



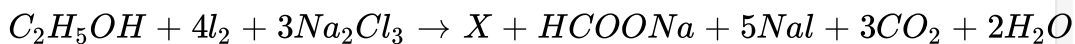
## CHEMISTRY

### BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)

### HALOALKANES AND HALOARANES

#### Problems Mcqs

1.



In the above reaction 'X' is

A. Diiodo methane

B. Triiodo methane

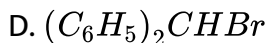
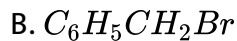
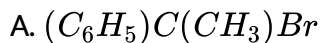
C. Iodo methane

D. Tetraiodo methane

**Answer: B**

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2. Which one of the following is more readily hydrolysed by  $S_N1$  mechanism?



**Answer: A**

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3. With respect to chlorobenzene, which of the following statements is not correct?

- A. Cl is ortho/para directing
- B. Cl exhibits + M effect
- C. Cl is ring deactivating
- D. Cl is meta directing

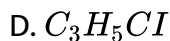
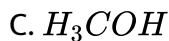
**Answer: D**



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4. Phosgene is formed slowly from which one of the following on exposure to air and sunlight?

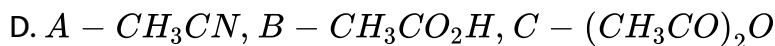
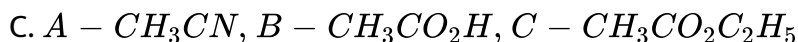
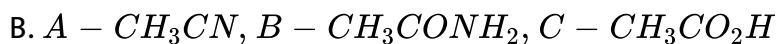
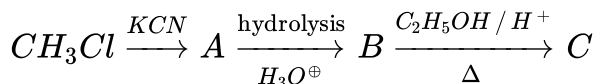
- A.  $CHCl_3$
- B.  $H_3CCI$



Answer: A

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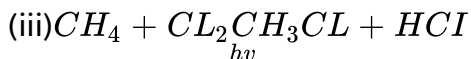
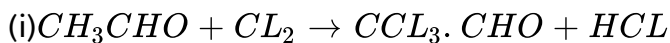
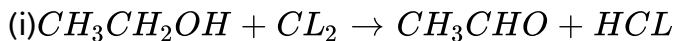
5. Identify A, B and C in the following reactions



Answer: C

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6. In which of the following reactions, chlorine acts as an oxidising agent



The correct answer is

A. (i) only

B. (ii) only

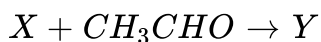
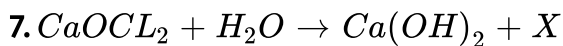
C. (i) and(ii)

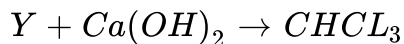
D. (i),(ii)and (iii)

Answer: D

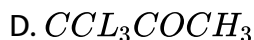
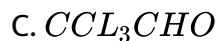
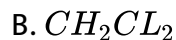
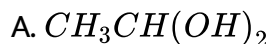


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What is 'Y'?



Answer: C



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8. Match the following columns.

**Column I (Reactants)**

(A)  $C_2H_5Cl$ , moist  $Ag_2O$

(B)  $C_2H_5Cl$ , aqueous  
ethanolic  $AgCN$

(C)  $C_2H_5Cl$ , aqueous  
ethanolic  $AgNO_2$

(D)  $C_2H_5Cl$ , ethanolic  $KOH$

**Column II (Products)**

(1)  $CH_3CH_2ONO$

(2)  $C_2H_4$

(3)  $CH_3CH_2NC$

(4)  $CH_3CH_2NC$

(5)  $C_2H_6$

des

A. A-5,B-3,C-4,D-1

B. A-1,B-2,C-3,D-4

C.  $A - 3, B - 4, C - 1, D - 2$

D.  $A - 4, B - 1, C - 2, D - 5$

**Answer: C**



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9. which of the following is added to chloroform to slow down its aerial oxidation in presence of light?

