CHEMISTRY

BOOKS - CHETANA PUBLICATION

HALOGEN DERIVATIVES

Exercise

1. What are hydrocarbons ?

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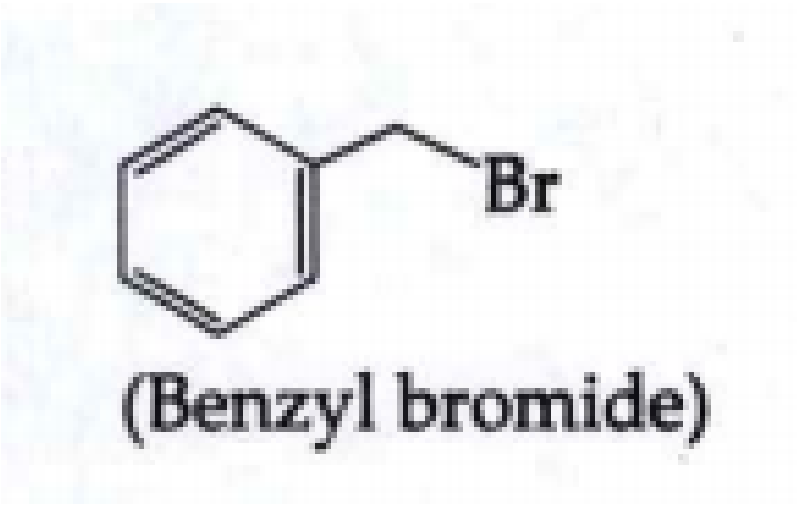
2. Identify the functional group in the following compounds.



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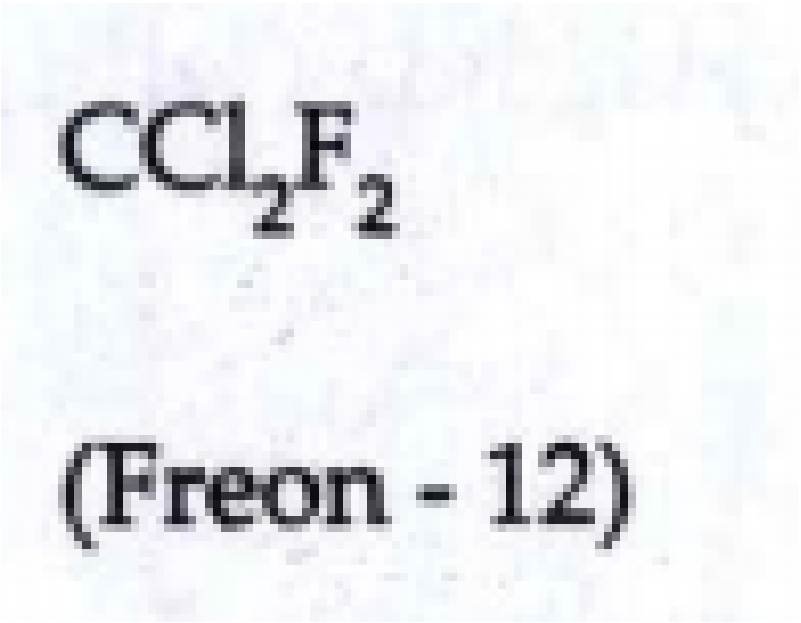
3. Identify the functional group in the following compounds.



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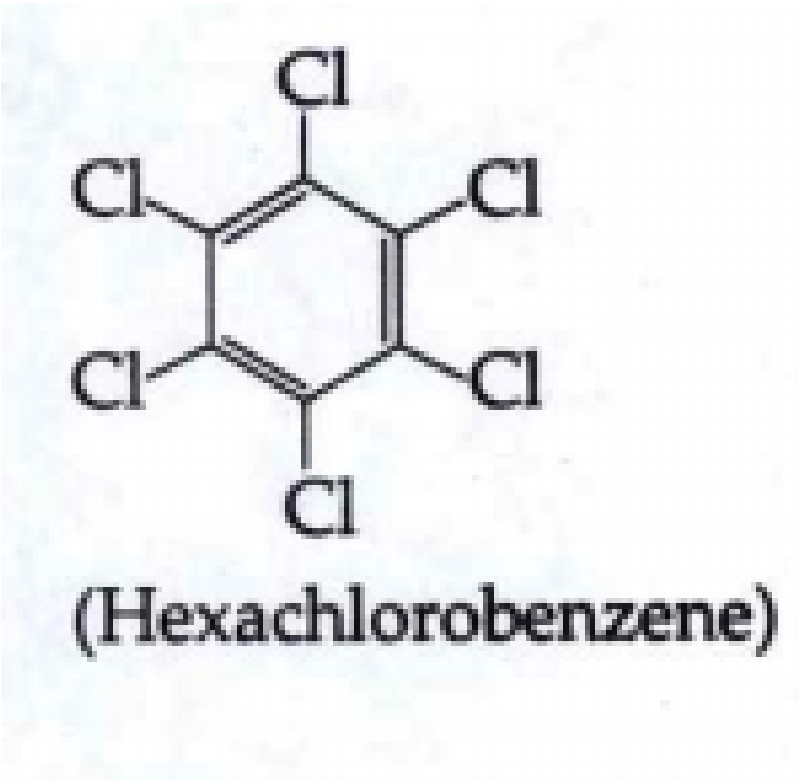
4. Identify the functional group in the following compounds.



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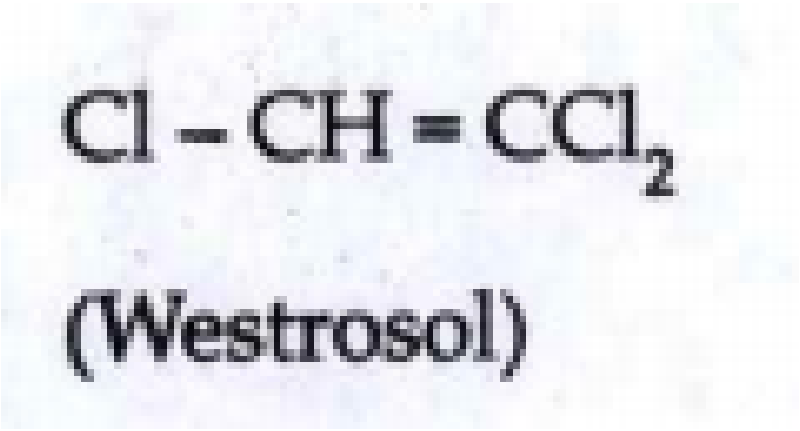
5. Identify the functional group in the following compounds.



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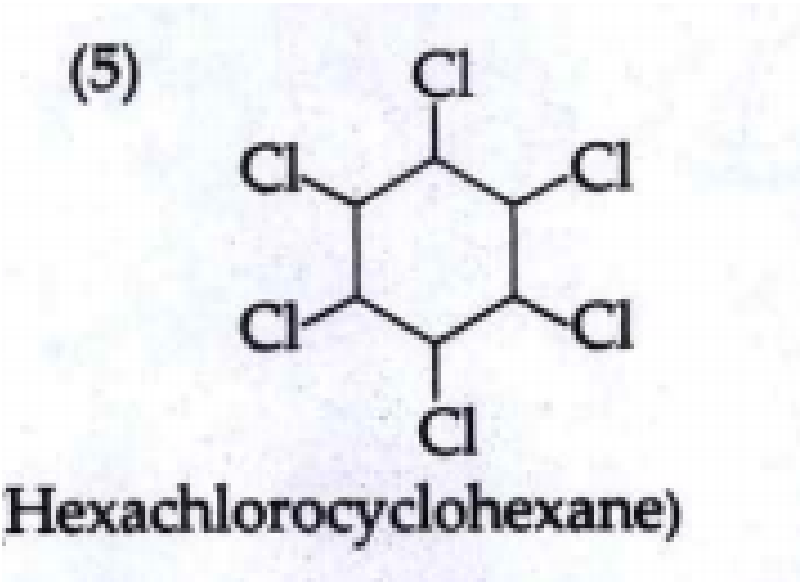
6. Identify the functional group in the following compounds.



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7. Halogen derivatives of alkanes are classified according to _____.

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8. What are alkyl halides (haloalkanes)?

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9. Write the classification of alkyl halides/haloalkanes depending upon the carbon atom to which the halogen atom.

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10. What are alkyl halides (haloalkanes)?

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11. What are benzylic halides?

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12. What are vinylic halides?

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13. What are haloalkynes?

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14. What are aryl halides.OR What are haloarenes?

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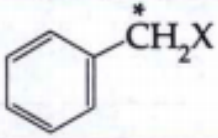
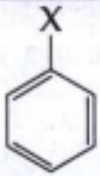
15. Match the columns.

Column 'A'	Column 'B'
(1) $CH_3-\overset{*}{C}H_2-X$	(a) Tertiary carbon
(2) $CH_3-\overset{*}{\underset{\underset{X}{|}}{C}}H-CH_3$	(b) Aryl carbon
(3) $CH_3-\overset{CH_3}{\overset{|}{\underset{\underset{X}{|}}{C^*}}}-CH_3$	(c) Vinylic carbon
(4) $CH_2=CH-\overset{*}{C}H_2-X$	(d) Secondary carbon
(5) $\overset{*}{C}H_2=CH-CH_2X$	(e) Primary carbon
(6) 	(f) Allylic carbon
(7) 	(g) Benzylic carbon

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16. Match the columns.

