis
- B. Continuous etherification
- C. Grignand reaction
- D. None of these

Answer: B

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196. Who discovered the nucleophilic substitution reaction for synthesis of unsymmetrical ethens?

- A. Williamson's
- B. Grignard
- C. Hofmann
- D. Nernst

Answer: A



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197. $CH_3CH_2 - O - CH_2 - CH_3 + H_2O \xrightarrow[\Delta]{dil.H_2SO_4} X$ What is X?

- A. Ethanol
- B. Propanol
- C. Butanol

D. Ethyl acetate

Answer: A

 [View Text Solution](#)

198. $C_2H_5 - O - C_2H_5 + 2HBr \xrightarrow[-H_2O]{\Delta} X$ What is X?

A. Bromo butane

B. Bromo ethane

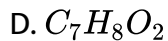
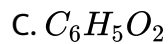
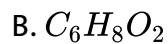
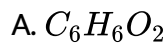
C. Bromo ethene

D. Ethanol

Answer: B

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199. What is the general formula of Quinol ?



Answer: A

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200. Which by product obtained in Dow process?

A. Phenol

B. Phenoxybenzene

C. Chlorobenzene

D. Phenyl chloride

Answer: B

 [View Text Solution](#)

201. Which is the product when phenol reacts with Br_2 in presence of CS_2 at 278 K temp. ?

- A. Bromophenol
- B. 2, 4, 6 Tribromophenol
- C. 1,4 - dibromophenol
- D. p - bromophenol

Answer: D



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202. Simple and mix ethers can be prepared by which process ?

- A. Wurtz reaction
- B. Etherification reaction

C. Grignard reaction

D. Williamson's reaction

Answer: D

 [View Text Solution](#)

203. Which product is obtained when Anisole undergo Friedel Craft alkylation reaction ?

A. p- methoxy toluene

B. p-methoxy toluene

C. m - methoxy toluene

D. (A) and (B) both

Answer: D

 [View Text Solution](#)

204. Acidity of phenol is because of

- A. Resonance structure of phenoxide ion
- B. Resonance structure of phenol
- C. Oxygen is more electro negative than hydrogen
- D. Not given

Answer: A



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205. How much ethanol is present in Azeotropic mixture ?

- A. 5 %
- B. 95 %
- C. 15 %
- D. 100 %

Answer: B



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206. What is the IUPAC name of $HC \equiv C - CH_2 - O - CH_3$

- A. 3-methoxy prop - 1 - yne
- B. methyl propanyl ether
- C. ethenoxy ethyne
- D. propyl methyl ether

Answer: A



[View Text Solution](#)

207. Anisole is of which type ether ?

- A. Symmetrical

B. Asymmetrical

C. Mix

D. (B) and (C) both

Answer: D

 [View Text Solution](#)

208. What is the product when vapour of ethyl alcohol is passed over Al_2O_3 at 623K temperature ?

A. Ethane 1, 2 diol

B. Ethene

C. Ethanoic acid

D. Ethyl methyl ether

Answer: B

 [View Text Solution](#)

209. Reaction of anisole with conc. HNO_3 and conc. H_2SO_4 will give.....

- A. phenol
- B. ortho nitro anisole
- C. nitro benzene
- D. o, p-nitro anisole

Answer: D



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210. Chemically salol is known as -

- A. Acetyl salicylic acid
- B. Sodium salicylate
- C. Methyl salicylate

D. Phenyl salicylate

Answer: D

 [View Text Solution](#)

211. By the reaction between 3 mole ethanol and 1 mole PBr_3 the product obtained are 3 mole bromo ethane and 1 mole X, What is X ?

A. H_3PO_4

B. H_3PO_2

C. H_3PO_3

D. HPO_3

Answer: C

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1. Which product obtained when diethyl ether is heated with Conc. HI ?

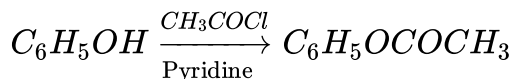
- A. Ethanol
- B. Methyl iodide
- C. Iodine
- D. Ethyl iodide

Answer: D



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2. The following reaction is known as



- A. Remer-Tiemann reaction
- B. Kolbe-Schmitt reaction

C. Acetylation

D. Benzoylation

Answer: C

 [View Text Solution](#)

3. Glycerol is...

A. primary alcohol

B. Secondary alcohol

C. Monohydric alcohol

D. Trihydric alcohol

Answer: D

 [View Text Solution](#)

4. Picric acid is...

- A. Trinitro toluene
- B. Trinitro aniline
- C. Trinitro phenol
- D. None of these

Answer: C



[View Text Solution](#)

5. Lucas reagent is a...

- A. Concentrated HCl + Anhydrous $ZnCl_2$
- B. Concentrated HNO_3 + Anhydrous $ZnCl_2$
- C. Concentrated HCl + Hydrated $ZnCl_2$
- D. Concentrated HNO_3 + Concentrated $ZnCl_2$

Answer: A



[View Text Solution](#)

6. The reaction by which the salicylaldehyde is prepared when phenol is heated with $CHCl_3$ and alcoholic KOH is known as

- A. Friedel Craft reaction
- B. Reimer-Tiemann reaction
- C. Grignard reaction
- D. None of these

Answer: B



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7. Which of the following compound has strong intermolecular Hydrogen bond ?

A. Methyl hydroxy benzene

B. Phenol

C. Benzaldehyde

D. p-hydroxy benzaldehyde

Answer: B

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8. Phenol is....

A. strong base than ammonia

B. weak acid than carbonic acid

C. strong acid than carbonic acid

D. neutral compound

Answer: B

 [View Text Solution](#)

9. Phenol on reduction with H_2 in presence of Ni catalyst will give.....

- A. benzene
- B. toluene
- C. cyclohexanol
- D. cyclohexane

Answer: C



[View Text Solution](#)

10. Which alcohol is obtained from water gas ?

- A. Butanol
- B. Methanol
- C. Ethanol

D. None of these

Answer: B

 [View Text Solution](#)

11. On long exposure to air ethanol becomes sour in taste, because of -

A. Bacteria

B. Formation of formic acid

C. Formation of acetic acid due to oxidation

D. None of these

Answer: C

 [View Text Solution](#)

12. Which alcohol does not give stable compound on dehydration ?

A. Methyl alcohol

B. Ethyl alcohol

C. Propyl alcohol

D. n-Butyl alcohol

Answer: A

 [View Text Solution](#)

13. Which of the following compound react most readily with Lucas test

?

A. Butane-1-ol

B. 2 - Methyl propane-1-ol

C. 2- Butane - 2- ol

D. 2- Methyl propane - 2- ol

Answer: D



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14. Which of the following compound possess strongest hydrogen bond ?