A. Carbonyl chloride

B. Ethyl alcohol

C. Sodium hydroxide

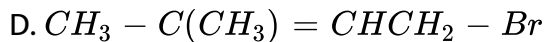
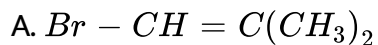
D. Nitric acid

**Answer: B**



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10. The correct structure of 4-bromo-3-methyl, but-1-ene is



Answer: B



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11. The chemical formula of tear gas is





C.  $CI_2$

D.  $CCI_3NO_2$

**Answer: D**

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12. The metal used for the debromination reaction of 1,2-dibromoethane, is

A. Na

B. Zn

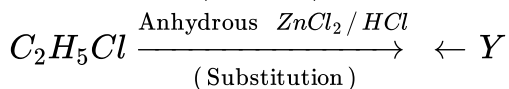
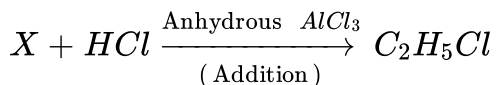
C. Mg

D. Li

**Answer: B**

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13. Consider the following reactions



Y can be converted to X on heating with at temperature

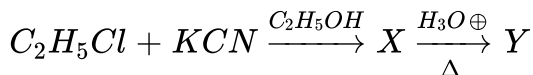
- A.  $Al_2O_3, 350^\circ C$
- B.  $Cu, 300^\circ C$
- C.  $Ca(OH)_2 + CaOCl_2, 60^\circ C$
- D.  $NaOH / I_2, 60^\circ C$

Answer: A

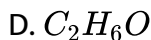
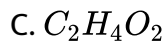
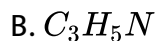
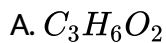


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14. In the reaction sequence,



what is the molecular formula of Y?

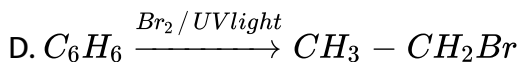
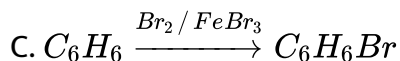
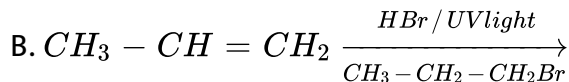
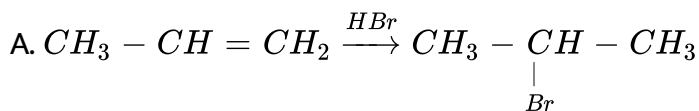


Answer: A



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15. Which of the following reaction proceeds via a secondary free radical?



**Answer: B**

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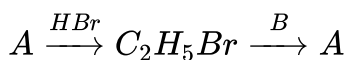
**16.** In the chloroethene, the carbon bearing halogen is bonded to... hydrogen(s).It is called \_\_alkylhalide.

- A. Two,primary
- B. Three,primary
- C. Two,secondary
- D. One,tertiary

**Answer: A**

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**17.** In the following reaction,A and B respectively are



A.  $C_2H_4$  and alcoholic  $KOH / \Delta$

B.  $C_2H_5Cl$  and aqueous  $KOH / \Delta$

C.  $C_2H_5OH$  and aqueous  $KOH / \Delta$

D.  $C_2H_2$  and  $PBr_3$

**Answer: A,C**



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**18.** The reaction conditions used for converting 1,2- dibromoethane to ethylene are

A. Zn,alcohol, $\Delta$

B. KOH,alcohol, $\Delta$

C. KOH,water, $\Delta$

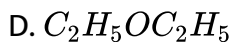
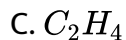
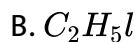
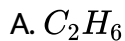
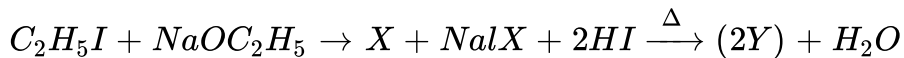
D. Na,alcohol, $\Delta$

**Answer: A**



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19. What is Y in the following reaction?



Answer: B



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20. Which of the following reacts with ethanol to form chloroform?



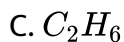
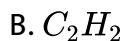


**Answer: D**



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21. Chloroethene reacts with magnesium in dry ether to form X. When X is hydrolysed, carbon compound Y and Z are formed. Which of the following is Y?

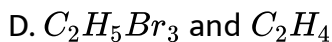
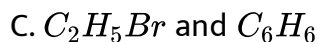
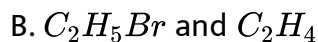


**Answer: C**



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22. Ethylene reacted with bromine in  $\text{CCl}_4$  to form X. X is treated with alcoholic KOH to give Y. X and Y are respectively



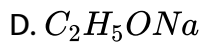
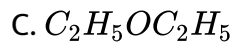
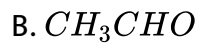
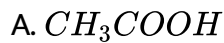
Answer: A



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23. Chloroethene reacts with Y to form NaCl and Z. One mole of Z reacts with two moles of HI to form water and iodo ethene. Which of the following is Y?