Column 'A'	Column 'B'
(1) $CH_3\underset{\underset{X}{|}}{CH}-CH_3$	(a) Vinyl halide
(2) $CH_2=CH-CH_2X$	(b) Alkyl halide
(3) $CH_2=CH-X$	(c) Allyl halide
	(d) Benzyl halide
	(e) Aryl halide

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17. How are Haloalkanes classified on the basis of number of Halogens?

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18. In IUPAC system of nomenclature does the functional group 'halogen' appear as a suffix or prefix?

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19. What are the trivial names of laboratory solvents $CHCI_3$ and CCI_4?

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20. Write a note on Nomenclature of Alkyl halides

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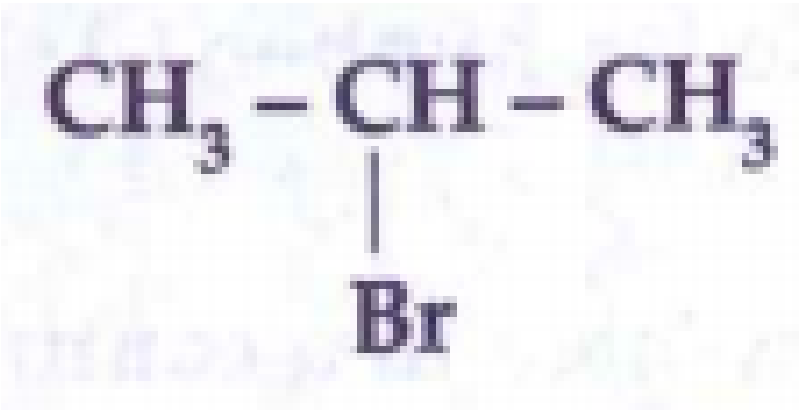
21. Write IUPAC names of the following.



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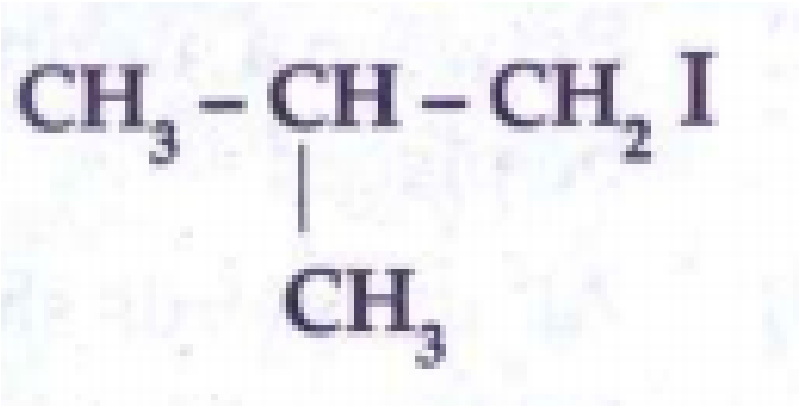
22. Write IUPAC names of the following.



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23. Write IUPAC names of the following.

$CH_3 - CH = CH - CH_2CI$

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24. Write IUPAC names of the following.

$CH_3 - C \equiv C - CH_2 - Br$

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25. Write IUPAC names of the following.

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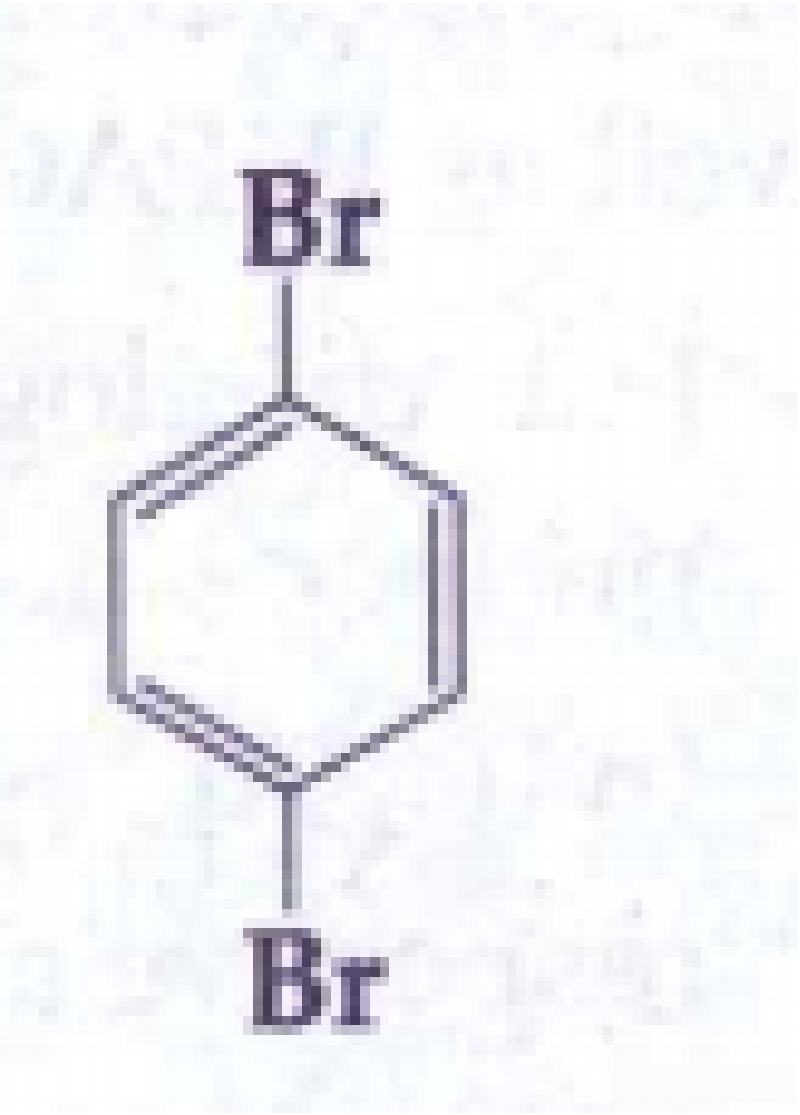
26. Write IUPAC names of the following.



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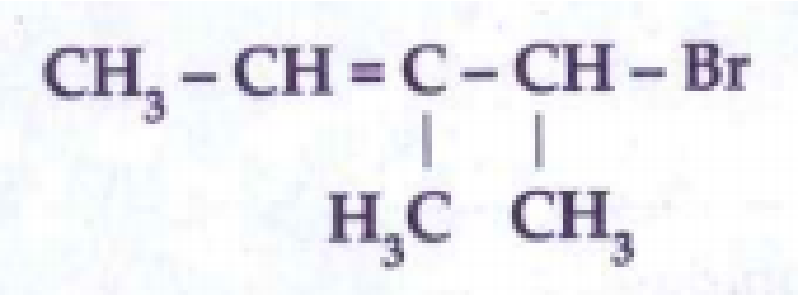
27. Do as directed.Write IUPAC name of the following compounds:



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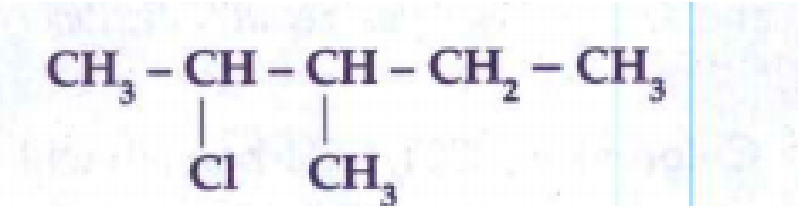
28. Do as directed.Write IUPAC name of the following compounds:



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29. Write structures of:(1) 2-iodo-3-methylpentane

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30. Write structures of: (2) 3-chlorohexane

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31. Write structures of: (3) 1-chloro-2,2-dimethylpropane

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32. Write structures of: (4) 1-chloro-4-ethyl cyclohexane

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33. Write structures of: (5) 3-chloro-3-ethylhex-1-ene

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34. Write structures of: (6) 1,3,5-tribromobenzene

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35. Write structures of: (7) 1-Iodo-2,3-dimethyl butane

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36. Give the structures of the following compounds: (1) 3-Bromo-2-methylpentane

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37. Give the structures of the following compounds:(2) 2-Bromo-3-ethyl-2-methylhexane

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38. Give the structures of the following compounds:(3) 1-Chlorobutane

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39. Give the structures of the following compounds: 1,3,5-Trichlorobenzene

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40. Give the structures of the following compounds: (5) p-dichlorobenzene

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41. Write structures and IUPAC names of all possible isomers of $C_5H_{11}Br$ and classify them as $1^\circ/2^\circ/3^\circ$

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42. Write IUPAC names of: (1) $CH_2 = CH - CI$

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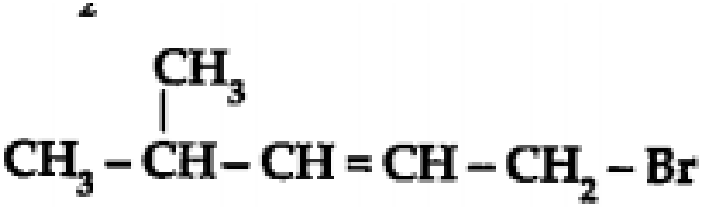
43. Write IUPAC names of: (2)



