



CHEMISTRY

BOOKS - MBD -HARYANA BOARD

ALCOHOLS, PHENOLS AND ETHERS

Objective Type Questions

1. Which of the following is strongest acid?

A. o - Nitrophenol

B. m - Nitrophenol

C. p - Nitrophenol

D. Ethanol.

Answer: C



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2. Williamson's synthesis is used to prepare?

A. Alcohol

B. Amine

C. Ketone

D. Ether.

Answer: D



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3. Which of the following has highest boiling point?

A. Methanol

B. Ethanol

C. Propan - 1 - ol

D. Butan -1- ol

Answer: D



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4. Which of the following statement is incorrect?

A. Phenol liberates CO_2 from $NaHCO_3$.

B. Phenol is a weak acid.

C. Phenol is aromatic compound.

D. Phenol is soluble in $NaOH$.

Answer: A



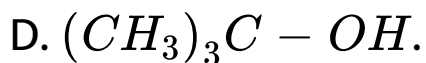
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5. Which is the weakest acid in the following :

A. CH_3OH

B. $(CH_3)_2CH - OH$

C. CH_3CH_2OH



Answer: D



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6. Absolute alcohol is prepared by :

- A. Vacuum distillation
- B. Azeotropic distillation
- C. Steam distillation
- D. None of these.

Answer: B



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7. Phenol reacts with aqueous bromine to give

:

A. o - bromophenol

B. m - bromophenol

C. o & p - bromophenol

D. 2, 4, 6 - tribromophenol.

Answer: D



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8. Phenol reacts with bromine in CS_2 to give :

- A. o - bromophenol
- B. m - bromophenol
- C. o & p - bromophenol
- D. 2, 4, 6 - tribromophenol.

Answer: C



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9. The acid that does not contain carboxylic group is :

A. Acetic acid

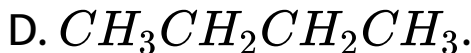
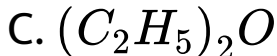
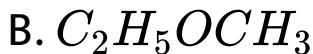
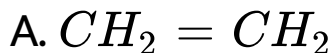
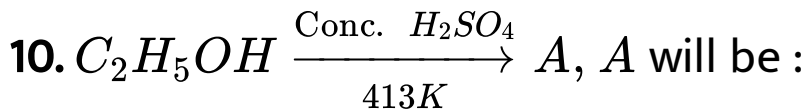
B. Formic Acid

C. Picric Acid

D. None.

Answer: C





Answer: C



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11. Dehydration of alcohols to give alkenes is catalysed by :

A. Conc. H_2SO_4 at 413 K

B. Conc. H_2SO_4 at 443 K

C. Conc. H_2SO_4 at 383 K

D. None of these.

Answer: B



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12. Haloform reaction does not take place with

:

A. Methanol

B. Ethanol

C. Acetone

D. 2 - Chloropropane.

Answer: A



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13. Williamson's synthesis is an example of :

A. Nucleophilic Substitution Reaction

B. Nucleophilic Addition

C. Electrophilic Substitution

D. None of the above.

Answer: A



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14. Grignard reagent can be prepared in :

A. Diethyl ether

B. Alcohol

C. Benzene

D. None of these.

Answer: D



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15. Iodoform test is not given by :

A. 2 - Pentanol

B. 3 - Pentanol

C. Ethanol

D. Ethanal.

Answer: B



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16. Which has highest value of pKa?

A. Phenol

B. Ethanol

C. o - Nitrophenol

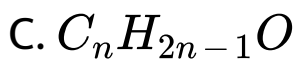
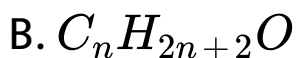
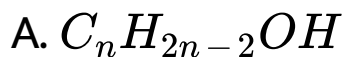
D. o - Cresol

Answer: C



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17. Molecular formula of Ethers is :



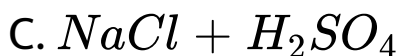
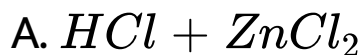
D. None of these.

Answer: B



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18. Alkyl halides are prepared from alcohol by treating with :



D. None of these.

Answer: A



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Very Short Answer Type Questions

1. How will you convert an alkyl halide into an ether?



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2. What happens when ethanol is treated with phosphorus pentachloride?