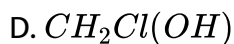
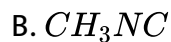


**Answer: D**



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**24.** Hydrolysis of chloroform with aqueous KOH gives finally

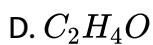
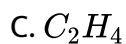
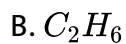
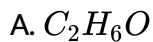


**Answer: C**



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25. Chloroethene is treated with alc KOH. The product formed is.



Answer: C



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26. The solvent used in the preparation of Grignard reagent is

A. Dry ether

B. Dry acetone

C. Dry alcohol

D. None of these

**Answer: A**

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27. Reaction of benzene with alkyl halide in the presence of anhydrous  $AlCl_3$ , is called

A. Friedel-craft's reaction

B. Wurtz reaction

C. Williamson's synthesis

D. Baeyer's reaction

**Answer: A**

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28. Hydrolysis of trichloromethane with aqueous KOH gives

- A. Methanol
- B. Chloral
- C. Acetylene
- D. Pottasium formate

**Answer: D**



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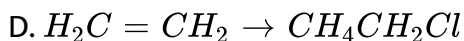
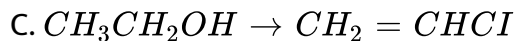
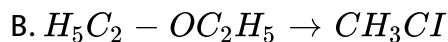
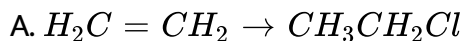
29. When an alkyl halide reacts with an alkoxide, the product is

- A. Hydrocarbon
- B. Unsaturated hydrocarbon
- C. Ether
- D. Alcohol

Answer: C

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30. In which one of the following conversions, phosphorous pentachloride is used as the reagent?



Answer: C

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31. The hybridisation state of carbon atoms in the product formed by the reaction of ethyl chloride with aqueous KOH, is

A.  $sp$

B.  $sp^2$

C.  $sp^3$

D.  $sp^3d$

**Answer: C**



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**32.** Ethyl chloride on heating with silver cyanide forms a compound X.

The functional isomer of X is

A.  $C_2H_5NC$

B.  $C_2H_5CN$

C.  $H_3C - NH - CH_3$

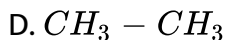
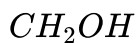
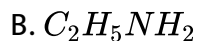
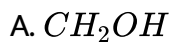
D.  $C_2H_5NH_2$

**Answer: B**



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33. Action of zinc dust on tetrabromo ethane gives



Answer: B



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34. Which of the following reagents and conditions convert benzene to chlorobenzene?



B. HCl, heat

C. HCl, sunlight, heat

D.  $Cl_2$   $AlCl_3$  heat

**Answer: D**



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35. Alkyl halide reacting with metallic sodium in dry ether solution, is called

A. Friedel-craft's reaction

B. Sandmeyer's reaction

C. Wurtz reaction

D. Gabriel's reaction

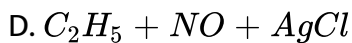
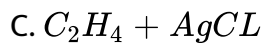
**Answer: C**



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36. The products form when ethyl chloride is treated with AgCN, are



**Answer: B**



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37. Which of the following compounds does not give a positive iodoform test?

A. Ethanol

B. Acetone

C. Acetaldehyde

D. Methanol

**Answer: D**

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**38.** The number of structural isomers possible for  $C_3H_5Cl_3$  is

A. 11

B. 8

C. 5

D. 6

**Answer: C**

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39. The compound which gives n-hexane on heating with sodium in dry ether is

- A. Ethyl bromide
- B. n-propyl bromide
- C. Methyl bromide
- D. n-butyl bromide

**Answer: B**



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40. On heating with bleaching powder, ethyl alcohol is converted into

- A.  $CH_3COOH$
- B.  $CH_3CHO$
- C.  $CH_3COCH_3$

D.  $\text{CHCl}_3$

**Answer: D**

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41. Which of the following poisonous gases is formed when chloroform is exposed to light and moist air?

A. Mustard gas

B. Phosgene

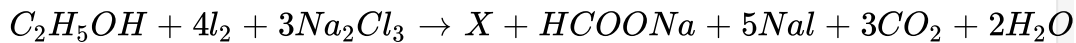
C. Chlorine

D. Carbon monoxide

**Answer: B**

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42.