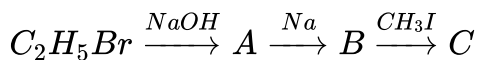
- A. Ethyl ammine
- B. Ethyl alcohol
- C. Diethyl ether
- D. Ammonia

Answer: B



[View Text Solution](#)

15. What is C in the following reaction ?



- A. Ethyl iodide

B. Ethane

C. Propane

D. Methyl ethyl ether

Answer: D



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16. The acidic organic compound, which does not have carboxylic function group is ...

A. Ascorbic acid

B. Vinegar

C. Oxalic acid

D. Picric acid

Answer: D



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17. By which reagent the diethyl ether is dissociate at high temperature ?

A. Water

B. HI

C. $KMnO_4$

D. HCl

Answer: B



[View Text Solution](#)

18. Diethyl ether will not reacts with which of the following one ?

A. H_2SO_4

B. HCl

C. HI

D. CH_3COOH

Answer: D

 [View Text Solution](#)

19. Which of the following have strong inter molecular H-bond ?

A. Methyl hydroxy benzaldehyde

B. Phenol

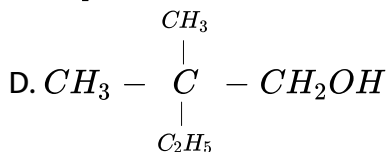
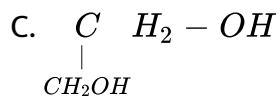
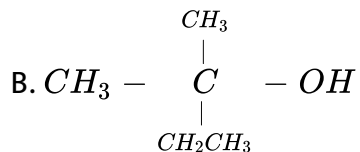
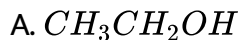
C. Benzaldehyde

D. P-hydroxy benzaldehyde

Answer: B

 [View Text Solution](#)

20. Which of the following is a 3° alcohol ?



Answer: B

 [View Text Solution](#)

21. Which of the following is not obtained when ethanol is reacts with H_2SO_4 ?

A. Ethene

B. Diethyl ether

C. Acetylene

D. None of these

Answer: C

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22. Which statement is not correct with reference to alcohol ?

A. Ethanol is heavier than the water

B. Ethyl alcohol is a volatile liquid

C. Lower molecular weight alcohols are water soluble.

D. Alcohol produces H_2 gas with Na. metal.

Answer: A

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23. The higher B.P of Glycerol than that of Propanol is because of

A. hybridization

B. resonance

C. H-bond

D. All of these

Answer: C



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24. At room temperature which of the following will respond Lucas test

?

A. Butanol

B. Propanol

C. 2-methyl propane-2-ol

D. None of these

Answer: C

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25. Which of the following having a highest boiling point ?

A. Ethane

B. Butane

C. Pentane

D. Butane-2-ol

Answer: D

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26. Which of the following is used to cure cold and cough?

A. Methyl salicylate

B. Ethyl salicylate

C. Phenyl salicylate

D. Phenyl benzoate

Answer: A

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27. Sweet fruity smell is obtained by the reaction of ethanol with

A. PCl_3

B. $CH_3 - O - CH_3$

C. CH_3COOH

D. $SOCl_2$

Answer: C

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28. Which gas is obtained on reaction of phenol with Na-metal ?

- A. Methane
- B. CO
- C. Hydrogen
- D. CO_2

Answer: C



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29. The compound with molecular formula $C_4H_{10}O$ does not react with sodium metal but with excess HI it gives one alkyl halide compound. Which is the compound ?

- A. Methoxy methane

B. Methoxy propane

C. Ethoxy ethane

D. 2-Butanol

Answer: C

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30. On exposure to air, ether forms an explosive compound

A. Peroxide

B. T.N.T.

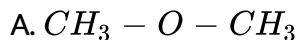
C. Superoxide

D. Trioxide

Answer: A

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31. Which of the following ether is in liquid state at room temperature ?



D. None of these

Answer: A



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32. Propane-1-ol and Propane-2-ol are distinguish by which method ?

A. Ozonolysis

B. Reduction

C. Dehydration

D. Oxidation

Answer: D

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33. Which chemicals are useful to prepare Aspirin drugs ?

- A. Salicylic acid
- B. Phenol
- C. Acetyl chloride
- D. (A) and (B) both

Answer: A

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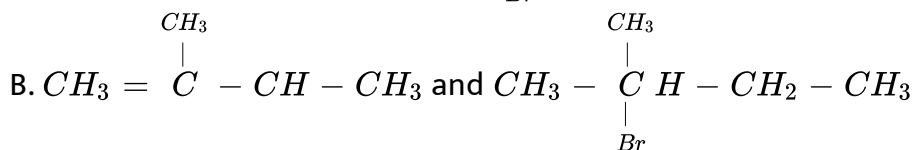
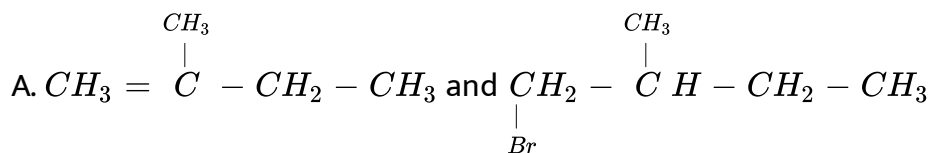
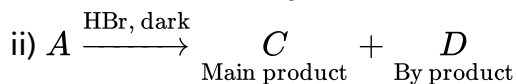
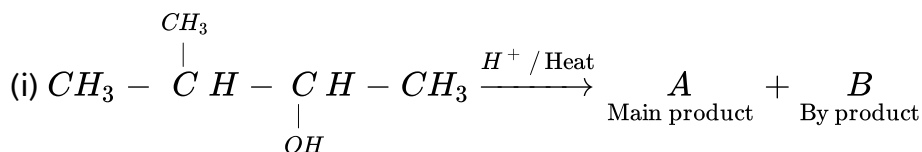
34. Which of the following will give ethanol and carbon dioxide by the reaction with Zymase enzyme ?

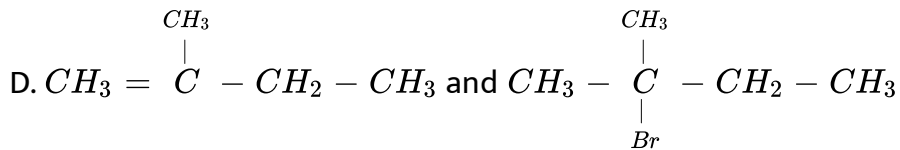
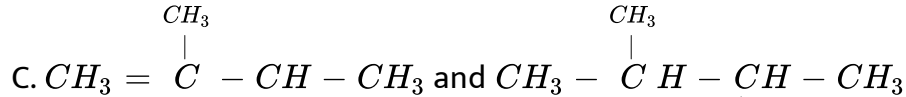
- A. Glucose
- B. Invert sugar
- C. Fructose
- D. All of these

Answer: D

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35. In the following reaction equation, what is A and C ?





