



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

ALKYL HALIDE

Example

1. Arrange the given set of compounds in order of increasing boiling points.

I. -chloropropane

II. Iso - propyl chloride

III. 1 - chlorobutane

A. I lt II lt III

B. I lt III lt II

C. II lt III lt I

D. II lt I lt III

Answer: D

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2. Molar product of the given reaction is



A. 

B. 

C. 

D. Reaction does not occur

Answer: B

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3. Arrange the following compounds in the increasing order of their melting point.



A. (i) gt (ii) gt (iii)

B. (iii) gt (ii) gt (i)

C. (ii) gt (i) gt (iii)

D. (iii) gt (i) gt (ii)

Answer: D



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Practice Exercise Exercise 1 Topical Problems

1. The catalyst used in the preparation of an alkyl chloride by the action of dry HCl on the alcohol is

A. anhy. $AlCl_3$

B. $FeCl_3$

C. anhy. $ZnCl_2$

D. Cu

Answer: C



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2. Number of monochloro derivatives obtained when neo-pentane chlorinated

A. one

B. two

C. three

D. four

Answer: A



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3. Which one of the following forms propane nitrile as the major product?

- A. Ethyl bromide + alc. KCN
- B. Propyl bromide + alc. KCN
- C. Propyl bromide + alc. AgCN
- D. Ethyl bromide + alc. AgCN

Answer: A



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4. In the following reaction $RX + A \rightarrow RNC$

The reactant 'A' is

- A. agCN

B. KCN

C. NaCN

D. HCN

Answer: A



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5. In alkaline hydrolysis of a tertiary alkyl halide by aqueous alkali, if concentration of alkali is doubled, then the reaction rate at constant temperature

A. will be doubled

B. will be halved

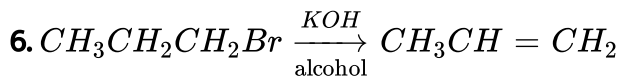
C. will become

D. will remain constant

Answer: D



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The above reaction is an example of reaction.

- A. substitution
- B. elimination
- C. addition
- D. rearrangement

Answer: B



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7. An ethereal solution of alkyl halide is heated with sodium metal. The reaction is known as

- A. Frankland's reaction

B. Sandmeyer's reaction

C. Wurtz-Fitting reaction

D. Wurtz reaction

Answer: D



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8. Which of the following can give a Grignard reagent when reacted with magnesium in dry ether?

A. C_2H_6

B. C_2H_5Cl

C. C_2H_5OH

D. C_2H_5CN

Answer: B



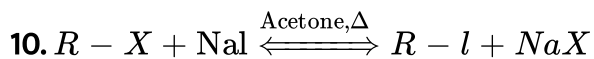
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9. The hydrolysis of optically active 2-bromobutane with aqueous NaOH result in the formation of :

- A. (+) butan -2-ol
- B. (-) butan -2-ol
- C. (±) butan -1-ol
- D. (±) butan -2-ol

Answer: D

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The forward reaction is facilitated by

- A. precipitation of NaCl or NaBr
- B. Le-Chatelier's principle

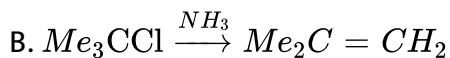
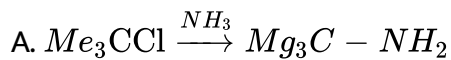
C. Bragg's law

D. Both (a) and (b)

Answer: D

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11. Which of the following reaction is incorrect?



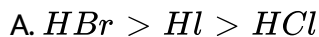
C. 

D. 

Answer: B

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12. In the reaction $C_2H_5OH + HX \xrightarrow{ZnX_2} C_2H_5X$, the order of the reactivity of HX is



Answer: C



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13. The alkyl halide that undergoes S_N1 reaction more readily is

A. ethyl bromide

B. iso-propyl bromide

C. vinyl bromide

D. tert-butyl bromide

Answer: D

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14. Which halide does not get hydrolysed by sodium hydroxide?