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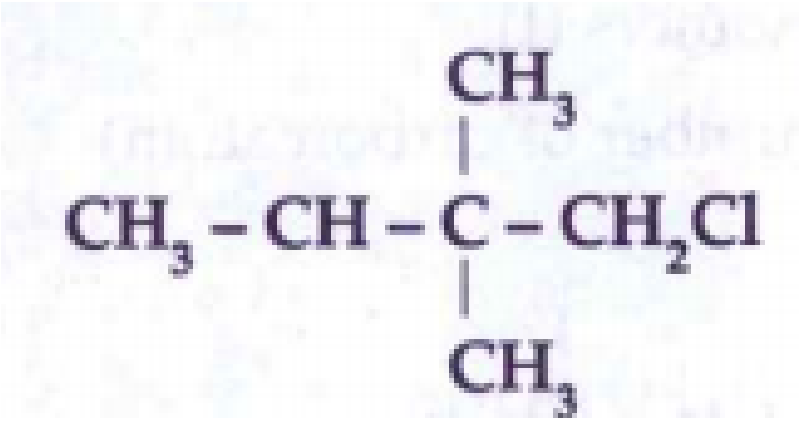
44. Write IUPAC names of the following compounds: (1)



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45. Write IUPAC names of: (1) $CH_2 = CH - CI$

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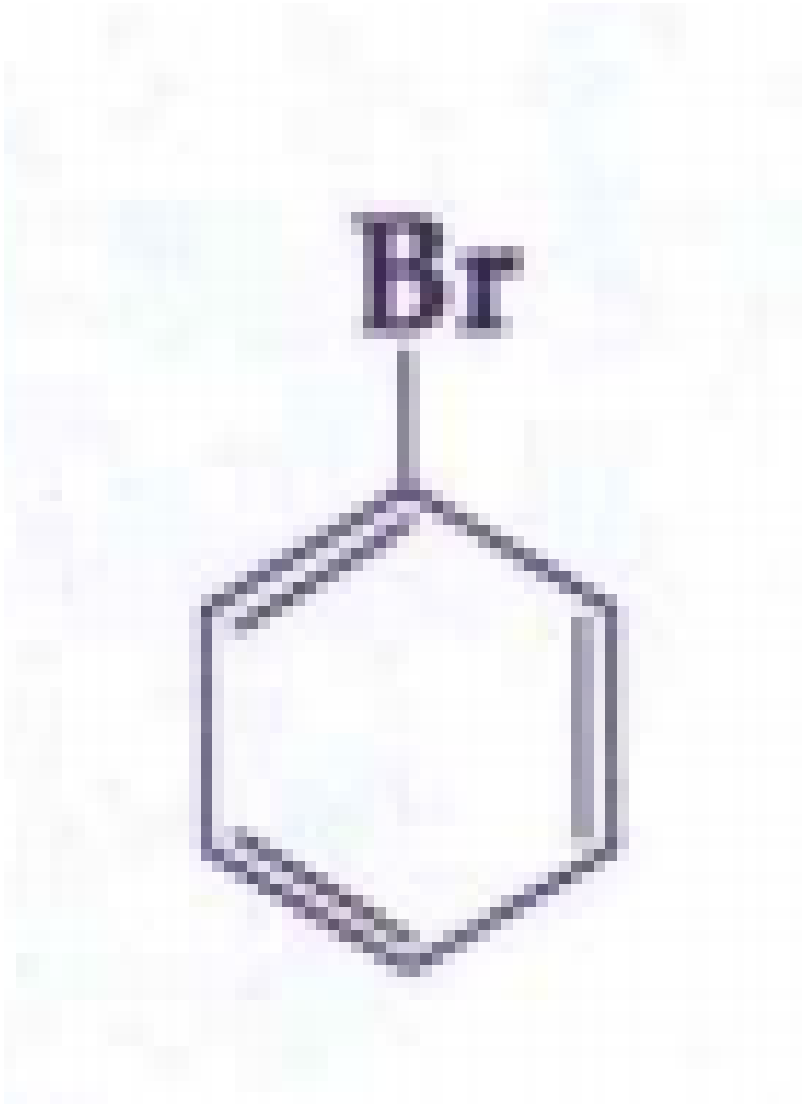
46. Write IUPAC names of the following compounds: (3)



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47. Write IUPAC names of the following compounds: (4)

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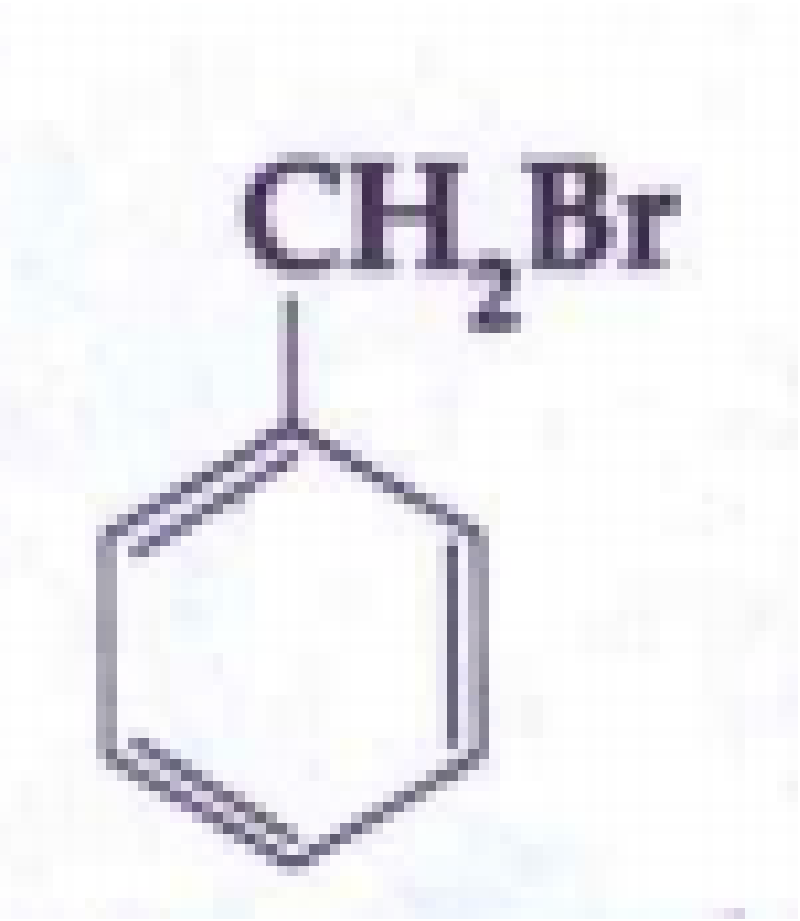
48. Write IUPAC names of the following compounds: (5)



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49. Write IUPAC names of the following compounds: (6) sec-butyl chloride

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50. Write IUPAC names of the following compounds: (7) neopentyl bromide

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51. Write IUPAC names of the following compounds: (8) t-butyl iodide

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52. Write IUPAC names of the following compounds: (9) isopropyl bromide

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53. How are alkyl halides prepared from alcohol by using hydrogen chloride.

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54. How are the following compounds obtained from alcohols:Ethyl chloride (Chloroethane)

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55. How are the following compounds obtained from alcohols: Isopropyl chloride (2-Chloropropane)

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56. How are the following compounds obtained from alcohols: Tert-butyl chloride (2-Chloro-2-methylpropane)

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57. How are alkyl bromides prepared with Hydrobromic acid?

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58. How are the following compounds prepared from alcohols? (2) Isopropyl bromide (2-Bromopropane)

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59. How are the following compounds prepared from alcohols? (2) Isopropyl bromide (2-Bromopropane)

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60. How are the following compounds prepared from alcohols? (3) Tert-butyl bromide (2-Bromo-2-methylpropane)

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61. How are alkyl iodides prepared from alcohol using HI?

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62. What is the action of concentrated H_2SO_4 on HBr and HI

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63. Write reaction showing conversion of benzonitrile into benzoic acid.

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64. How are alkyl halides prepared from alcohol by using PX_5(Phosphorous pentahalide)?

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65. How are alkyl halides prepared from alcohol by using PX_5(Phosphorous pentahalide)?

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66. How are alkyl chlorides prepared from alcohol by using thionyl chloride $(SOCI_2)$?

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67. Write the structure of the major organic product of the following reaction.

$CH_3CH_2CH_2OH + SOC1_2 \rightarrow (NCERT)$

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68. What is the advantage of step wise energy release in respiration?

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69. Complete the following chemical reactions:

$CH_4 + Cl_2 \xrightarrow{light}$

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70. Identify the products of the following reactions.

$CH_3 - CH = CH_2 + HBr \xrightarrow{Peroxide} ?$

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71. Identify the products of the following reactions.

$CH_2 = CH - CH_3 + Br_2 \xrightarrow{CCl4} ?$

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72. Predict the products structure in the following reactions:

$C_6H_5 - CH_2 - CH_3 \xrightarrow[\Delta]{dil.KMnO_4} ?$

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73. What is meant by optical isomerism.

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74. Give the order of reactivity of haloacids towards alcohol .

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75. Write a note on Markownikov's rule.OR State and explain Markownikov's rule with examples.

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76. Write short note on peroxide effect.(Anti-Markownikoff's rule or Kharasch-Mayo effect)

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77. Write structures of:(1) 2-iodo-3-methylpentane

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78. Rewrite the following reactions by filling the blanks. (2)

$$(CH_3)_2C = CHCH_3 + HBr \xrightarrow{peroxide} \underset{(maj \text{ or })}{\ldots\ldots} + \underset{(\min \text{ or })}{\ldots\ldots}$$

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79. Rewrite the following reactions by filling the blanks. (2)

$$(CH_3)_2C = CHCH_3 + HBr \xrightarrow{peroxide} \underset{(maj \text{ or })}{\ldots\ldots} + \underset{(\min \text{ or })}{\ldots\ldots}$$

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80. Identify the products of the following reactions. $CH_3 - CH = CH_2 + HBr \xrightarrow{Peroxide} ?$

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81. What happens when Propylene is treated with Chlorine in an inert solvent like CCI_4?