Answer: B

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36. Which reagent is used to distinguish phenol and benzoic acid ?

A. Neutral $FeCl_3$

B. Aq. NaOH

C. Tollen's reagent

D. Schiff's reagent

Answer: A

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37. Pick up the correct order of acidity of the following.

(I) Phenol (II) P-Cresol

(III) m-Nitrophenol (IV) P-Nitrophenol

A. $IV > III > I > II$

B. $II > IV > I > III$

C. $I > II > IV > III$

D. $III > II > I > IV$

Answer: A



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38. Which major product is obtained on heating phenol with KBr and

$KBrO_3$?

A. 2 - bromophenol

B. 3 - bromophenol

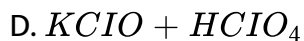
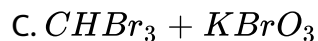
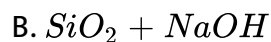
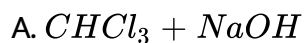
C. 4- bromophenol

D. 2, 4, 6 Tribromophenol

Answer: D

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39. By reaction with which reagent phenol will convert into salicyldehyde ?



Answer: A

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40. Which of the following compound will easily undergo dehydration ?

A. 2-methyl propane - 2- ol

B. Ethyl alcohol

C. 3- methyl - 2- butanol

D. 2-pentenol

Answer: A



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41. By which reaction phenol can be converted to O-hydroxy benzaldehyde ?

A. Kolbe-Schmitt

B. Reimer-Tiemann

C. Wurtz

D. Cannizaro

Answer: B

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42. The compound X having -OH functional group, quickly reacts with Conc. HCl and anhydrous $ZnCl_2$. What is X?

A. 3-methyl-2-butanol

B. 3-nethyl - 1-butanol

C. 1-butanol

D. 2-methyl-2-butanol

Answer: D

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43. Pick the correct group of the following having decending order of its acidity.

A. m-nitrophenol > p-nitrophenol > o - nitrophenol

B. o- nitrophenol > m-nitrophenol > p- nitrophenol

C. p- nitrophenol > m-nitrophenol > o- nitrophenol

D. p- nitrophenol > o-nitrophenol > m- nitrophenol

Answer: D



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44. Which of the following compound gives milky white solution with Lucas reagent ?

A. Butane-1-ol

B. Butane-2-ol

C. 2-methyl propane - 2 - ol

D. 3-Methylbutan-2-ol

Answer: B

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45. Identify B and D in the following.



A. Methanol and Bromoethane

B. Ethanol and Alcoholic KOH

C. Ethanol and K_2CO_3

D. Ethyl hydrogen sulphate and KOH

Answer: B

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46. Phenol on heating with alcoholic KOH Chloroform represent which reaction ?

A. Reimer-Tiemann

B. Kolbe-Schmitt

C. Gattermann

D. cannizaro

Answer: A



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47. Cumene $\xrightarrow[(ii) H_2O, H^+]{(i) O_2}$ (X) and (Y) What is X and Y?

A. Toluene, Propene

B. Toluene, Propyl chloride

C. Phenol, Acetone

D. Phenol, Acetaldehyde

Answer: C

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48. Which of the Grignard reagent will use to prepare 3-methyl 2-butanol ?

A. 2-butanon + Methyl magnesium bromide


B. Acetone + Ethyl magnesium bromide

C. Acetaldehyde + Propyl magnesium bromide

D. Ethyl propionate bromide + Methyl magnesium

Answer: C

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49.  By which mechanism the above reaction will proceed ?

- A. Electrophilic addition
- B. Electrophilic displacement
- C. Activated nucleophilic displacement
- D. Benzoyl intermediate

Answer: B



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50. Phenol \xrightarrow{x} Tribromo derivative. What is X?

- A. Bromine + Benzene
- B. Bromine + Water (Bromine water)
- C. Potassium bromide
- D. Bromine + CCl_4

Answer: B



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51. Phenol on heating with bromine and chloroform will give.

- A. m-bromophenol
- B. Ortho and Parabromo phenol
- C. P-bromophenol
- D. 2,4,6 Tribromophenol

Answer: B



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52. Which of the following is an isomer of ethanol?

- A. Acetaldehyde

B. Nitrophenol


C. Picric acid

D. Dimethyl ether

Answer: D



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53.  What is X?

A. Picric acid

B. Nitrophenol

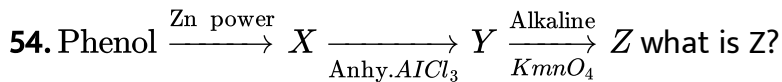
C. Dinitro phenol

D. None of these

Answer: A



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A. Benzaldehyde

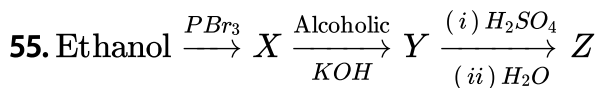
B. Benzene

C. Toluene

D. Benzoic acid

Answer: D

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A. $CH_3CH_2OCH_2CH_3$

B. $CH_3CH_2O-SO_3H$

C. CH_3CH_2OH

D. $CH_2 = CH_2$

Answer: C

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56. Methoxy methane and ethanol are of which type isomers ?

A. Functional group

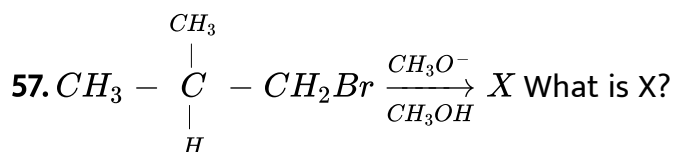
B. Optical

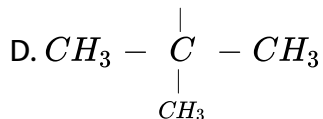
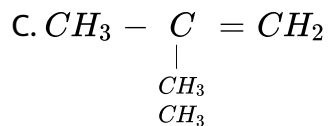
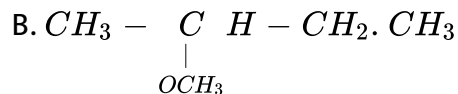
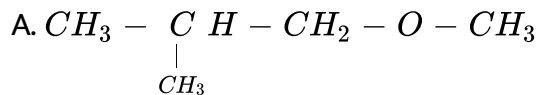
C. Position

D. Chain

Answer: A

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Answer: C



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58. Which of the following electrophile is the most reactive species ?