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3. What happens when ethanol is treated with conc. H_2SO_4 at 443 K ?

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4. What happens when ethanol is treated with thionyl chloride?

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5. What is denatured alcohol?

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6. What is rectified spirit?



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7. What is absolute alcohol?



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8. How will you convert ethanol into ethylene?



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9. How will you convert phenol into salicylic acid ?

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

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



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12. What is power alcohol?



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13. What happens when formaldehyde is treated with methanol in the presence of conc.

H_2SO_4 ?



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14. How will you convert acetone into tertiary butyl alcohol>



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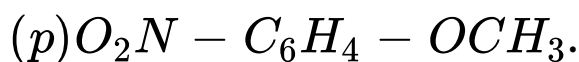
15. Can we dry ethanol by anhydrous $CaCl_2$?

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16. Define fermentation.

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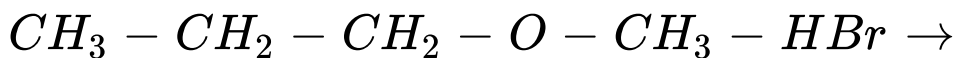
17. Write IUPAC name of



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Short Answer Type Questions

1. Complete the reaction :



?



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2. (i) Write mechanism of hydration of ethene to yield ethanol.

(ii) Write note on Williamson Ether synthesis.

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3. Write the mechanism of acid dehydration of ethanol to yield ethene. (ii) Write note on Reimer - Tiemann reaction.

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4. Why are alcohols weaker acids than water?

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5. p - Nitro phenol is more acidic than phenol.
Explain.



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6. Write the chemical reactions of dehydration of alcohols at the temperature of 383K, 413 K and 433 - 433 K in the presence of H_2SO_4 .



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7. Boiling point of ethanol is higher than methoxy methane, why?

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8. Phenol is more acidic than ethanol.

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9. Explain why orthonitrophenol is more acidic than orthomethoxyphenol?





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10. 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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11. Draw the structure of all isomeric alcohols of molecular formula $C_4H_{10}O$ and give their IUPAC names.



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12. What is meant by Hydroboration - oxidation reaction? Illustrate it with an example.

(b) Predict the major product of acid catalysed dehydration of 1 - methylcyclohexanol.



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13. Write the reaction of phenol with :

(i) Br_2 water

(ii) Methyl chloride in the presence of anhydrous $AlCl_3$

(iii) H_2SO_4 at 298 K.



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



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



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16. 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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17. Explain the following :

(i) o - nitrophenol is more acidic than meta - nitrophenol.

(ii) Phenol gets coloured on long standing.

(iii) o - nitrophenol is steam volatile while, p - nitro - phenol is not.

(iv) Phenol does not undergo substitutions at the carbon oxygen bond.



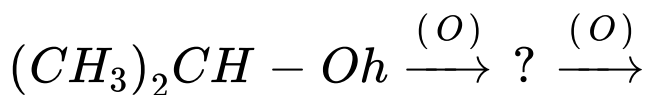
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18. (a) Explain :

(i) Kolbe's reaction

(ii) Reimer - Tiemann's reaction.

(b) Complete the following :



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19. What happens when phenol is treated with

:

(a) Zinc dust

(b) Br_2 water

(c) Chromic acid?



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20. What happens when phenol is treated with

:

(a) CO_2 at 4 - 7 atm pressure (b) Br_2 / CS_2 .

(c) $CHCl_3 / NaOH$ at 340 K

Give reactions also.



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21. Write reaction and condition for the following conversions :

(i) Ethanal to ethanol

(ii) Phenol into salicylic acid (Kolbe's reaction)

(iii) 2 - Propanone into 2-methyl -2- propanol.



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Long Answer Type Questions

1. Give preparation of Phenol from (i) Alkali fusion of Sulphonates and

(ii) Cumene. Write its chemical reactions with

(i) Acid chloride,

(ii) Br_2 – water and

(iii) Methyl chloride.



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2. Give two reactions that show the acidic nature of phenol.



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3. Briefly explain the acidic nature of phenols.



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4. Briefly explain the acidic nature of phenols.



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5. 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 position in benzene ring.



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6. State the important physical properties of phenols.



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7. Describe the chemical properties of phenols.



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