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82. What happens when But-2-ene is treated with Bromine in an inert solvent like CCI_4?

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83. What happens when Propylene is treated with Chlorine in an inert solvent like CCI_4?

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84. What happens when an alkene having allylic carbon is heated with Br_2 orCI_2 at high temperatures?

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85. How is ethly bromide prepared from (1) ethane

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86. How is ethly bromide prepared from (1) ethane

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87. How are the following compounds prepared from alcohols? (1) Ethyl bromide (Bromoethane)

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88. Write a note on Swartz reaction.OR How will you convert Methyl bromide to methyl fluoride

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89. Write a note on IVF

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90. Write a note on Swartz reaction.OR How will you convert Methyl bromide to methyl fluoride

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91. Write a note on SCP.

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92. How are alkyl fluorides prepared from alkyl chlorides /bromides?

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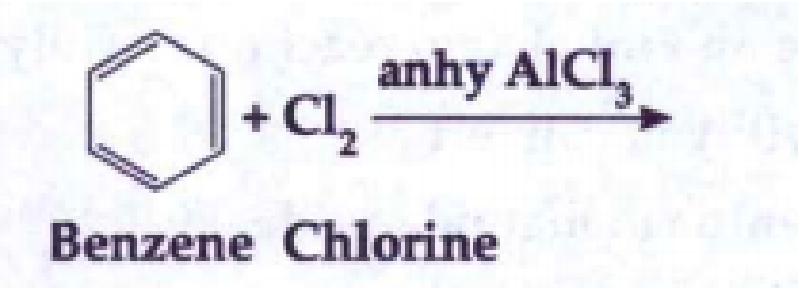
93. Identify the product of the following reaction.



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94. What are haloarenes? Give examples.

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95. Give the structure of p-dichlorobenzene.

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96. Write structures of: (6) 1,3,5-tribromobenzene

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97. Write structure of:m-dibromobenzene

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98. What type of reaction are shown by benzene?

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99. Explain the preparation of arly halides (haloarenes)using electrophilic substitution.

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100. How are arly chlorides and arly bromides prepared from benzene or its derivatived?

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101. What happens when toluene is brominated in presence of iron?

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102. After a chemical reaction the total mass of reactant and products

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103. Why is HNO_3 or HIO_3 added in the aromatic electrophilic substitution using iodine.

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104. Why is HNO_3 or HIO_3 added in the aromatic electrophilic substitution using iodine.

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105. How will you prepare chlorobenzene from aniline?

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106. Write a note on Sandmeyer's reaction. OR

How is aryl chloride or aryl bromide prepared from diazonium salt?

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107. Alkyl halides are moderately polar compounds.Give reason.

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108. Explain bond length of C-X bond in alkyl halides

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109. Explain Bond strenght of C-X bond in alkyl haides.

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110. Explain why the C-X bond strength decreases with an increases in size of halogen.

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111. Give reason:C-F bond is stronger than C-Br.

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112. Boiling points of alkyl halide is higher than those of corresponding alkanes.Give reason.

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113. Of the following alkyl halides CH_3F,CH_3CI,$CH_3Br$and CH_3I,which will have the higest boiling point.Justify your answer.

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114. Write the following compounds in the order of increasing boiling points.Justify your answer.CH_3F,CH_3CI,

$CH_3Br$and CH_3I

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115. Compare the boiling points of isopentyl bromide and neo-pentyl bromide.Justify your answer

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116. Birds are uricotelic in nature. Give reason.

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117. Compare the melting point of isomeric dihalobenzene.Give reason.

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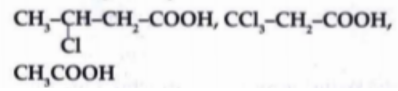
118. Arrange the following acids in order of their decreasing acidity.



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119. What is the relationship between Golgi apparatus and ER?

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120. What is meant by stereoisomerism?

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121. What is a Chiral Carbon atom?

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122. Define:Chiral Carbon atom.

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123. Write an example of a Chiral Carbon atom.

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124. What is meant by optical isomerism.

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125. What is meant by optical isomerism.

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126. Explain the terms:- Plane polarised light.

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127. Explaine optical activity of lactic acid.

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128. Define: Optical rotation

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129. An optically active compound

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130. Define: Laevorotatory compound

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131. Define: Laevorotatory compound

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132. An optically active halide when allowed to react with CN^- gives a racemic mixture. The halide is most likely to be _____.

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133. Draw structure of enantiomers of 2-bromobutane using wedge formula.

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134. State the characteristics of enantiomers.

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135. Name the material used in the construction of a Nicol prism/Polarizer

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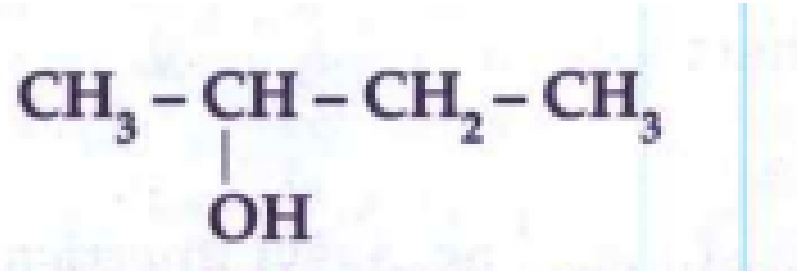
136. Identify the Chiral molecules from the following:



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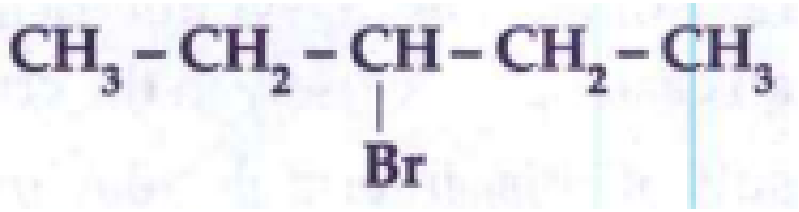
137. Identify the Chiral centre from the following:



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138. Identify the Chiral centre from the following:

$CH_3 - CH_2 - CH_2 - CH_2 - Br$

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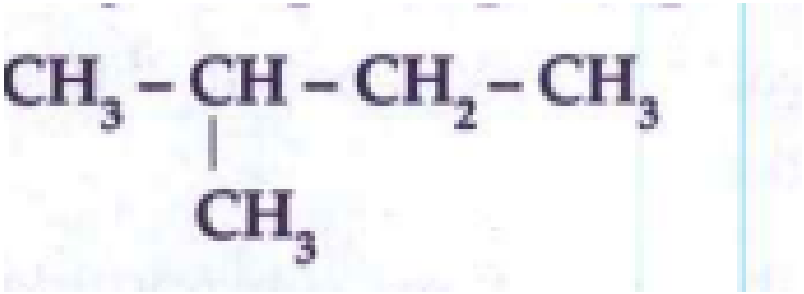
139. Identify the Chiral molecules from the following:



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140. Explain optical isomerism in 2-Chlorobutane.

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141. Explaine optical activity of lactic acid.

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142. Identify chiral and achiral molecules.

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143. The molecular formula of an acid which is optically active is $C_5H_{10}O_2$.Write its structure.

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144. Write the structure of the lowest molecular mass alcohol which shows chirality?

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145. Write the structure of an olefin (alkene) with molecular formula C_6H_{12} having a chiral carbon?

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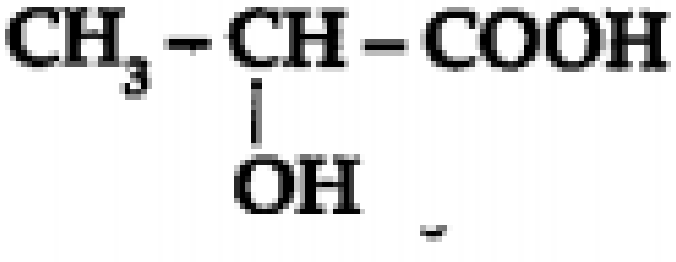
146. Draw structure of enantiomers of lactic acid



using Fischer projection formulae.

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147. Draw structure of enantiomers of 2-bromobutane using wedge formula.

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148. In a wedge formula,how are the following bonds represented? Bonds going below the plane of paper.

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149. In a wedge formula,how are the following bonds represented? Bonds projecting above the plane of paper.

Watch Video Solution

150. In a wedge formula,how are the following bonds represented? Bonds going below the plane of paper.

Watch Video Solution

151. In a wedge formula,how are the following bonds represented? Write one example to illustrate the above the plane of paper

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152. Complete the following reactions and explain optical activity of the products formed.Reaction of pent 1-ene with HBr

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153. Complete the following reactions and explain optical activity of the products formed. Pent-2-ene with HBr

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154. $C_6H_{12}(A)$ on treatment with HCl produced a compound Y,which is optically inactive.What is the structure of A?

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155. Write the enantiomeric forms of: Bromochlorofluoromethane

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156. Write the enantiomeric forms of: Butan-2-ol

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157. Write the enantiomeric forms of: Glyceraldehyde

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158. Write the enantiomeric forms of: Lactic acid

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159. What is meant by substitution reaction?

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160. Can you identify substitution reaction from the following?

$$CH_3 - CH_2 - OH + HCl \xrightarrow{ZnCl_2} CH_3 - CH_2 - Cl + H_2O$$

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161. Can you identify substitution reaction from the following? $CH_2 = CH_2 + HI \rightarrow CH_3 - CH_2 - I$

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162. Is the carbon carrying halogen in alkyl halides an electrophilic or a nucleophilic centre?