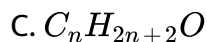
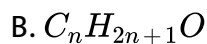
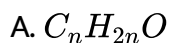


Answer: A



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59. Which is the common general formula alkanol compounds ?



Answer: C



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60. What is the correct acidity order of the following compounds ?



A. $I > II > III$

B. $III > I > II$

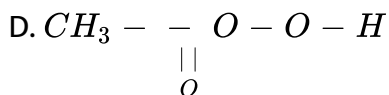
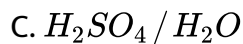
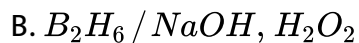
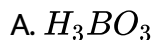
C. $II > III > I$

D. $I > III > II$

Answer: B

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61. By reaction of propene with which of the following, propane 1-ol can be obtained ?



Answer: B



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62. By which reagent n.propyl alcohol and iso propyl alcohol can be separated ?

A. PCl_5

B. Reduction

C. Oxidation with potassium diformate

D. Reaction with O_3 (ozonolysis)

Answer: C



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63. Both alcohol and ether having same molecular formula ether is more volatile than alcohol, why ?

- A. Presence of intermolecular H-bond in alcohol
- B. Ether is polar
- C. Resonating structure of alcohol
- D. Presence of intermolecular H-bond in ether

Answer: A

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64. 

- A. $C_6H_5OC_2H_5$
- B. $C_2H_5OC_2H_5$
- C. $C_6H_5OC_6H_5$
- D. C_6H_5I

Answer: A

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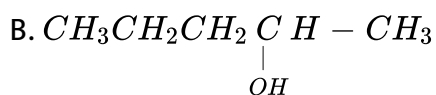
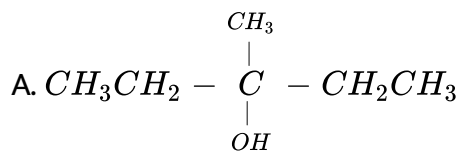
65. Ethyl acetate $\xrightarrow{\text{excess } CH_3MgBr}$ P. What is P?

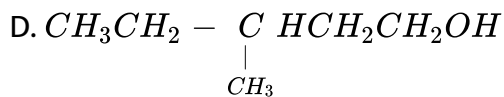
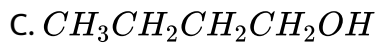


Answer: A

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66. Which of the following can be easily undergo dehydration ?

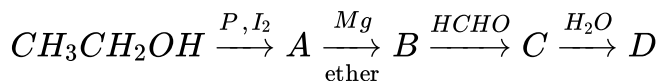




Answer: A

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67. What is D in the following reaction ?



A. n-butyl alcohol

B. n- Propyl alcohol

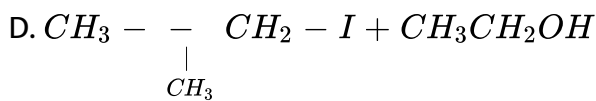
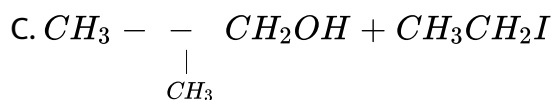
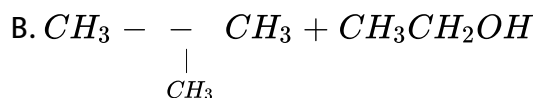
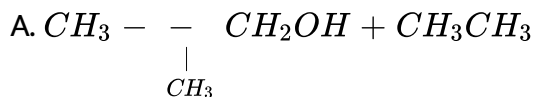
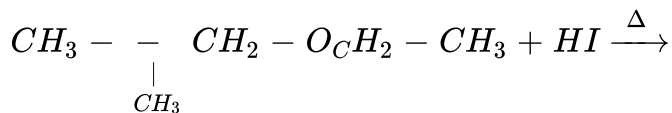
C. Propanol

D. Butanol

Answer: B

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68. Complete the reaction.

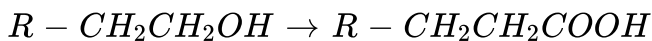


Answer: C



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69. What is the suitable reagent for the following reaction ?



B. $PBr_3, KCN, H_2/Pt$

C. KCN, H_2O^+

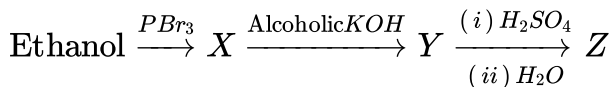
D. PBr_3, H_3O^+

Answer: A



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70. What is Z in the following reaction?



A. $CH_3CH_2OCH_2CH_3$

B. $CH_3CH_2O - SO_3H$

C. CH_3CH_2OH

D. $CH_2 = CH_2$

Answer: C



[View Text Solution](#)

71. What is the produce when $OH.OH_2.CH_2.OH$ is heated with periodic acid?

A. $2HCOOH$

B. $\begin{array}{c} C \ HO \\ | \\ CHO \end{array}$

C. 

D. $2CO_2$

Answer: C



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72. Phenol $\xrightarrow[\text{Powder}]{Zn}$ X $\xrightarrow{\text{Anhy. } AlCl_3}$ Y $\xrightarrow[\text{KMnO}_4]{\text{Alkaline}}$ Z What is Z?

A. Benzaldehyde

B. Benzoic acid

C. Benzene

D. Toluene

Answer: B

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73. How many stereo isomer of 3-chloro butane 2-ol ?

A. 2

B. 6

C. 8

D. 4

Answer: D

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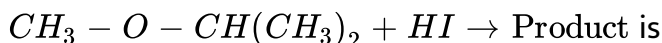
74. Ortho-nitrophenol is less soluble in water than p and m-nitrophenols because

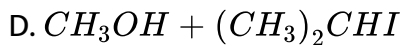
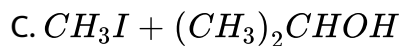
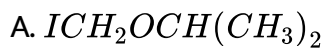
- A. o-nitrophenol shows intramolecular H-bonding.
- B. o-nitrophenol shows intermolecular H-bonding
- C. melting point of o-nitrophenol is lower than those of m- and p-isomers.
- D. o-nitrophenol is more volatile in steam than those of m- and p-isomers.

Answer: A

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75. The major organic product in the reaction,

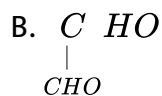




Answer: C

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76. H_2COHCH_2OH on heating with periodic acid gives :



Answer: C

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77. Which one of the following compounds has the most acidic nature ?

A. 

B. 

C. 

D. 