A. Vinyl chloride

B. Methyl chloride

C. Ethyl chloride

D. Isopropyl chloride

Answer: A

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15. When ethyl iodide is heated with dry silver oxide, the product formed is :

- A. ethyl alcohol
- B. diethyl ether
- C. silver ethoxide
- D. ethyl methyl ether

Answer: B



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16. When neopentyl bromide is subjected to Wurtz reaction, the product formed is

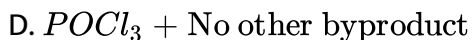
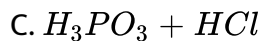
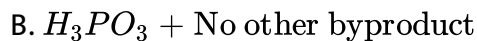
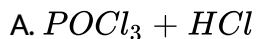
- A. 2,2,4,4- tetramethylhexane
- B. 2,2,4,4-tetramethylpentane
- C. 2,2,5,5- tetramethylhexane

D. 2,2,3,3-tetramethylhexane

Answer: C

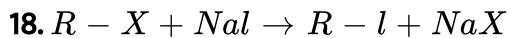
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17. The by product formed in the reaction is



Answer: A

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The solvent which is used in the above reaction is

- A. acetone
- B. dry acetone
- C. water
- D. ethylacetate

Answer: B



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19. Consider the following compounds.



The correct increasing order of the boiling points of the above compound is

- A. B It A It C

B. A It B It C

C. C It A It B

D. C It B It A

Answer: C



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20. Which of the following molecule is achiral?

A. 2-chlorobutane

B. 2,3-dichloropropane

C. Bromochloro iodomethane

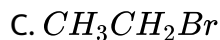
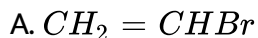
D. None of these

Answer: D



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21. Among the following, the most reactive towards alcoholic KOH is



Answer: D

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22. When 3-phenyl propene is treated with HBr in the presence of peroxide, the major product formed is

A. 1-bromo-3-phenyl propane

B. 1,2-dibromo-3-phenyl propane

C. 2-bromo-1-phenyl propane

D. 3-(p-bromophenyl) propene

Answer: A

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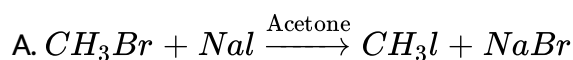
23. Hunsdiecker reaction is an example of

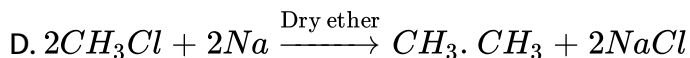
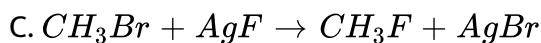
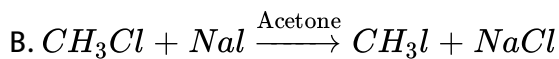
- A. decarboxylation
- B. debromination
- C. decarboxylation and bromination
- D. bromination

Answer: C

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24. Which one of the following is a Swarts reaction?





Answer: C

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25. The main product of the reaction of propane with chlorine at 25°C in the presence of sunlight is

A. 1-chloropropane

B. 2-chloropropane

C. chloroethane

D. chloromethane

Answer: B

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26. The product of the reaction of alcoholic silver nitrite with ethyl bromide is:

- A. ethene
- B. ethane
- C. ethyl nitrile
- D. nitro ethane

Answer: D



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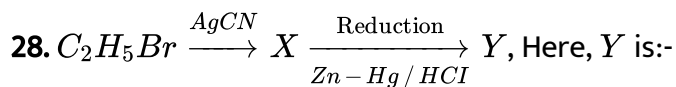
27. Tert-butyl chloride preferably undergo hydrolysis by

- A. S_N1 mechanism
- B. S_N2 mechanism
- C. Any of (a) and (b)

D. None of these

Answer: A

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A. n-propylamine

B. isopropylamine

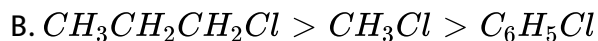
C. ethylamine

D. ethylmethylamine

Answer: D

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29. The reactivities of CH_3Cl , $CH_3CH_2CH_2Cl$ and C_6H_5Cl are in the order



Answer: A



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30. Which one of the following species will most readily proceed through S_N2 reaction ?



D. 