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163. Why does the C in C-X bond have a tendency to react with a nucleophile?

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164. Write the products of nucleophilic substitution reaction of alkyl halide with $NH_{3\,(alc)}$

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165. Name the factors on which the reactivity of alkyl halides in S_N2 reaction depend.

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166. Give the order of reactivity for S_N1 reaction in alkyl halides.

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167. Write the products of nucleophilic substitution reaction of alkyl halide with $NaOH_{aq}$ or KOH_{aq}

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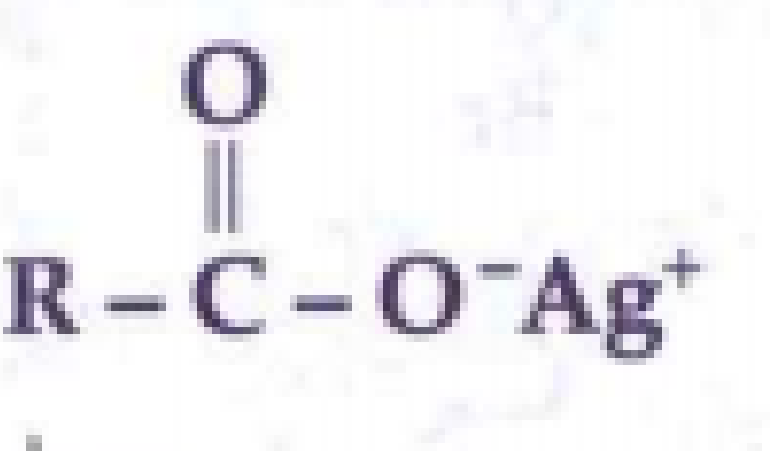
168. Write the products of nucleophilic substitution reaction of alkyl halide with



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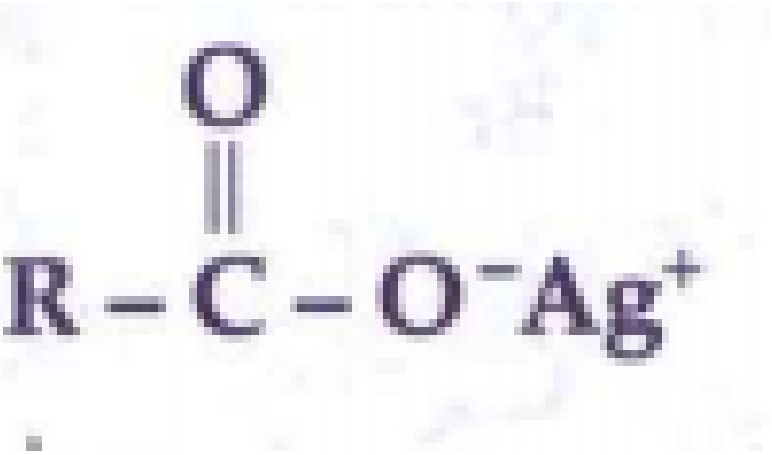
169. Write the products of nucleophilic substitution reaction of alkyl halide with



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170. Write the products of nucleophilic substitution reaction of alkyl halide with $NH_{3\,(alc)}$

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171. Write the products of nucleophilic substitution reaction of alkyl halide with $NaOH_{aq}$ or KOH_{aq}

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172. Write the products of nucleophilic substitution reaction of alkyl halide with $AgCN_{(alc)}$

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173. Write the products of nucleophilic substitution reaction of alkyl halide with $\overset{+}{K}\overset{-}{O} - N = O$

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174. Write the products of nucleophilic substitution reaction of alkyl halide with Ag-O-N=O

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175. What is the action of aqueous NaOH/KOH on methyl iodide

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176. What is the action of aqueous NaOH/KOH on ethyl bromide

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177. What is the action of aqueous NaOH/KOH on 1-cholorobutane

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178. What is the action of aqueous NaOH/KOH on 1-chloropropane

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179. Describe the action of Sodium alkoxide on alkyl halides.Sodium methoxide on methyl iodide

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180. Describe the action of Sodium alkoxide on alkyl halides.Sodium ethoxide on methyl bromide

Watch Video Solution

181. Describe the action of Sodium alkoxide on alkyl halides.Sodium ethoxide on isobutyl chloride

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182. Write a note on Willamson's Synthesis.

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183. How are alkenes prepared from alkyl halides?

Watch Video Solution

184. Describe the action of Silver salt of carboxylic acid (silver carboxylate) on alkyl halides.Action of silver acetate on 1-chlorobunne.

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185. Describe the action of Silver salt of carboxylic acid (silver carboxylate) on alkyl halides.Action of silver acetate on idomethane.

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186. Describe the action of Silver salt of carboxylic acid (silver carboxylate) on alkyl halides.Action of silver acetate on 1-chlorobunne.

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187. Write a note of formation of esters from alkyl halide.

Watch Video Solution

188. What is action alcoholic silver cyanide AgCN on alkyl halides. On methyl chloride

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189. What is action of excess of alcoholic ammonia on alkyl halides. On ethyl bromide

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190. Write a note on ammonolysis of alkylhalides, OR Write a note on alkylation of ammonia.

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191. Explain the formation of a primary amine from alkyl halides ammonolysis.

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192. Describe the action of alcoholic potassium cyanide $\left(KCN_{(alc)}\right)$ on alkyl halides On methyl iodide

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193. Describe the action of alcoholic potassium cyanide $\left(KCN_{(alc)}\right)$.on alkyl halides On ethyl bromide

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194. Describe the action of alcoholic potassium cyanide $\left(KCN_{(alc)}\right)$.on alkyl halides On n-butyl chloride

Watch Video Solution

195. How are alkyl cyanides prepared from alkyl halides.

Watch Video Solution

196. What is action alcoholic silver cyanide AgCN on alkyl halides. On methyl chloride

Watch Video Solution

197. What is action alcoholic silver cyanide AgCN on alkyl halides. On ethyl bromide

Watch Video Solution

198. How are alkyl isocyanides/Carbylamines prepared from alkyl halides.

Watch Video Solution

199. Describe the action of potassium nitrite (KNO_2) on alkly halides.On methyl chloride

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200. Describe the action of potassium nitrite (KNO_3) on alkly halides. On ethyl bromide

Watch Video Solution

201. Write a note on formation of alkyl nitrites from alkyl halides.

Watch Video Solution

202. Describe the action of potassium nitrite (KNO_2) on alkly halides.On methyl chloride

Watch Video Solution

203. How will you prepare nitroalkane from alkyl halides?

Watch Video Solution

204. How is nitromethane prepared from alkyl halide (Haloakane)?

Watch Video Solution

205. What is an Ambident Nucleophile?Explain with the help of an example.

Watch Video Solution

206. Alkyl halides when treated with alcholic solution of silver nitrite give nitroalkanes whereas with sodium nitrite they give alkyl nitrites Explain.

Watch Video Solution

207. What is meant by 'leaving group' in a nucleophillic substitution reaction.

Watch Video Solution

208. Explain the types of reflex action.

Watch Video Solution

209. Write the salient features of S_N2 machanism.

Watch Video Solution

210. Why is the reaction between methyl bromide and hydroxide ion called S_N2 reaction?

Watch Video Solution

211. Which step of the reaction determines the rate of a reaction?

Watch Video Solution

212. Write only the mechanism of S_N2 reaction using chemical equations.

Watch Video Solution

213. Write a note on the salient features of S_N1 mechanism.

Watch Video Solution

214. Write only the mechanism of S_N1 reaction using chemical equations.

Watch Video Solution

215. Why is the reaction between t-butyl bromide and hydroxide ion to give tert-butyl alcohol called S_N1 mechanisum.

Watch Video Solution

216. What is intermediate formed in $S_N1$reaction?

Watch Video Solution

217. Why are both the enantiomers formed in S_N1 reaction?

Watch Video Solution

218. Draw the Fischer projection formula of two products obtained when compound (A) reacts with $OH^{\odot}$ by S_N1 mechanism.

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219. Draw the Fischer projection formula of the products formed when compound (B) reacts with $OH^{\odot}$ by S_N2 mechanism.

Watch Video Solution

220. What are the factors Influencing S_N1 and S_N2 mechanism.

Watch Video Solution

Watch Video Solution

221. How many steps are invoved in $S_N1$mechanism?

Watch Video Solution

222. How many steps are invoved in $S_N2$mechanism?

Watch Video Solution

223. What are the factors Influencing S_N1 and S_N2 mechanism.

Watch Video Solution

224. Primary, secondary and tertiary of alkyl halides is _____.

Watch Video Solution

225. Distinguish between DNA and RNA.

Watch Video Solution

226. Give some examples of nucleophliles that are electrically neutral.

Watch Video Solution

227. Give some examples of anionic nucleophiles.

Watch Video Solution

228. What is difference between a base and a nucleophile

Watch Video Solution

229. How does solvent influence the rate of reaction in S_N1 and S_N2 mechanism?

Watch Video Solution

230. Which of the following is most reactive to give nucleophilic addition?

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231. Which is more nucleophilic: $H_2\ddot{\underset{\cdot\cdot}{O}}$ or $\ddot{N}H_3$?

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232. Which is better nucleophile:I^- orCI^- ?