Answer: B

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78. Among the following four compounds

(i) phenol (ii) methylphenol

(iii) meta-nitrophenol

(iv) para-nitrophenol

the acidity order is :

A. $ii > i > iii > iv$

B. $iv > iii > i > ii$

C. $iii > iv > i > ii$

D. $I > iv > iii > ii$

Answer: B



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79. Lucas test is used for the determination of

A. alcohols

B. alkyl halides

C. phenols

D. aldehydes

Answer: A



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80. The major product obtained on the monobromination (with $Br_2 / FeBr_2$) of the following compound A is



A.

B.

C.

D.

Answer: B



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81. A: Ethers behave as bases in the presence of mineral acids.

R: It is due to the presence of lone pair of electrons on the oxygen.

A. a

B. b

C. c

D. Dimethyl ether

Answer: A



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82. A: The major products formed by heating $C_6H_5CH_2OCH_3$ with HI are $C_6H_5CH_2I$ and CH_3OH

R: Benzyl cation is more stable than methyl cation.

A. a

B. b

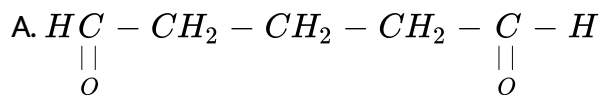
C. c

D. d

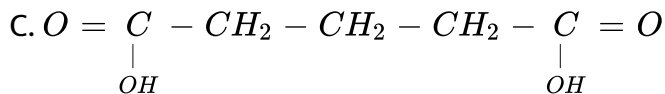
Answer: A

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83. Oxidation product 1,2-cyclopentanediol with HIO_4 gives



B. 



D. none of these

Answer: A

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84. A: Phenol is more reactive than benzene towards electrophilic substitution reaction.

R: In the case of phenol, the intermediate carbocation is more resonance stabilised.

A. a

B. b

C. c

D. d

Answer: C



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85. A : Ethers can be dried by using sodium wire.

R: Ethers do not react with sodium.

A. a

B. b

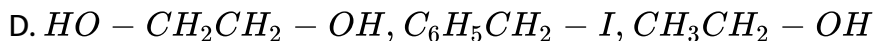
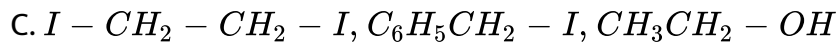
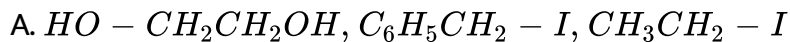
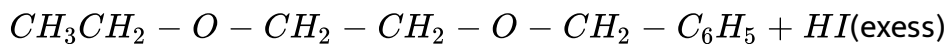
C. c

D. d

Answer: A

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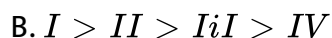
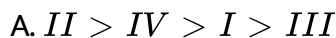
86. Find the product for



Answer: A

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1. Arrange the following compounds in order of decreasing acidity :



Answer: C



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2. Compound (A), C_8H_9Br gives a white precipitate when warmed with alcoholic $AgNO_3$. Oxidation of (A) gives an acid (B), $C_8H_6O_4$ (B) easily forms anhydride on heating. Identify the compound (A)

A. 

B. 

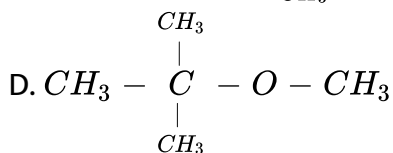
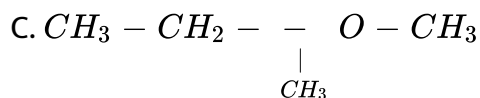
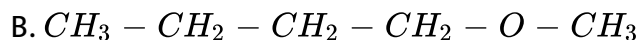
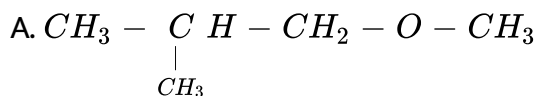
C. 

D. 

Answer: D

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3. Among the following ethers, which one will produce methyl alcohol on treatment with hot concentrated HI ?



Answer: D



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4. The most suitable for the conversion of

$R - CH_2 - OH \rightarrow R - CHO$ is :

A. CrO_3

B. PCC(Pyridinium Chlorochromate)

C. $KMnO_4$

D. $K_2Cr_2O_7$

Answer: B



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5. Among the following sets of reaction which one produces anisole ?

A. CH_3CHO , $RMgX$

B. C_6H_5OH , $NaOH$, CH_3I

C. C_6H_5OH neutral $FeCl_3$

D. $C_6H_5CH_3$, CH_3COCl , $AlCl_3$

Answer: B



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6. Which of the following will not be soluble in sodium hydrogen carbonate ?

A. 2, 4, 6-trinitrophenol

B. Benzoic acid

C. o-Nitrophenol

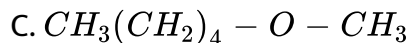
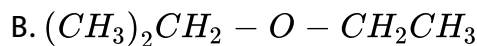
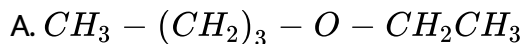
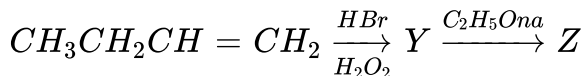
D. Benzenesulphonic acid

Answer: C



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7. Identify Z in the sequence of reaction :



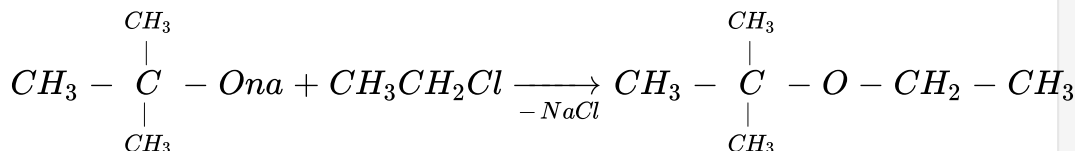
D. None

Answer: A



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8. The reaction



is called :

- A. Williamson Synthesis
- B. Williamson continuous etherification process
- C. Etard reaction
- D. Gatterman - Koch reaction

Answer: A



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9. Reaction of phenol with chloroform in presence of dilute sodium hydroxide finally introduces which one of the following functional group ?


- A. $-CHCl_2$
- B. $-CHO$
- C. $-CH_2Cl$

D. $-COOH$

Answer: B



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10. Which of the following is not the product of dehydration of  ?

A. 

B. 

C. 

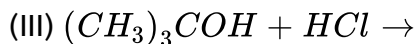
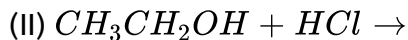
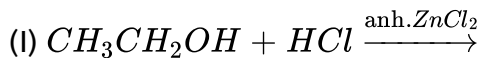
D. 

Answer: D



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11. Which of the following reaction(s) can be used for the preparation of alkyl halides ?



