



CHEMISTRY

BOOKS - JMD CHEMISTRY (PUNJABI ENGLISH)

Haloalkanes and Haloarenes

Exercise

1. Which of the following reagent cannot be used for preparing alkyl chloride from alcohol

?

A. $\text{HCl} + \text{anhyd. ZnCl}_2$

B. NaCl

C. PCl_5

D. SOCl_2

Answer: B



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2. Carbon atom holding halogen in aryl halides is:

A. sp^2 – Hybridized

B. sp^3 – Hybridized

C. sp – Hybridized

D. sp^3d – Hybridized

Answer: A



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3. (Which of the following with aqueous KOH will give acetaldehyde ?

A. 1,2-Dichloroethane

B. 1,1-Dichloroethane

C. Chloroacetic acid

D. Ethyl chloride

Answer: B



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4. 1-Chlorobutane on reaction with alcoholic potash gives

- A. But-1-ene
- B. Butan-1-ol
- C. But-2 - ene
- D. Butan-2-ol.

Answer: A



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5. Ethyl chloride on treatment with aqueous alkali give: Ethane, Ethene, Ethanal, Ethanol.

A. Ethane

B. Ethene

C. Ethanal

D. Ethanol

Answer: D



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6. How many chiral carbon atoms are present in 2, 3, 4- trichloropentane ?

A. three

B. two

C. one

D. four

Answer: B



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7. The reaction of toluene with chlorine in the presence of ferric chloride gives mainly

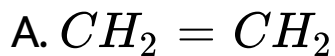
- A. m-chlorotoluene
- B. benzyl chloride
- C. o-and-p-chlorotoluene
- D. benzoyl chloride

Answer: C



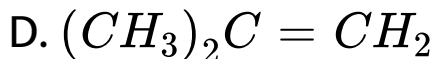
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8. The compound which reacts with HBr obeying Markownikoff's rule is



B. cis-2-Butene

C. trans-2-Butene



Answer: D



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9. The reaction between alkyl halides and sodium metal is called :

- A. wurtz reaction
- B. kolbe's reaction
- C. clemensen's reaction
- D. Finkelstein reaction

Answer: A



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10. Slow oxidation of chloroform in air leads to form:

A. formly chloride

B. formic acid

C. $COCl_2$

D. trichloroacetic acid

Answer: C



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11. Which of the following does not give iodoform test ?

A. Ethanol

B. Ethanal

C. Acetophenone

D. Benzophenone

Answer: D



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12. C—Cl bond of chlorobenzene in comparison C—Cl bond of methyl chloride is

- A. Longer and weaker
- B. stronger and weaker
- C. shorter and stronger
- D. longer and stronger

Answer: C



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13. C — X bond is strongest in:



Answer: C



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14. The final product formed by distilling ethyl alcohol with excess of

Cl_2 , and $Ca(OH)_2$, is: CH_3CHO , Cl_3CHO , $CHCl_3$, $(CH_3)_2O$.

A. CH_3CHO

B. Cl_3CHO

C. $CHCl_3$

D. $(CH_3)_2O$

Answer: C



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15. For converting aniline into chlorobenzene which of the following reagents is not used?



Answer: A



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16. Which metal is used in Wurtz reaction

A. Mg

B. K

C. Ca

D. Na

Answer: D



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17. Which metal is used in Ullman reaction: Na, Mg, Cu, Zn.

A. Na

B. Mg

C. Cu

D. Zn

Answer: C



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18. Which metal is used in Fittig reaction ?

A. Mg

B. K

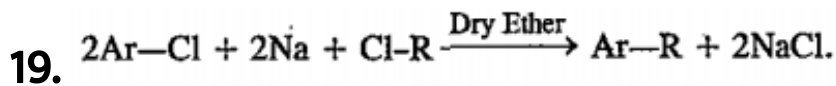
C. Na

D. Fe

Answer: C



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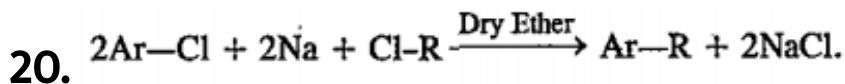
the reaction is :

- A. Wurtz reaction
- B. Fitting reaction
- C. finkelstein reaction
- D. Frankland reaction

Answer: A



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the reaction is :

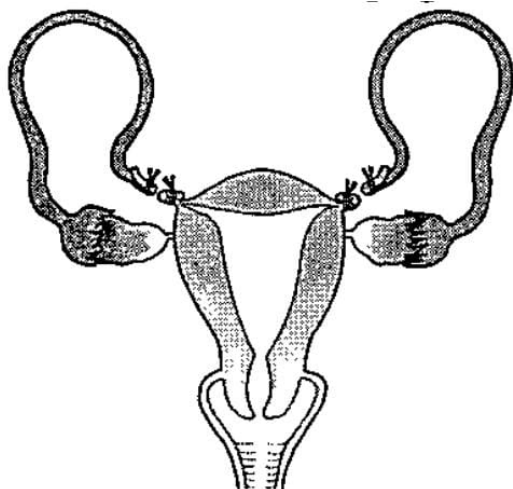
- A. Wurtz reaction
- B. Fitting reaction
- C. finkelstein reaction
- D. Wurtz-fitting reaction

Answer: D



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21. what does the following figure depict?