Watch Video Solution

233. How does solvent influence the rate of reaction in S_N1 and S_N2 mechanism?

Watch Video Solution

234. Choose the member that will react faster from the following pairs by $S_N1$mechanism.2-iodo-2-methylbutane OR 2-iodo-3 methylbutane

Watch Video Solution

235. Choose the member that will react faster from the following pairs by $S_N1$mechanism.1-chloropropane OR 2-chloropropane

Watch Video Solution

236. Choose the member that will react faster from the following pairs by $S_N1$mechanism.2-iodo-2-methylbutane OR t-butylchloride

Watch Video Solution

237. Choose the member that will react faster from the following pairs by $S_N1$mechanism.1-Bromo-2,2-dimethyl propane OR 2-Bromo propane

Watch Video Solution

238. Predict the order of reactivity by S_N1OR S_N2 reactions.

$C_6H_5C(CH_3)(C_6H_5)CI$,C6H5-CH -(CH3)Cl , C6H5-CH2-Cl , C6H5-CH-C6H5-Cl

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239. Which is stronger base from the following? 1)aq.KOH 2) Alc. KOH

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240. How are alkenes prepared from alkyl halides?

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241. Write a note on β-elimination or 1,2 elimination ?

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242. Explain dehydrohalogenation reaction?

Watch Video Solution

243. Describe the action of alcoholic potassium hydroxide on:ethyl bromide

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244. Describe the action of alcoholic potassium hydroxide on:n-propyl bromide

Watch Video Solution

245. Describe the action of alcoholic potassium hydroxide on:isopropyl bromide

Watch Video Solution

246. Describe the action of alcoholic potassium hydroxide on:tert-butyl bromide

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247. Write a note on Saytzeff elimination.

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248. State Saytzeff rule and give one example to illustrate it.

Watch Video Solution

249. Write the stability order of alkyl substituted alkenes.

Watch Video Solution

250. What is Grignard reagent?

Watch Video Solution

251. How are Grignard reagents prepared?

Watch Video Solution

252. Reactions involving Grignard reagent must be carried out under anhydrous conditions.

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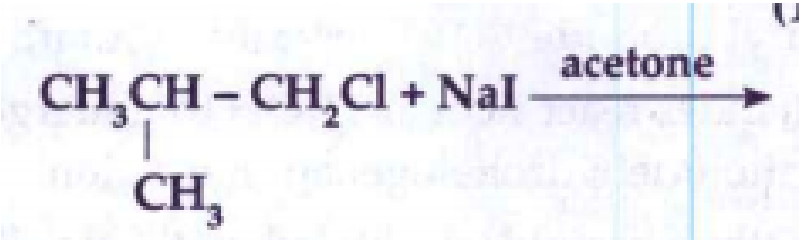
253. Write a note on Wurtz reaction.

Watch Video Solution

254. Write structure and IUPAC name of the major product in each of the following reaction.



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255. Write structure and IUPAC name of the major product in each of the following reaction. $3CH_3CH_2Br + SbF_3 \rightarrow$

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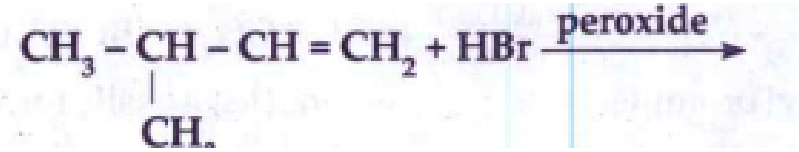
256. Write structure and IUPAC name of the major product in each of the following reaction.



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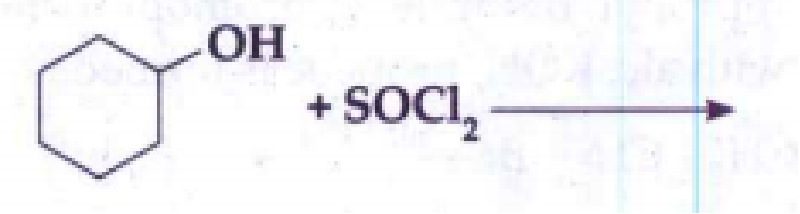
257. Write structure and IUPAC name of the major product in each of the following reaction.



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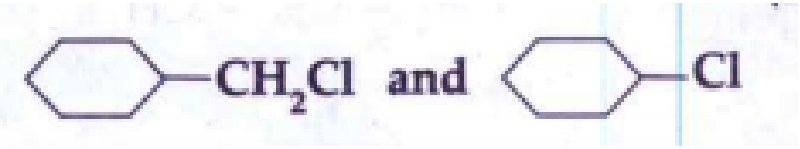
258. Which one compound from the following pairs would undergo S_N2 faster than the other?



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259. Which one compound from the following pairs would undergo S_N2 faster than the other? $CH_3CH_2CH_2I$ and $CH_3CH_2CH_2CI$

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260. Complete the following reactions giving major product.

$$CH_3CH = CH_2 \xrightarrow[peroxide]{HBr} A \xrightarrow{alc.KOH} B$$

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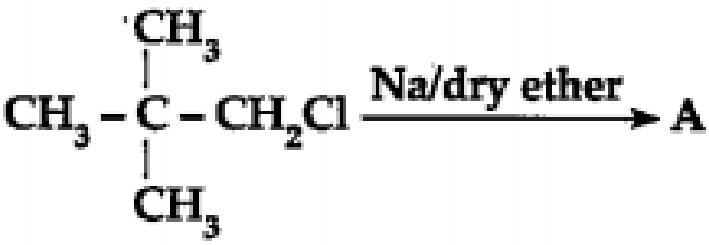
261. Complete the following reactions giving major product.



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262. Convert the following Propene to propan-1-ol

$CH_3CH = CH_2 \rightarrow CH_3CH_2CH_2OH$

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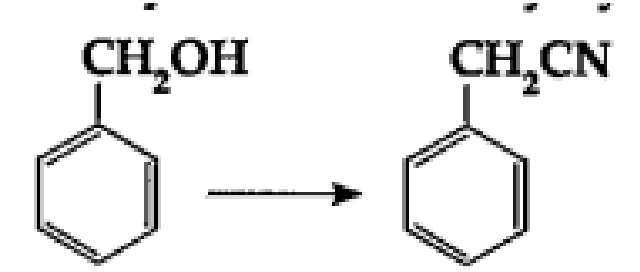
263. Convert the following Benzyl alcohol to benzyl cyanide



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264. Convert the following Ethanol to propane nitrile

$CH_3CH_2OH \rightarrow CH_3CH_2CN$

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265. Convert the following But -1- ene to n-butyl iodide

$CH_3CH_2CH = CH_2 \rightarrow CH_3CH_2CH_2CH_2I$

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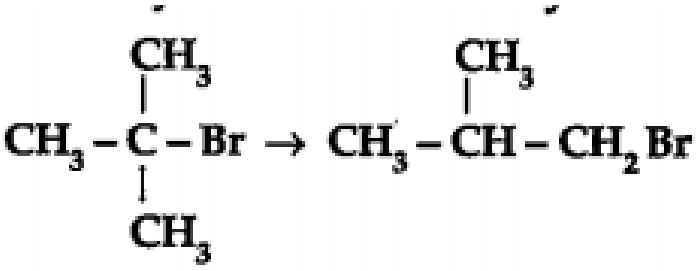
266. Convert the following tert-butyl bromide to isobutyl bromide



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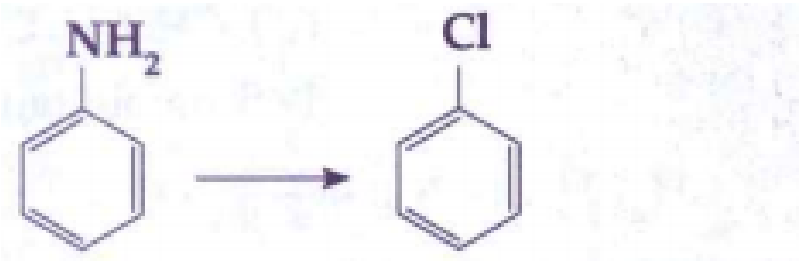
267. Convert the following Aniline to chlorobenzene



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268. HCI is added to a hydrocarbon 'A'$(C_4H_8)$to give a compound 'B'which on hydrolysis with aqueous alkali forms tertiary alcohol 'C' $(C_4H_{10}O)$.Identify 'A','B' and'C'.

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269. Complete the following reaction sequences by writing the structural formulae of the organic compounds 'A'.'B' and

'C'.$2-Bromobutane \xrightarrow{alc.KOH} A \xrightarrow{Br_2} B \xrightarrow{NaNH_2} c$

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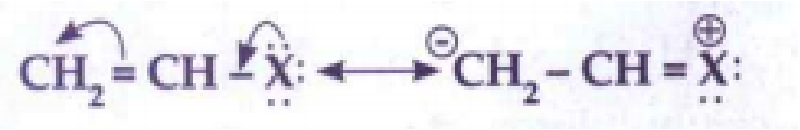
270. Observe the following and answer the question given below.



Comment on the bond length of C-X bond in it.

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271. Give the structural formula and IUPAC name of isobutyl bromide.

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272. Write balanced chemical equations for the following.Methyl bromide on silver propanote.

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273. Write balanced chemical equations for the following.How is propene converted into 1-bromopropane and 2-bromopropane.

Watch Video Solution

274. Identify A and B in the following reactions.

$$CH_3 - CH = CH_2 \xrightarrow{HBr} A \xrightarrow{alc.KOH} B$$

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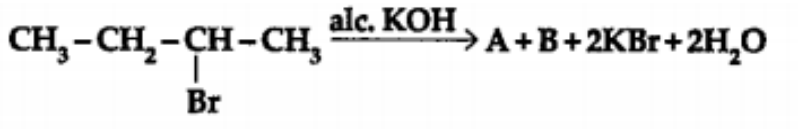
275. Identify A and B in the following reactions.