A. (IV) only

B. (III) and (IV) only

C. (I), (II) and (IV) only

D. (I) and (II) only

Answer: C



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12. 2-Chloro -2-methylpentane on reaction with sodium methoxide in methanal yields :

- A. (a) and (b)
- B. all of these
- C. (a) and (c)
- D. (c) only

Answer: B



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13.  Can be classified as:

- A. Alcohol formation reaction
- B. Dehydration reaction
- C. Williamson alcohol synthesis reaction

D. Williamson ether synthesis reaction

Answer: D

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14. The major product obtained in the following reaction is



A. 

B. 

C. 

D. 

Answer: B

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15. The oxidation of phenol with chromic acid gives....

- A. a simple diketone.
- B. a conjugated diketone.
- C. ortho benzoquinone.
- D. an aldehyde.

Answer: B



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16. Of the following alcohols, the one that would react fastest with conc.

HCl and anhydrous $ZnCl_2$ is

- A. Butan-1-ol
- B. Butan-2-ol
- C. 2-methylpropan-2-ol

D. 2-methylpropanol

Answer: C

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17. The compound that is most difficult to protonate is

A. 

B. 

C. 

D. 

Answer: D

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18. Major product in the following reaction is :



A.

B.

C.

D.

Answer: C



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19. Arrange the following compounds in increasing order of C-OH bond length:

methanol, phenol, p-ethoxyphenol

A. phenol < methanol < p-methoxyphenol

B. methanol < p-methoxyphenol < phenol

C. phenol < p-methoxyphenol < methanol

D. methanol < phenol < p-methoxyphenol

Answer: C

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Section E Mcqs Asked In Board Exams

1. By which process phenyl acetate can be converted in to hydroxy acetophenone ?

- A. Fries rearrangement
- B. Reimer-Tiemann process
- C. Kolbe-Schmitt reaction
- D. Acetylation

Answer: A



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2. Which of the following compound having mixture obtained on fermentation ?

A. 1-propanol

B. Ethanol

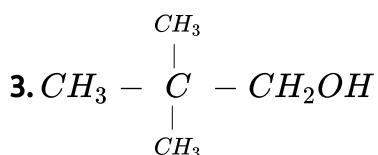
C. Glucose

D. Glycerol

Answer: C



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How this compound respond the Lucas test?

- A. No reaction
- B. Coloured layer formed
- C. Oily droplets appear
- D. Mixture becomes milky white

Answer: A



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4. Which two statement of the following are true for phenol ?

- (1) Phenol is more acidic than alcohol.
- (2) Malamine plastic can be prepared from phenol.
- (3) It gives violet colour with neutral $FeCl_3$.
- (4) It gives phenetol on heating with CH_3COCl .

- A. Statement (3) Statement (4)
- B. Statement (1) Statement (4)
- C. Statement (2) Statement (3)

D. Statement (1) Statement (3)

Answer: D

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5. The organic compound A on reaction with $Na_2Cr_2O_7 / H_2SO_4$ gives

B. This compound on reduction in presence of Ni gives ethyl alcohol. What is A ?

A. Ethanoic acid

B. Ethene

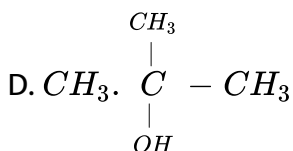
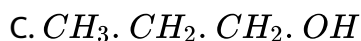
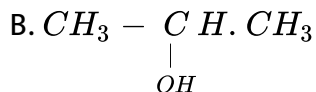
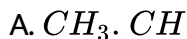
C. Ethanal

D. Ethanol

Answer: D

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6. Which of the following compound is more acidic ?



Answer: A



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7. Following options contain the pairs of the name of reaction and the name of final product, which pair is incorrect ?

A. Kolbe-Smitt reaction 2-Hydroxy benzoic acid

B. Cumene Process -Phenol and acetone

C. Reimer-Tiemann reaction - 2-Hydroxy benzaldehyde

D. Fries rearrangement- Methoxy benzoic acid

Answer: D

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8. In which of the following reactions of alcohol there is no cleavage of C-O bond ?

A. Oxidation reaction of alcohol

B. Dehydration reaction of alcohol

C. Reduction reaction of alcohol

D. Reaction of alcohol with phosphorous tribromide

Answer: A

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9. Which one of the following compounds do not give primary alcohol on reduction ?

- A. Propanoic acid
- B. Propanal
- C. Methyl propanoate
- D. Propan- 2- one

Answer: D



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10. Which reagent is used for bromination of methyl phenyl ether ?

- A. $Br_2 / RedP$
- B. Br_2 / CH_3COOH
- C. $Br_2 / FeBr_3$

D. HBr / Δ

Answer: B

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11. Which of the following statement is not correct ?

- A. Phenol is used to prepare analgesic drugs.
- B. Phenol is neutralised by sodium carbonate.
- C. Solubility of phenol in water is more than that of chlorobenzene.
- D. Boiling point of o-nitrophenol is lower than that of p-nitrophenol.

Answer: B

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12. Which of the following is an analgesic drug ?

- A. Aspirin
- B. Ranitidine
- C. Erythromycin
- D. Luminal

Answer: A

 [View Text Solution](#)

13. Which reagents from the following give aldehyde by reacting with primary alcohol ?

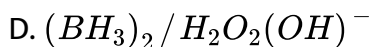
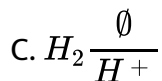
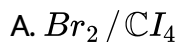
- A. $PCl_5 + CH_2Cl_2$
- B. $KMnO_4 + H_2SO_4$
- C. $KMnO_4 + KOH$
- D. $Na_2Cr_2O_7 + H_2SO_4$

Answer: A



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14. Which of the following reagent reacts with but-1-ene to give optically inactive product ?

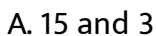


Answer: D



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15. How many σ and π bonds are present respectively in the final product obtained by the Reimer-Tiemann reaction of phenol ?



B. 14 and 4

C. 15 and 4

D. 14 and 3

Answer: C

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16. Which products are obtained when phenyl ethanoate reacts in presence of *Anh.* $AlCl_3$?

A. o - Hydroxy acetophenone and p - Hydroxy acetophenone

B. o - Methoxy acetophenone and p - Methoxy acetophenone

C. o - Methyl acetophenone and p - Methyl acetophenone

D. o - Ethoxy acetophenone and p - Ethoxy acetophenone

Answer: A

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17. How many gm. of ethanol is required in the reaction with Na metal in order to give 560 ml. dihydrogen gas at STP ?