In the above reaction 'X' is

- A. Diiodo methane
- B. Triiodo methane
- C. Iodo methane
- D. Tetraiodo methane

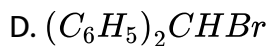
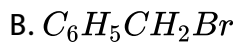
**Answer: B**



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43. Which one of the following is more readily hydrolysed by  $S_N1$  mechanism?

- A.  $(C_6H_5)C(CH_3)Br$



**Answer: A**

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44. With respect to chlorobenzene, which of the following statements is not correct?

A. Cl is ortho/para directing

B. Cl exhibits + M effect

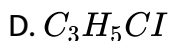
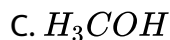
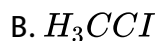
C. Cl is ring deactivating

D. Cl is meta directing

**Answer: D**

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45. Phosgene is formed slowly from which one of the following on exposure to air and sunlight?

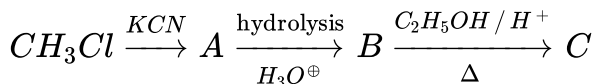


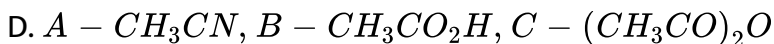
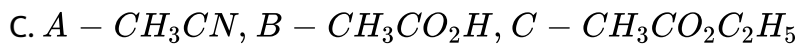
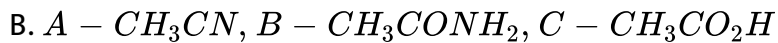
Answer: A



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46. Identify A, B and C in the following reactions



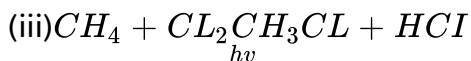
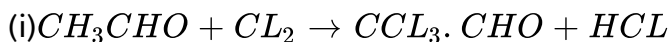
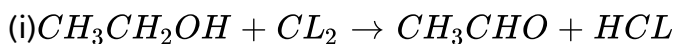


**Answer: C**



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47. In which of the following reactions, chlorine acts as an oxidising agent



The correct answer is

A. (i) only

B. (ii) only

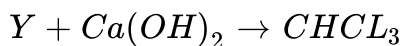
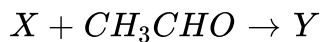
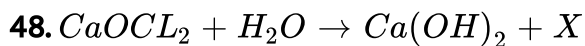
C. (i) and(ii)



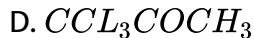
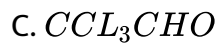
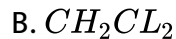
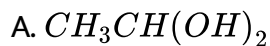
D. (i),(ii)and (iii)

**Answer: D**

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What is 'Y'?



**Answer: C**

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49. Match the following columns.

Column I (Reactants)	Column II (Products)
(A) $C_2H_5Cl$ , moist $Ag_2O$	(1) $CH_3CH_2ONO$
(B) $C_2H_5Cl$ , aqueous ethanolic $AgCN$	(2) $C_2H_4$
(C) $C_2H_5Cl$ , aqueous ethanolic $AgNO_2$	(3) $CH_3CH_2NC$
(D) $C_2H_5Cl$ , ethanolic $KOH$	(4) $CH_3CH_2NC$ (5) $C_2H_6$

A. A-5,B-3,C-4,D-1

B. A-1,B-2,C-3,D-4

C. A - 3, B - 4, C - 1, D - 2

D. A - 4, B - 1, C - 2, D - 5

Answer: C



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50. which of the following is added to chloroform to slow down its aerial oxidation in presence of light?

- A. Carbonyl chloride
- B. Ethyl alcohol
- C. Sodium hydroxide
- D. Nitric acid

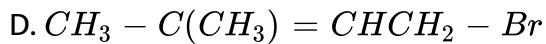
**Answer: B**



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51. The correct structure of 4-bromo-3-methyl, but-1-ene is

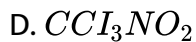
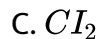
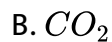
- A.  $Br - CH = C(CH_3)_2$
- B.  $CH_2 = CH - CH(CH_3) - CH_2Br$
- C.  $CH_2 = C(CH_3)CH_2CH_2Br$



**Answer: B**

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52. The chemical formula of tear gas is