- A. Wurtz reaction
- B. Fitting reaction
- C. finkelstein reaction
- D. Frankland reaction

Answer: B



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22. Benzyl chloride is an aryl hlide



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23. The p-isomer of dichlorobenzene has higher melting point than O-and M-isomer.
Why ?



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24. 1, 2-Dichloroethane is a gem-dihalide.

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25. Allyl bromide is 3-bromopropene.

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26. Chloroform is dichloromethane.



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27. IUPAC name of benzyl chloride is chlorophenylmethane.



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28. Benzyl chloride and o-chlorotoluene are isomers.



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29. IUPAC name of methylene chloride is dichloromethane.



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30. common name of chloroethene is allyl chloride.



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31. out of

$CH_3 - F$, CH_3Cl , $CH_3 - BR$, and $CH_3 - I$,

$CH_3 - Cl$ has highest dipole moment.



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32. Neopentane on photochemical chlorination gives three isomeric monochlorides.



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33. Addition of

Br_2 to ethene in

CCl_4 gives vic-dibromide.



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34. With the help of resonance show that aryl halides are lesser reactive than alkyl halides.



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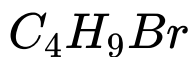
35. Draw the structures of all the eight structural isomers that have the molecular formula

$C_5H_{11} - Br$. Name each isomer according to IUPAC system and classify them as primary, secondary or tertiary bromide.



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36. Write the isomers of the compound having the formula



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37. Write down following name reaction :

Hunsdiecker reaction



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38. Write the following reactions:

Finkelstein reaction



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39. Explain the following reaction reaction :

Sandmeyer's reaction.



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40. Write the following reactions :

Gattermann reaction



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41. Explain the following reactions:

Balz Schiemann reaction.



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42. Why is sulphuric acid not used during the reaction of alcohols with KI ?



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43. Write the following reactions :

Swarts reaction



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44. Write the following reactions :

Groves process.



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45. The dipole moment of chlorobenzene is lower than that of cyclohexyl chloride. Explain.



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46. Alkyl halides though polar, are immiscible with water, why ?



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47. Define Optical activity.



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48. Explain the term dextrorotatory and laevorotatory



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49. state and explain the terms enantiomers
.How are two enantiomers identified ?



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50. What is a racemic mixture and racemization?
? What is resolution of a racemic mixture



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51. Define specific rotation



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52. Define chirality and chiral center (or chiral carbon atoms)





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53. Haloarenes are insoluble in water but soluble in benzene. Explain.



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54. p-Dichlorobenzene has higher m.p. and lower solubility than those of o and m-isomers. Discuss



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55. What are ambident nucleophiles ? Explain with an example.



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56. Discuss nucleophilic substitution reaction S_N2 of alkyl halide.



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57. Explain with example S_N1 mechanism.



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58. Differentiate between (Substitution nucleophilic unimolecular reaction) and (Substitution nucleophilic bimolecular reaction) reactions.



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59. Explain why alkyl halides undergo nucleophilic substitution reaction more easily

as compared to aryl halides ?



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60. Why haloalkanes are more reactive than haloarenes towards nucleophilic substitution reaction ?



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61. Why does electrophilic substitution take place at ortho and para positions in

haloarenes ?



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62. Write Wurtz reaction.



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63. Write the following reaction:

Wurtz Fittig Reaction



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64. Write the following reactions :

Friedel Craft alkylation.



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65. Write Fittig reaction.



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66. Write a chemical reaction to illustrate saytzeff's



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67. Why the treatment of alkyl chloride with silver nitrite forms nitroalkane and with potassium nitrite forms Alkyl nitrite ?



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68. The treatment of alkyl chlorides with aqueous KOH leads to the formation of

alcohols but in the presence of alcoholic KOH, alkenes are major product. Explain.



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69. Haloalkanes react with potassium cyanide (KCN) to give alkyl cyanide, but gives alkyl isocyanide with silver cyanide (Ag CN).



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70. Although chlorine is an electron withdrawing group, yet it is ortho-, para-directing in electrophilic aromatic substitution reactions. Why ?



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71. Explain the following :

Hoffmann amonolysis



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72. Write the following reactions :

Carbylamine reaction.



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73. Write Ullmann reaction.



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74. Gives uses and harmful effects of freon 12,
DDT, Carbon tetrachloride, Chloroform and

Iodoform



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75. Write the reactions involved in iodoform test.



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76. Why a small amount of ethyl alcohol is usually added to chloroform bottles ?



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77. Why is chloroform stored in dark coloured bottles ?



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78. What happens when chloroform is heated with silver powder ?



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79. Write short note on Haloform reaction.



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80. How can you convert chlorobenzene to DDT.



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