Answer: A

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31. $CH_3 - CH_2 - Br$ on treatment with $LiAlH_4$ gives ethane gas while $(CH_3)_3C - Br$ on same treatment gives H_2 gas because

A. the former is S_N2 and later is E2 reaction

B. the former is E2 and later is S_N2 reaction

C. the former is S_N1 and later is E2 reaction

D. the former is E2 and later is S_N1 reaction

Answer: A

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32. Alkyl chloride is prepared by passing the ...A... gas through solution of alcohol. Here, A refers to

A. H_2SO_4

B. Cl_2

C. dry HCl

D. None of these

Answer: C

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33. Reaction of tert-butyl bromide with aqueous sodium hydroxide follow

A. S_N1 mechanism

B. S_N2 mechanism

C. Any of the above two depending upon temperature of reaction

D. Saytzeff rule

Answer: A

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34. The optically inactive compound from the following is :-

A. 2-chloropentane

B. 2-chloropropanal

C. 2-chloro-2-methylbutane

D. 2-chlorobutane

Answer: C

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35. In the chemical reactions,



the compounds A and B respectively are

- A. nitrobenzene and fluorobenzene
- B. phenol and benzene
- C. benzene diazonium chloride and fluorobenzene
- D. nitrobenzene and chlorobenzene

Answer: C



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36. Among the following which one has weakest carbon-halogen bond?

- A. Benzyl bromide
- B. Bromobenzene
- C. Vinyl bromide

D. Benzyl chloride

Answer: A

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37. Fluorobenzene (C_6H_5F) can be synthesized in the laboratory ,

A. by heating phenol with HF and KF

B. from aniline by diazotisation followed by heating the diazonium salt with HBF_4

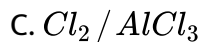
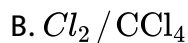
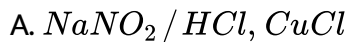
C. by direct fluorination of benzene with F_2 gas

D. by reacting bromobenzene with NaF solution

Answer: B

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38. In order to convert aniline into chlorobenzene the reagents needed are



Answer: A



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39. Which of the following statements is false about group of o-nitrochlorobenzene?

A. It is electron withdrawing group

B. It shows its effect at ortho-position in haloarene

C. It shows its effect at meta-position in haloarene

D. It show its effect at para-position in haloarene

Answer: C

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40. Which of the following resonating structure is incorrect



A. Only I

B. Only II

C. Only III

D. None of these

Answer: D

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41. Which is the major product in the given reaction ?



A. 

B. 

C. 

D. 

Answer: C



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42. Which of the following cannot be prepared by direct halogenation of benzene in the presence of Lewis acid ?

A. 

B. 

C. 

D. All of the above

Answer: C



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43. σ -complex formed in the chlorination of benzene is

A. 

B. 

C. 

D. All of these

Answer: D



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44. The relation between bond length 'x' and 'y' is



A. $x = y$

B. $x < y$

C. $x > y$

D. Nothing can be predicted

Answer: B



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45. Following reaction is called



A. Fitting reaction

B. Ullmann reaction

C. Wurtz reaction

D. Wurtz-Fitting reaction

Answer: B

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46. $X \xrightarrow{Cl_2}$ Benzotrichloride $\xrightarrow{\text{Hydrolysis}}$ Y. What are X and Y respectively ?

A. benzene, benzaldehyde

B. toluene, benzaldehyde

C. toluene, benzoic acid

D. benzene, benzoic acid

Answer: C

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47. The major product of the reaction of



with electrophile, E^+ , is

A. 

B. 

C. 

D. 

Answer: B



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48. In the preparation of chlorobenzene from aniline, the most suitable reagent is

A. chlorine in the presence of ultraviolet light

B. chlorine in the presence of $AlCl_3$

C. nitrous acid followed by heating with Cu_2Cl_2

D. HCl and Cu_2Cl_2

Answer: C

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49. Which one of the following chlorohydrocarbons readily undergoes solvolysis?

A. $CH_2 = CHCl$

B. 

C. 

D. 

Answer: C

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50. Benzene is obtained from benzene diazonium chloride by the :

- A. Raschig's reaction
- B. Sandmeyer's reaction
- C. Kolbe's reaction
- D. Cannizzaro's reaction

Answer: B



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51. In the reaction,



Product A is

A. 

B. 

C. 

D. 

Answer: A

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52. In the reaction,



The major product A is

A. 

B. 

C. 

D. 

Answer: A

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53. Predict the main product in



A. phenyl cyanide

B. nitrophenol

C. aniline

D. hydroxylamine

Answer: C



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54. Which of the following mechanism is followed in halogenation, sulphonation and Friedal craft reaction of haloarenes?