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276. Identify A and B in the following reactions.

$$CH_3Br + Mg \xrightarrow{dryether} A \xrightarrow[H^+ / H_2O]{dryether} B + Mg(Br)OH$$

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277. Identify A and B in the following reactions.

$$CH_3CH_2Br + AgCN \xrightarrow{\Delta} A \xrightarrow{Na / C_2H_3OH} B$$

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278. Write the structure of:3-Chloro-3 ethyl hex-1-ene

Watch Video Solution

279. Write a note on Wurts-Fittig reaction.

Watch Video Solution

280. How will you convert Chlorobenzene into biphenyl.

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281. What is the resonance ?

Watch Video Solution

282. Draw resonance structure of bromobenzene.

Watch Video Solution

283. Identify the type of hybridization of carbon to which halogen is attached in haloarene?

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284. Give reason : Haloarenes are less reactive than haloalkane.

Watch Video Solution

285. Give Reason : Planets do not twinkle.

Watch Video Solution

286. How can you increase the reactivity of haloarenes towards substitution reaction?

Watch Video Solution

287. What is the effect of electron withdrawing group at meta position on the reactivity of haloarenes towards substitution reaction?

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288. How will you carry out the following conversions ? p-nitrochlorobenzene to p-nitrophenol

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289. How will you carry out the following conversions?2-4-dinitrochlorobenzene to 2,4-dinitrophenol

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290. How will you carry out the following conversions?2,4,6-trinitrochlorobenzene to 2,4,6-trinitrophenol

Watch Video Solution

291. What happens when Chlorobenzene is treated with aqueous sodium hydroxide?

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292. What is an electrophile?

Watch Video Solution

293. Give some examples of electrophiles.

Watch Video Solution

294. What type of reaction are shown by benzene?

Watch Video Solution

295. Explain the following substitution reaction of Chlorobenzene.Halogenation

Watch Video Solution

296. Explain the following substitution reaction of Chlorobenzene.Nitration

Watch Video Solution

297. Explain the following substitution reaction of Chlorobenzene.Sulphonation

Watch Video Solution

298. Write note on Friedek Crafts reaction on anisole.

Watch Video Solution

299. In electrophilic substitution of aryl halides,the para product predominates.Give reason.

Watch Video Solution

300. Give the uses (any two)of the following.Dichloromethane/Methylene dichloride (CH_2CI_2)

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301. Give the uses (any two)of the following.Chloroform $(CHCI_3)$

Watch Video Solution

302. Give the uses (any two)of the following.Carbon tetrachloride (CCl_4)

Watch Video Solution

303. Give the uses (any two)of the following.Iodoform(CHI_3)

Watch Video Solution

304. Give the uses (any two)of the following.Freons

Watch Video Solution

305. Give the uses (any two)of the following.Dischlorodiphenyl trichloro ethane (DDT)

Watch Video Solution

306. Give structurte of DDT.

Watch Video Solution

307. What is freons?

Watch Video Solution

308. Give an example of a Freon (CFC)

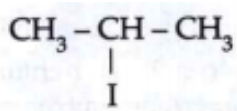
Watch Video Solution

309. $CH_3 - CH = CH_2 \xrightarrow[peroxide]{HI}$ The major product of the above reaction is _____.

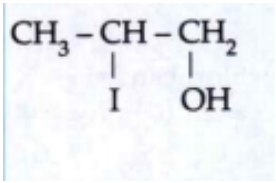
A. $I - CH_2 - CH = CH_2$

B. $CH_3 - CH_2 - CH_2I$

C.



D.



Answer:

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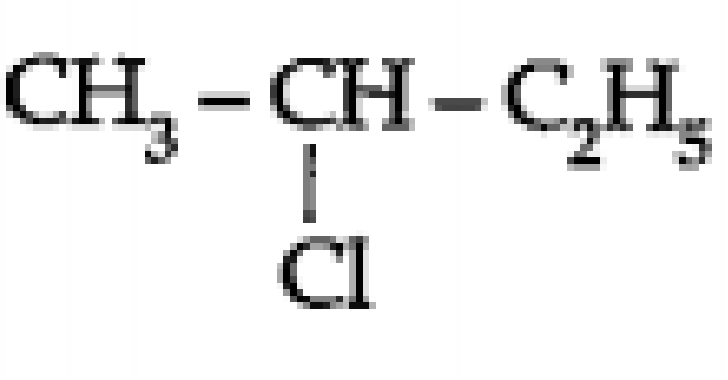
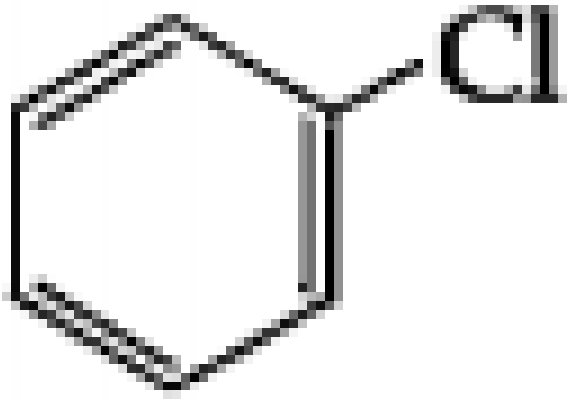
310. Which of the following is likely to undergo racemization during alkaline hydrolysis? (I)

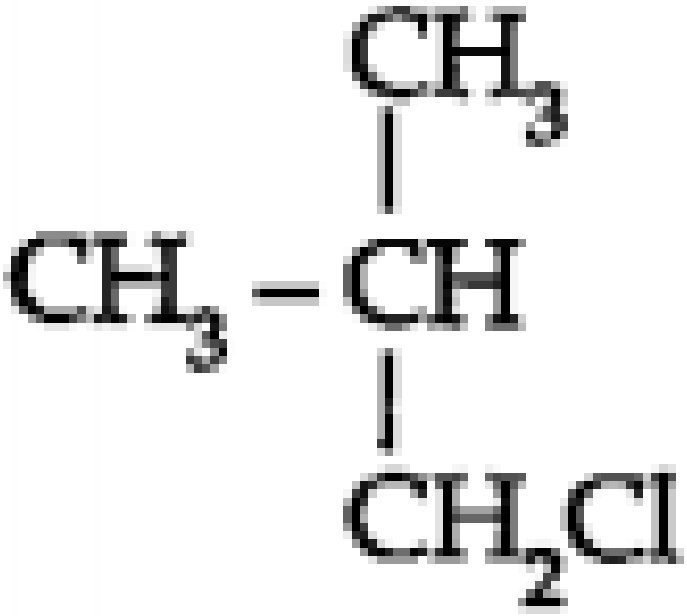


(II)

(III)



(IV)



A. Only I

B. Only II

C. II and IV

D. Only IV

Answer:

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311. The best methods for preparation of alkyl fluorides is____

A. Finkelstein reaction

B. Swartz reaction

C. Free radical fluorination

D. Sandmeyer's reaction

Answer:

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312. Identify the chiral molecule from the following.

A. 1-Bromobutane

B. 1,1-Dibromobutane

C. 2,3-Dibromobutane

D. 2-Bromobutane

Answer:

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313. Butanenitrile may be prepared by heating _____

A. propanol with KCN

B. butanol with KCN

C. n-butyl chloride with KCN

D. n-propyl chloride with KCN

Answer:

Watch Video Solution

314. Choose the compound from the following that react fastest by $S_N1$mechanism.

A. 1-iodobutane

B. 1-iodopropane

C. 2-iodo-2methylbutane

D. 2-iodo-3-methylbutane

Answer:

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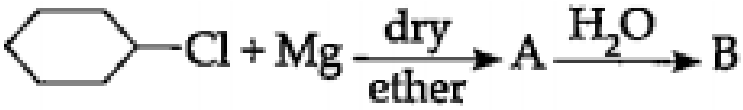
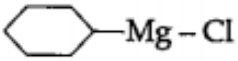
315.



The product 'B' in the above reaction sequence is,

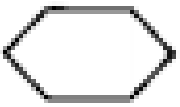
A.

B.



C.

D.



Answer:

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316. Which of the following is used as source of dichlorocarbene?

A. tetrachloromethane

B. chloroform

C. iodoform

D. DDT

Answer:

Watch Video Solution

317. The order of reactivity in nucleophilic substitution reaction is ____

A. $CH_3F < CH_3Cl < CH_3l < CH_3Br$

B. $CH_3F < CH_3Cl < CH_3Br < CH_3l$

C. $CH_3F < CH_3Br < CH_3Cl < CH_3l$

D. $CH_3I < CH_3Br < CH_3Cl < CH_3F$

Answer:

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318. Racemic mixture is___

A. Optically active

B. Optically dextro rotatory

C. Optically inactive

D. Optically laevorotatory

Answer:

Watch Video Solution

319. The number of asymmetric carbon atoms in glucose are

____

A. 2

B. 3

C. 4

D. 5

Answer:

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320. The geometry carbocation ion is _____

A. Tetrahedral

B. Planar

C. Linear

D. Pyramidal

Answer:

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321. In its nucleophilic substitution reaction,arylhalide resembles _____

A. Vinyl chloride

B. Allyl chloride

C. Benzyl chloride

D. Ethyl chloride

Answer:

Watch Video Solution

322. Which alkyl halide among the following compounds has the highest boiling point?

A. $(CH_3)_3CCI$

B. $CH_3CH_2CH_2CH_2CI$

C. $CH_3CH_2CH_2CI$

D. $CH_3CH(CH_3)CH_2CI$

Answer:

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323. It is difficult to break C-Cl bond in $CH_2 = CH - Cl$ due to _____

A. Hyperconjugation

B. Resonance

C. Electromeric effect

D. Inductive effect

Answer:

Watch Video Solution

324. The most reactive alkyl halide towards S_N2 reaction is_____

A. CH_3X

B. R_3CX

C. R_2CHX

D. RCH_2x

Answer:

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325. The number of electrons surrounding the carbonium ion is _____

A. 6

B. 8

C. 10

D. 7

Answer:

Watch Video Solution

326. The optically incactive compound is _____

A. Glucose

B. Lactic acid

C. 2-Chlorobutane

D. 2-Chloropropane

Answer:

Watch Video Solution

327. The hydrogen halide which does not obey Markownikoff's rule in presence of a peroxide is __

A. HCl

B. HBr

C. HF

D. HI

Answer:

Watch Video Solution

328. Which of the following reagents CANNOT be used to prepare an alkyl halide from an alcohol ?

A. $SOCl_2$

B. PCl_3

C. $HCl + ZnCl_2$

D. NaCl

Answer:

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329. The total number of electrons present in the central carbon atom of a free radical is _____

A. 7

B. 8

C. 9

D. 6

Answer:

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330. In which of the following pairs both are nucleophiles?