[mole. mass of ethanol = 46 gmol^{-1}]

A. 1.15

B. 2.3

C. 4.6

D. 11.5

Answer: B



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18. The IUPAC name of the product obtained by the oxidation of phenol with the help of chromic acid is

A. Cyclo hexa - 2,4 - diene - 1,4 - dione

B. Cyclo hexa - 2,5 diene 1,4 dione

C. Cyclo hexa - 2,5 - diene - 1,4 - diol

D. Cyclo hexa - 2,4 - diene - 1,4 - diol

Answer: B



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19. Which is the final product obtained by the reaction of a Grignard reagent ethyl Magnesium bromide with propanone ?

A. Pentane-1-ol

B. 2-Methylbutane-2-ol

C. Pentane-2-ol

D. 3-Methylbutane-2-ol

Answer: B



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20. Which is the correct structural formula of Aspirin ?

A. 

B. 

C. 

D. 

Answer: C



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21. Which of the following alcohol has the highest boiling point ?

A. Butan-2-ol

B. 2-Methylpropan-2-ol

C. Propan-2-ol

D. Butan-1-ol

Answer: B

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22. Which is the major product obtained by hydrolysis of compound formed by reaction between formaldehyde and ethyl magnesium bromide ?

A. Ethan-1-ol

B. Propan-2-ol

C. Propan-1-ol

D. 2-Methyl-propan-2-ol

Answer: C

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23. Give the IUPAC name for methyl salicylate.

- A. Methoxy benzoic acid
- B. 2-Hydroxy benzoic acid
- C. Methyl-2-hydroxy benzoate
- D. Methyl-3-hydroxy benzoate

Answer: C



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24. Minimum carbon containing 2° alcohol undergoes dehydration and gives A. Benzene diazonium chloride when heated with water gives B which on reduction by zinc metal gives A and C also react with other. Name the process between A and C.

- A. Reimer - Tiemann Reaction
- B. Kolbe-Schmitt Reaction

C. Cumene Process

D. Fries Rearrangement

Answer: C

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25. Choose the correct order of boiling point for ethanol, ethylene glycol and glycerol.

A. Ethanol > ethyleneglycol > glycerol


B. Ethanol > glycerol > ethylene glycol

C. Glycerol > ethylene glycol > ethanol

D. Glycerol > ethanol > ethylene glycol

Answer: C

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26. IUPAC name of the  is

- A. 2 - Ethyl 5 - methyl cyclohexanol
- B. 5 - Methyl - 2 ethyl cyclohexanol
- C. 2 - Methyl - 5 - ethyl cyclohexanol
- D. 5 - Ethyl - 2 - methyl cyclohexanol

Answer: A

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27. What is the IUPAC name of the product obtained from oxidation of phenol ?

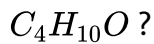
- A. 1, 4 - Benzoquinone
- B. 1, 2 - Benzo Catechol
- C. Cyclohexa - 2, 5 diene 1, 4 - dione

D. None of these

Answer: A

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28. How many alcohols and ethers are possible with general formula



A. 7

B. 4

C. 5

D. 8

Answer: A

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29. Which of the following alcohol will respond Lucas test slowest ?

A. Secondary butyl alcohol

B. 3° - butanol

C. Neo pentyl alcohol

D. None of the above

Answer: C

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30. What is obtained as end product when phenol dissolved in aqueous solution of sodium hydroxide is heated with carbon dioxide gas at 398K temperature and 4-7 bar pressure ?

A. Cumene hydro peroxide

B. Sodium phenoxide

C. Salicylaldehyde

D. Sodium salicylate

Answer: D

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31. Which of the following is used as a solvent oxidation of Alcohol by Pyridinium chloro chromate ?

A. Chloro methane

B. Trichloro ethane

C. Trichloro methane

D. Dichloro methane

Answer: D

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32. Which of the following is a product of hydrolysis of diethyl ether ?

- A. Ethene
- B. Ethane
- C. Ethanol
- D. Ethyne

Answer: C

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33. Which of the following product is obtained on performing Reimer Tiemann reaction on phenol ?

- A. Salicylic acid
- B. Phenyl acetate
- C. Salicylaldehyde

D. 1,4 Benzoquinone

Answer: C

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34. Give the correct order of acidic strength of the following alcohols.

A. 2-methyl propan-2-ol > propan-1-ol > propan-2-ol

B. Propan-1-ol > propan-2-ol > 2-methyl propan-2-ol

C. 2-methyl propan-2-ol > propan-2-ol > propan-1-ol

D. Propan-1-ol > 2-methyl propan-2-ol > propan-2-ol

Answer: B

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35. Sodium phenoxide on reaction with methyl iodide produces compound X, which on Friedel-Craft's acylation produces compounds Y and Z. Mention compounds X, Y and Z.

A. X= Methoxy Benzene,

Y = O-methoxy toluene,

Z = p-methoxy toluene

B. X = Methoxy Benzene,

Y=o-chloro anisole,

Z= p-chloro anisole

C. X = Anisole,

Y= 1(2-methoxy phenyl) ethan 1 - one,

Z=1(4-methoxy phenyl) ethan - 1 - one

D. X = Anisole, Y= o - nitro Anisole,

Z= p-nitro anisole

Answer: C



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36. Which of the following compound cannot be oxidized by chromic acid and when Lucas test is performed on it, oily drops appear in on the upper layer of mixture ?

A. Butane-1-ol

B. Propane-2-ol

C. Propane-1-ol

D. 2-methyl propane-2-ol

Answer: D



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37. Match Column-I with Column-II :



A. P - (iv), Q - (iii), R - (ii), S- (i)

B. P - (i), Q - (iii), R - (v), S- (ii)

C. P - (ii), Q - (iv), R - (i), S- (iii)

D. P - (iv), Q - (iii), R - (i), S- (ii)

Answer: A



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38. In "lucas test" which of the following alcohol cannot give any change ?

A. Butylalcohol

B. 2-butanol

C. 2-methylpropan-2-ol

D. 2-propanol

Answer: A

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39. Dehydration of 3° alcohol undergoes in presence of:

A. 20% of H_3PO_4

B. 85 % H_3PO_4

C. 50% pf H_3PO_4

D. conc. H_2SO_4

Answer: A

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40. Salicylaldehyde can be prepared by

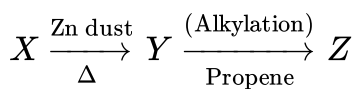
- A. Fitting reaction
- B. Reimer - Tiemann reaction
- C. Fries rearrangement reaction
- D. Kolbe - Schmitt reaction

Answer: B



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41. In the following reaction



What is X and Z?

- A. X = Benzene Z = Cumene
- B. X = Phenol Z = Benzene

C. X = Phenol Z = Cumene

D. Kolbe - Schmitt reaction

Answer: C

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42. Give bond angle in C-O-C and hybridization of oxygen atom in simple ether.