A. Nucleophilic reaction of benzene

B. Electrophilic reaction of benzene

C. Addition reaction of benzene

D. Nucleophilic substitution reaction of benzene

Answer: B

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55. Select the product of the reaction.



A. 

B. 

C. 

D. Both (a) and (c)

Answer: D

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56. What is the IUPAC name given compound ?



- A. 1-chloro-2-methylbenzene
- B. 1-methyl-2-chlorobenzene
- C. 2-chloro-1-methylbenzene
- D. 2-methyl-1-chlorobenzene




Answer: A



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57. The product is 'X' in the following reaction.



- A. 
- B. 
- C. 

D. 

Answer: A

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58. Chlorobenzene can be converted into toluene by

- A. Wurtz reaction
- B. Fitting reaction
- C. Wurtz-Fitting reaction
- D. All of the above

Answer: C

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59. Which of the following possesses highest melting point ?

- A. Chlorobenzene
- B. o-dichlorobenzene
- C. m-dichlorobenzene
- D. p-dichlorobenzene

Answer: D

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60. Chlorobenzene on treatment with sodium in dry ether gives diphenyl.

The name of the reaction is

- A. Fitting reaction
- B. Wurtz-Fitting reaction
- C. Sandmeyer reaction
- D. Gattermann reaction

Answer: A



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61. The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives predominantly

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

Answer: C

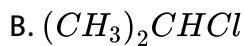


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62. $X \xrightarrow[HNO_3]{AgNO_3}$ Yellow or white ppt.

Which of the following cannot be X ?

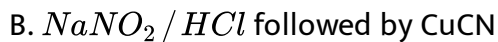
- A. 



Answer: A

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63. For the preparation of p-nitroiodobenzene from p-nitroaniline, the best method is



Answer: A

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64. Gammeance is chemically known as

- A. benzene hexachloride
- B. hexachloro benzene
- C. benzene hexabromide
- D. hexabromo benzene

Answer: A



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65. What is 'A' in the following reaction ?



A. 

B. 

C. 

D. 

Answer: C

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66. Halogen atom being slightly ...A... is ...B... directing. Here, A and B refer to

- A. activating, ortho and para
- B. activating, meta
- C. deactivating, ortho and para
- D. deactivating, meta

Answer: C

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67. Select the reagent (X) used in the reaction.



A. HNO_3

B. H_2SO_4

C. HNO_3 , conc. H_2SO_4

D. NO_2

Answer: C



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68. What is 'A' in the following reaction ?



A. 

B. 

C. 

D. 

Answer: C

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69. What is the end product of the following reaction ?



A. 

B. 

C. 

D. 

Answer: C

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70. The increasing order of reactivity of the following bromides in S_N1 reaction is



A. III > I > II > IV

B. III > II > I > IV

C. II > III > I > IV

D. II > I > IV > III

Answer: D



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71. Which one of the following pairs is the strongest pesticide ?

A. Chloroform and benzene hexachloride

B. DDT and 666

C. Isocyanides and alcohol

D.

Answer: B

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72. Which of the following is not inflammable?

A. $CHCl_3$

B. Benzene

C. Toluene

D. Carbon tetrachloride

Answer: D

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73. Carbon compounds containing more than one halogen atom is called

- A. alkyl halide
- B. alkane
- C. alkene
- D. polyhalogen compound

Answer: D

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74. Name the poisonous gas produced during the oxidation of chloroform.

- A. Carbon monoxide
- B. Carbonyl chloride
- C. Phosgene
- D. Both (b) and (c)

Answer: D



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75. Solvent which is used in the synthesis of chlorofluorocarbons

- A. iodoform
- B. chloroform
- C. carbon tetrachloride
- D. methylene chloride

Answer: C



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76. The raw materials for the commercial manufacture of DDT are

- A. chlorobenzene and chloroform
- B. chlorobenzene and chloromethane
- C. chlorobenzene and chloral

D. chlorbenzene and BHC

Answer: C

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77. CCl_4 is a well known fire extinguisher. However after using it to extinguish fire the room should be well ventilated. This is because:

- A. it is flammable at high temperature
- B. it is toxic
- C. it produces phosgene by reaction with water vapour at higher temperature
- D. it is corrosive

Answer: C

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78. Hexachloroethane is also called

- A. artificial sweetener
- B. artificial camphor
- C. artificial polymer
- D. None of these

Answer: B



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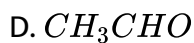
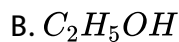
79. The chemical formula of 'tear gas' is

- A. $COCl_2$
- B. CO_2
- C. Cl_2
- D. CCl_2NO_2

Answer: D

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80. Ethyl orthoformate is formed by heating with sodium ethoxide.