**Answer: D**

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53. The metal used for the debromination reaction of 1,2-dibromoethane, is

A. Na

B. Zn

C. Mg

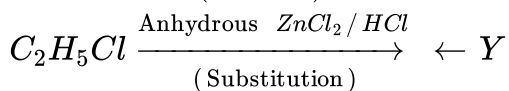
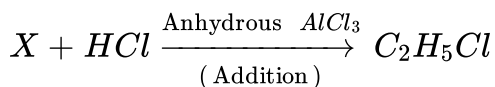
D. Li

**Answer: B**



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54. Consider the following reactions



Y can be converted to X on heating with at temperature

A.  $Al_2O_3, 350^\circ C$

B.  $Cu, 300^{\circ}C$

C.  $Ca(OH)_2 + CaOCl_2, 60^{\circ}C$

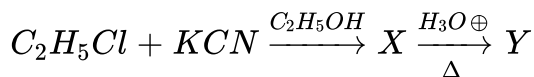
D.  $NaOH / I_2, 60^{\circ}C$

**Answer: A**



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55. In the reaction sequence,



what is the molecular formula of Y?

A.  $C_3H_6O_2$

B.  $C_3H_5N$

C.  $C_2H_4O_2$

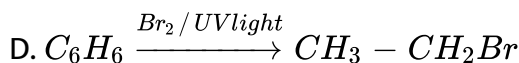
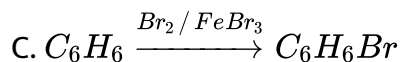
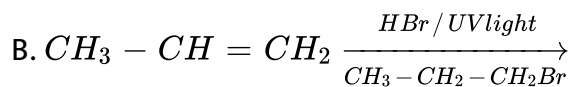
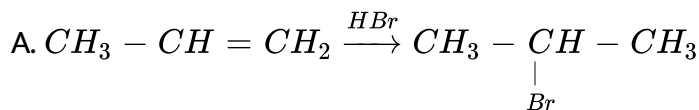
D.  $C_2H_6O$

**Answer: A**



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56. Which of the following reaction proceeds via a secondary free radical?



Answer: B



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57. In the chloroethene, the carbon bearing halogen is bonded to... hydrogen(s). It is called \_\_alkylhalide.

A. Two,primary

B. Three,primary

C. Two,secondary

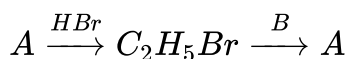
D. One,tertiary

**Answer: A**



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**58.** In the following reaction,A and B respectively are



A.  $C_2H_4$  and alcoholic  $KOH / \Delta$

B.  $C_2H_5Cl$  and aqueous  $KOH / \Delta$

C.  $C_2H_5OH$  and aqueous  $KOH / \Delta$

D.  $C_2H_2$  and  $PBr_3$

**Answer: A::C**





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59. The reaction conditions used for converting 1,2- dibromoethane to ethylene are

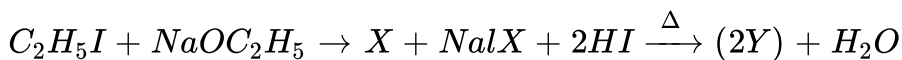
- A. Zn,alcohol, $\Delta$
- B. KOH,alcohol, $\Delta$
- C. KOH,water, $\Delta$
- D. Na,alcohol, $\Delta$

Answer: A

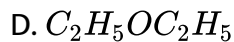
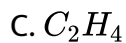
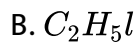


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60. What is Y in the following reaction?



- A.  $C_2H_6$



**Answer: B**

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61. Which of the following reacts with ethanol to form chloroform?



**Answer: D**

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62. Chloroethene reacts with magnesium in dry ether to form X. When X is hydrolysed, carbon compound Y and Z are formed. Which of the following is Y?

A.  $C_2H_4$  and alcoholic  $KOH / \Delta$

B.  $C_2H_2$

C.  $C_2H_6$

D.  $CH_6$

Answer: C

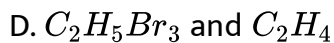
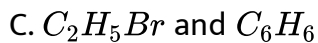


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63. Ethylene reacted with bromine in  $Cl_4$  to form X. X is treated with alcoholic KOH to give Y. X and Y are respectively

A.  $BrCH_2 - CH_2Br$  and  $C_2H_2$

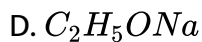
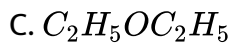
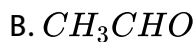
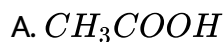
B.  $C_2H_5Br$  and  $C_2H_4$



**Answer: A**

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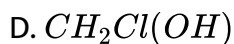
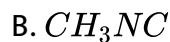
64. Chloroethene reacts with Y to form NaCl and Z. One mole of Z reacts with two moles of HI to form water and iodo ethene. Which of the following is Y?