A. 180° sp

B. 117° sp^2

C. 111.7° sp^3

D. 119° sp^3

Answer: C

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43. Which of the following statement is true ?

- A. 3° carbocation is formed by the loss of a water molecule from the oxonium ion. This step is fast.
- B. 3° carbocation reacts with Cl^- rapidly and forms chloro alkane.
- C. Tertiary alcohol is converted in to an ion through protonation by H^+ of acid is slow step.
- D. none

Answer: B



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44. How many number of carbon atoms are present in 1-phenyl ethanol ?

- A. 6

B. 7

C. 8

D. 9

Answer: C



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45. Which of the following is correct order of boiling point of alcohol ?

(i) Propan 1 - ol (ii) Butan -1 - ol

(iii) Butan-2-ol (iv) 2-Methyl propan-2-ol

A. (i) < (iii) < (ii) < (iv)

B. (i) < (ii) < (iv) < (iii)

C. (i) < (iv) < (iii) < (ii)

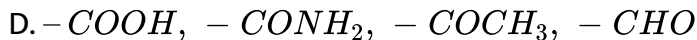
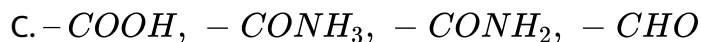
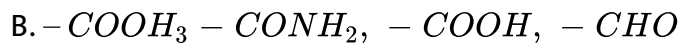
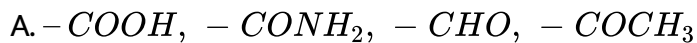
D. (i) < (ii) < (iii) < (iv)

Answer: C



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46. Which is the correct priority order for absolute configuration ?



Answer: D



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47. In section - I conversion are given and section-II name of reaction are given match section-I and section -II



A. (1) - (e), (2) - (b), (3) - (a), (4) - (d)

B. (1) - (b), (2) - (d), (3) - (c), (4)- (a)

C. (1) -(c), (2)- (e), (3) - (d), (4) -(b)

D. (1)- (d), (2) - (a), (3) -(e), (4) - (c)

Answer: B



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48. Which of the following alcohol is most reactive with HCl in presence of anhydrous Zinc chloride at room temperature ?

A. $CH_3 - CH_2 - CH_2 - OH$

B. $(CH_3)_3 - C - OH$

C. $(CH_3)_3 - C - CH_2OH$

D. $(CH_3)_2CH - OH$

Answer: B



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49. Which of the following alcohol is secondary (2°) alcohol ?

- A. Isobutyl alcohol
- B. Ethylene glycol
- C. Neo pentanol
- D. Iso propyl alcohol

Answer: D



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50. Which reagent is used in bromination of methoxy benzene?

- A. Br_2 water
- B. Br_2 / Acetic acid
- C. Br_2 / $FeBr_3$

D. Br_2/CH_3CHO

Answer: B

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51. Which of the following pair gets converted into alcohol by reduction ?

- A. Acetic acid and acetaldehyde
- B. Ethyl benzoate and benzoic acid
- C. Chloro ethane
- D. (A) and (B) both

Answer: D

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52. $P \xrightarrow{\text{Reduction}} Q \xrightarrow{\text{Dehydration}} R \xrightarrow{\text{Hydro-chlorination}} S$ What is P, Q, R, S?

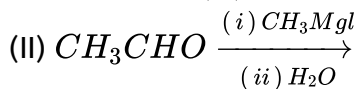
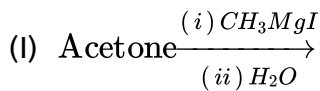


Answer: C



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53. Which of the following reaction will give isopropanol ? Choose the right answer.



A. (I) & (II)

B. (II) & (IV)

C. (II) & (III)

D. (I), (II) & (IV)

Answer: B



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54. Identify Pyridinium chlorochromate from the following:

A. 

B. 

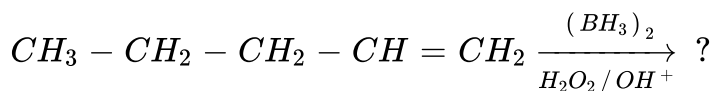
C. 

D. 

Answer: A

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55. Name the product obtained by the following reaction ?



A. Pentan-3-ol

B. Pentan-2-ol

C. Pentan-1-ol

D. 2-methyl butan-2-ol

Answer: C

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56. Give the IUPAC name of the product obtained when phenol is oxidized by chromic acid ($Na_2Cr_2O_7 + Conc.H_2SO_4$)

- A. Cyclohexa-2,5-diene-1,4-dione
- B. Cyclohexa-1,4-dione
- C. Cyclohexanone
- D. Cyclohexa-1,4-diene-2,5-dione

Answer: A



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57. Which of the following substance does not produce tri-iodomethane with the mixture of alkali and I_2 ?

- A. Propan-1-ol

B. Ethanol

C. Dimethyl ketone

D. Ethanal

Answer: A

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58. Substance A $\xrightarrow{Cu/573K}$ isobutylene, which is structural formula of substance A in this reaction ?

A. $CH_3CH_2CH_2CH_2 - OH$

B. $CH_3CH(CH_3)CH_2OH$

C. $CH_3CH(OH)CH_2)CH_3$

D. $(CH_3)_3C - OH$

Answer: D

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59. How much litres of dihydrogen gas will be produced at STP in the reaction of ethanol with 12 gram of Mg ? (Mg = 24 gram / mol)

A. 11.2 liter

B. 2.24 liter

C. 22.4 liter

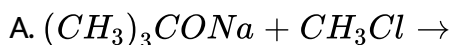
D. 5.6 liter

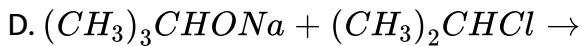
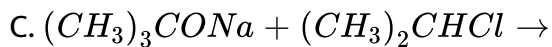
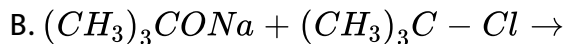
Answer: A



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60. By which of the following reactions, ether compound will be obtained easily ?





Answer: A



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61. Possible isomers of monohydric phenol having molecular formula C_7H_8O are ..

A. 3

B. 4

C. 1

D. 2

Answer: A



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62. The reagent (X) in the given reaction is phenol $\xrightarrow[273K]{\text{'X'}}$
Parabromophenol.

A. Br_2 / CH_3COOH

B. $Br_2 / FeBr_3$

C. Bromine water

D. Br_2 / CS_2

Answer: D



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63. Which of the following compound has highest boiling point ?

A. Butan-2-ol

B. Butan-1-ol

C. Pentan-1-ol

D. Propan-1-ol

Answer: C



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