Answer: A

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1. Which of the following compounds will undergo racemisation upon alkaline KOH hydrolysis ?



- A. I and II
- B. II and IV
- C. III and IV
- D. I and IV

Answer: C



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2. The compound that reacts the fastest with sodium methoxide is

A. 

B. 

C. 

D. 

Answer: A

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3. Which of the following is not formed when a mixture of methyl bromide and bromobenzene is heated with sodium metal in the presence of dry ether?

A. Diphenyl

B. Propane

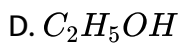
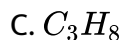
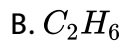
C. Toluene

D. Ethane

Answer: B

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4. Ethyl iodide when heated with sodium in dry ether gives pure

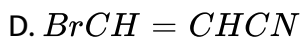
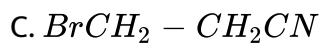
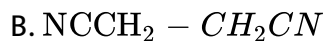
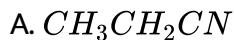
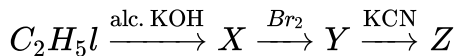


Answer: A



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5. Identify Z, in the following reaction.

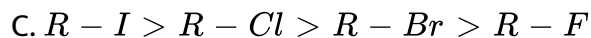
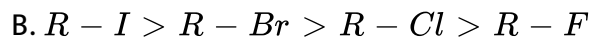
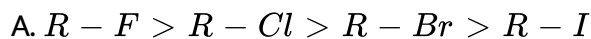


Answer: B



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6. Reactivity order of halides of dehydrohalogenation is



Answer: B



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7. 

The final product, (Z) is

A. 

B. 

C. 

D. 

Answer: A

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8. The structure of the major product formed in the following reaction is



A. 

B. 

C. 

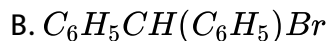
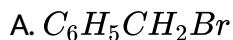
D. 

Answer: D



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9. Which one is the most reactive towards S_N1 reaction ?



Answer: D



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10. Chlorination of toluene in the presence of light and heat followed by the treatment with aqueous KOH gives

A. o- cresol

B. m- cresol

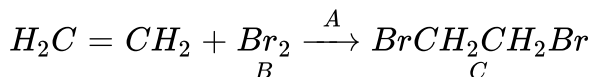
C. p- cresol

D. Benzyl alcohol

Answer: D

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11. Consider the following reaction,



The reactant 'A' and colour of 'B' and 'C' are respectively

A. $A \rightarrow CCl_4$ B \rightarrow colourless C \rightarrow reddish brown

B. $A \rightarrow CCl_4$ B \rightarrow reddish brown C \rightarrow colourless

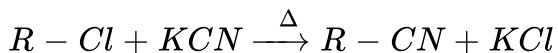
C. $A \rightarrow CBr_4$ B \rightarrow colourless C \rightarrow reddish brown

D. $A \rightarrow CBr_4$ B \rightarrow reddish brown C \rightarrow colourless

Answer: B

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12. Following is the substitution reaction in which -CN replaces -Cl



To obtain propane nitrile R -Cl should be:

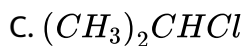
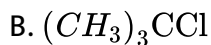
- A. chloroethane
- B. 1-chloropropane
- C. chloromethane
- D. 2-chloropropane

Answer: A

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13. The organic chloro compound, which shows complete stereochemical inversion during a S_N^2 reaction, is:

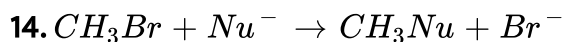
- A. $(C_2H_5)_2CHCl$



Answer: D

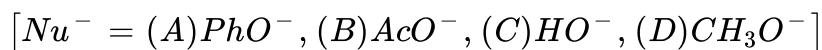


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The decreasing order of the rate of the above reaction with nucleophiles

(Nu^-) A to D is :



A. D gt C gt A gt B

B. D gt C gt B gt A

C. A gt B gt C gt D

D. B gt D gt C gt A

Answer: A

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15. Which of the following will give yellow precipitate on shaking with an aqueous solution of NaOH followed by the acidification with dil. HNO_3 and addition of $AgNO_3$ solution?