**Answer: D**

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65. Hydrolysis of chloroform with aqueous KOH gives finally

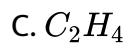
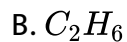
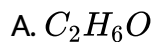


Answer: C



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66. Chloroethene is treated with alc KOH. The product formed is.



D.  $C_2H_4O$

**Answer: C**

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67. The solvent used in the preparation of Grignard reagent is

- A. Dry ether
- B. Dry acetone
- C. Dry alcohol
- D. None of these

**Answer: A**

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68. Reaction of benzene with alkyl halide in the presence of anhydrous  $AlCl_3$ , is called

- A. Friedel-craft's reaction
- B. Wurtz reaction
- C. Williamson's synthesis
- D. Baeyer's reaction

**Answer: A**



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69. Hydrolysis of trichloromethane with aqueous KOH gives

- A. Methanol
- B. Chloral
- C. Acetylene

D. Pottasium formate

**Answer: D**

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70. When an alkyl halide reacts with an alkoxide, the product is

A. Hydrocarbon

B. Unsaturated hydrocarbon

C. Ether

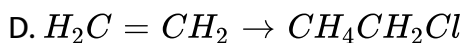
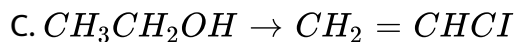
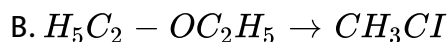
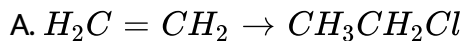
D. Alcohol

**Answer: C**

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71. In which one of the following conversions, phosphorous pentachloride is used as the reagent?



Answer: C

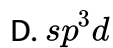


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72. The hybridisation state of carbon atoms in the product formed by the reaction of ethyl chloride with aqueous KOH, is

A.  $sp$

B.  $sp^2$



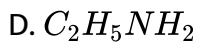
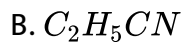
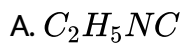
**Answer: C**



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**73.** Ethyl chloride on heating with silver cyanide forms a compound X.

The functional isomer of X is

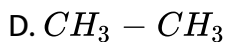
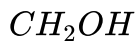
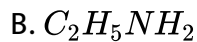
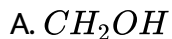


**Answer: B**



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74. Action of zinc dust on tetrabromo ethane gives

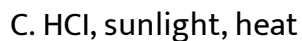
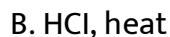


**Answer: B**



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75. Which of the following reagents and conditions convert benzene to chlorobenzene?



D.  $Cl_2AlCl_3$  heat

**Answer: D**

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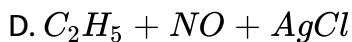
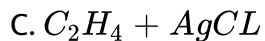
76. Alkyl halide reacting with metallic sodium in dry ether solution, is called

- A. Friedel-craft's reaction
- B. Sandmeyer's reaction
- C. Wurtz reaction
- D. Gabriel's reaction

**Answer: C**

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77. The products form when ethyl chloride is treated with AgCN, are



**Answer: B**



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78. Which of the following compounds does not give a positive iodoform test?

A. Ethanol

B. Acetone

C. Acetaldehyde

D. Methanol

**Answer: D**

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79. The number of structural isomers possible for  $C_3H_5Cl_3$  is

A. 11

B. 8

C. 5

D. 6

**Answer: C**

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80. The compound which gives n-hexane on heating with sodium in dry ether is

- A. Ethyl bromide
- B. n-propyl bromide
- C. Methyl bromide
- D. n-butyl bromide

**Answer: B**



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81. On heating with bleaching powder, ethyl alcohol is converted into

- A.  $CH_3COOH$
- B.  $CH_3CHO$
- C.  $CH_3COCH_3$

D.  $\text{CHCl}_3$

**Answer: D**



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82. Which of the following poisonous gases is formed when chloroform is exposed to light and moist air?

A. Mustard gas

B. Phosgene

C. Chlorine

D. Carbon monoxide

**Answer: B**



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