A. $BF_3, AlCl_3$

B. NO_2, Cl^-

C. CN^- , NH_3

D. Br_2, BCl_3

Answer:

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331. Which one of the following alkane is NOT formed in Wurtz reaction?

A. methane

B. ethane

C. propane

D. butane

Answer:

Watch Video Solution

332. According to R,S convention ,which of the following groups has higest priority?

A. CH_2OH

B. COOH

C. $COCH_3$

D. $COOCH_3$

Answer:

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Watch Video Solution

333. What is the IUPAC name of t-pentylbromide?

A. A. 2-Bromo-2-methylbutane

B. B. 2-Bromo-2-methylpropane

C. C. 1-Bromo-1-methylpropane

D. D. 2-Bromo-1-methylpropane

Answer:

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334. Alkane on halogenation gives____

A. Alkyl halide and unreacted halogen

B. Only required alkyl halide

C. Alkyl halide and unreacted alkane

D. A mixture of mono, di-, tri- and tetra halogen derivatives

Answer:

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335. Nylon is an example of_____.

A. The Wurtz reaction

B. Sandmeyer's reaction

C. Aldol condensation

D. Williamson's reaction

Answer:

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336. A racemic mixture consists of _____

A. 50% each of d and l isomers

B. Unequal amount of d and l isomers

C. Unknown amount of d and l isomers

D. Only d isomers

Answer:

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337. Give the uses (any two)of the following.Carbon tetrachloride (CCl_4)

A. antipyretic

B. antiseptic

C. dry cleaning

D. sedatives

Answer:

Watch Video Solution

338. Iodoform is used as _____

A. anaesthetic

B. antiseptic

C. dry cleaning

D. sedatives

Answer:

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339. Haloforms are trihalogen derivatives of _____.

A. C_2H_6

B. CH_4

C. C_3H_8

D. C_2H_4

Answer:

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340. Number of primary alkyl halides of $C_5H_{11}Br/Cl$ are

A. 1

B. 2

C. 3

D. 4

Answer:

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341. Reactions of alkanes with ____ are explosive.

A. F_2

B. Cl_2

C. Br_2

D. l_2

Answer:

Watch Video Solution

342. which of the following is the best reagent to convert alcohol into alkyl choride?

A. PCl_3

B. PCl_5

C. $SOCl_3$

D. $SOCl_2$

Answer:

Watch Video Solution

343. Which of the following is not nucleophilic reagent?

A. NH_3

B. `ROH

C. H_2O

D. $\overset{+}{N}H_4$

Answer:

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344. $C_2H_5O^-$ is ___ ion.

A. methoxide

B. ethoxide

C. carboxide

D. hexocide

Answer:

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345. Trichloroacetaldehyde is _____

A. CCl_3COCH_3

B. CCl_3COCCl_3

C. CCl_3CHO

D. $CHCl_3$

Answer:

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346. Isobutyl halide is___ alkyl halide.

A. primary

B. secondary

C. teritary

D. none of these

Answer:

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347. The IUPAC name of $CH_3(CH_3)CHCH_2CH_2Cl$ is ___

A. 1-Chloropentane

B. 2-Methyl-4-chlorobutane

C. 1-Chloro-3-methylbutane

D. 2-Methyl-3-chloropane

Answer:

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348. IUPAC name of the compound having the formula $CH_2 = CH - CH_2 - Cl$ is

A. 3-Chloro-1-propene

B. 3-Chloro-2-propene

C. 3-Chloro-3-propene

D. 3-Chloro-4-propene

Answer:

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349. Optically active compound is _____

A. 2- chloropentane

B. 2-chloropropane

C. 3-chloropentane

D. 1-chlorobutane

Answer:

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350. When 2-chlorobutane is treated with alcoholic KOH,the major product formed is____.

A. 1-butane

B. β-butylene

C. But-1-yne

D. 2-butyne

Answer:

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351. Sodium ethoxide reacts with iodoethane to yield,

A. CH_3CH_3

B. $C_2H_5OCH_3$

C. $C_2H_5OC_2H_5$

D. COOH

Answer:

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352. Which of the following is not polar?

A. $CHCl_3$

B. CCl_4

C. CH_2Cl_2

D. CH_3Cl

Answer:

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353. Which of the following is known as freon and is used as a refrigerant ?

A. CCl_2F_2

B. CCl_4

C. CF_4

D. $CHCl_3$

Answer:

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354. But-1-ene on reaction with HCl in the presence of benzoyl peroxide yields-

A. n-butyl chloride

B. isobutyl chloride

C. secondary butyl chloride

D. teriary butyl chloride

Answer:

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355. Carbon atom in Methyl carbonium ion contains how many pairs of electrons?

A. 4

B. 1

C. 3

D. 2

Answer:

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356. Conversion of ethyl bromide to ethylene is an example of

A. hydrohalogenation

B. intramolecular dehydrohalogenation

C. dehydration

D. hydration

Answer:

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357. How many different atoms /groups are attached to a chiral carbon?

A. one

B. two

C. three

D. four

Answer:

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358. Grignard reagent is prepared by the action of magnesium metal on

A. alcohol

B. phenol

C. alkyl halide

D. benzene

Answer:

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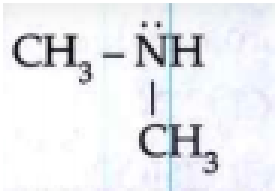
359. Which of the following is not a nucleophile?

A. $\ddot{N}H_3$

B. $\overset{+}{N}H_4$

C. $CH_3\ddot{N}H_2$

D.



Answer:

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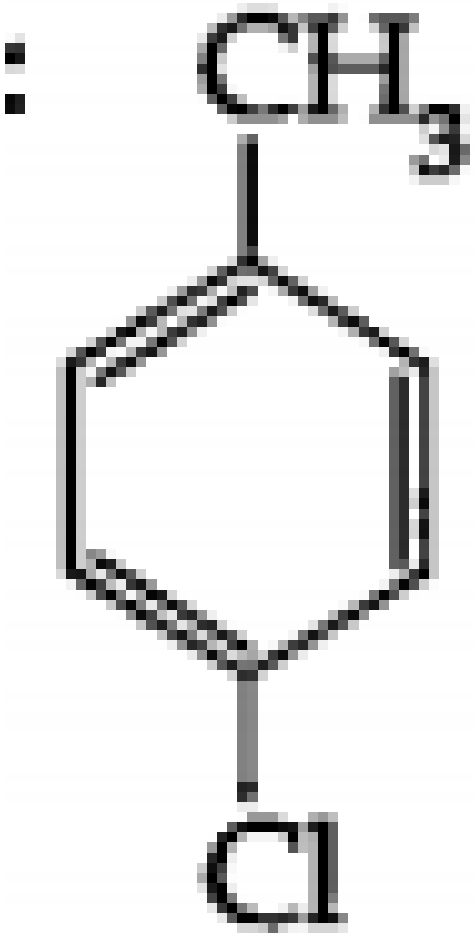
360. Give the IUPAC name of the following:



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361. Name the reaction used in the preparation of alkyl fluoride from alkyl chloride.

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362. How many steps are invoved in $S_N 1$mechanism?

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363. Draw the structure of the optically active isomers of 2-bromobutane.

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364. Define:Chiral Carbon atom.

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365. Define: Optical activity

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366. Give reason : Haloarenes are less reactive than haloalkane.

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367. What is an action of aq.NaOH on : (i) 1-choloro-2,4-dinitrobenzene

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368. What is an action of aq.NaOH on : (ii) 2-bromobutane

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369. How is ethyl bromide prepared from : (i) ethyl alcohol

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370. How is ethyl bromide prepared from : (ii) ethene

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371. Complete the following reactions and explain optical activity of the products formed. Pent-2-ene with HBr

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372. Write a note on the mechanism of hydrolysis of methyl bromide.

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373. How are the following compounds prepared? (i) 2-Bromopropane from propene

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374. How are the following compounds prepared from alcohols? (2) Isopropyl bromide (2-Bromopropane)

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375. Give any two uses of : (i)Choloform

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376. Give any two uses of : (ii) Freons

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377. Claasify monohalogen derivatives of alkanes.

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378. Describe the action of alcoholic potassium hydroxide on:ethyl bromide

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379. Describe the action of alcoholic potassium hydroxide on:n-propyl bromide

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380. Describe the action of alcoholic potassium hydroxide on:isopropyl bromide

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381. Describe the action of alcoholic potassium hydroxide on:tert-butyl bromide

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