A. 

B. 

C. 

D. 

Answer: C

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16. 

This reaction is termed as

- A. nucleophilic substitution
- B. electrophilic substitution
- C. nucleophilic elimination
- D. electrophilic elimination

Answer: B



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17. Which reagent will you use for the following reaction ?



- A. Cl_2 / UV light
- B. $NaCl + H_2SO_4$
- C. Cl_2 gas in dark

D. Cl_2 gas in the presence of iron in dark

Answer: A



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18. The product (A) in the following reaction is



A.

B.

C.

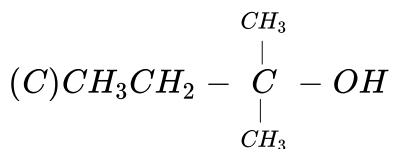
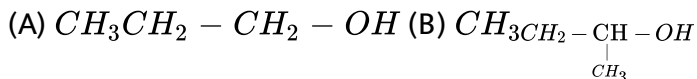
D.

Answer: C



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19. The order of reactivity of following alcohols with halogen acids is.....



A. I gt II gt III

B. III gt II gt I

C. II gt I gt III

D. I gt III gt II

Answer: B



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20. Consider the following reaction



The product B is

A. 

B. 

C. 

D. 

Answer: C

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21. Chloroform with alcoholic KOH gives

A. potassium acetate


B. potassium formate

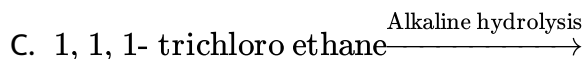
C. potassium chloride

D. potassium chlorate

Answer: B

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22. Which of the following reaction on dehydration gives the product, 



D. None of the above

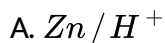
Answer: A

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23. The conversion



can be brought about using the reagent



B. CuI

C. Na

D. $(CH_3)_2CuLi$

Answer: A

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24. Chloromethane on treatment with excess of ammonia yields mainly

A. N, N-dimethylmethanamine



B. N-methylmethanamine
($CH_3 - NH - CH_3$)

C. methanamine (CH_3NH_2)

D. mixture containing all the above in equal proportion

Answer: C

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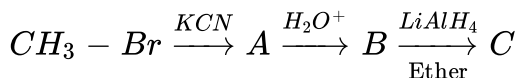
25. When H_2 is added to two isomeric alkenes A and B having molecular formula C_5H_9Cl , A gives optically inactive compound while B gives a chiral compound. The two isomers are

- A. A is 3-chloro pent-1-ene and B is 4-chloro pent-2-ene
- B. A is 4-chloro pent-1-ene and B is 2-chloro pent-2-ene
- C. A is 1-chloro pent-1-ene and B is 1-chloro pent-2-ene
- D. A is 1-chloro pent-1-ene and B is 5-chloro pent-1-ene

Answer: A

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26. In the following sequence of reaction, the product C is



- A. acetone
- B. methane

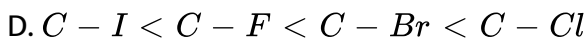
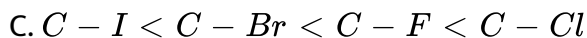
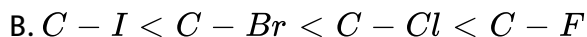
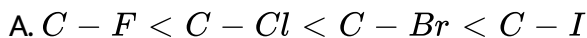
C. acetaldehyde

D. ethyl alcohol

Answer: D

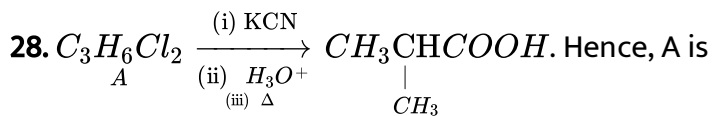
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27. Carbon -halogen bond lengths increases in the order



Answer: A

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A. 1, 1-dichloro propane

B. 1, 2-dichloro propane

C. 2,2-dichloro propane

D. 1, 3-dichloro propane

Answer: C



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29. The major product of the following reaction is



A.

B.

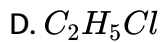
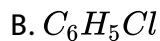
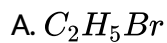
C.

D. 

Answer: A

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30. Which of the following alkyl halides is used as a methylating agent ?



Answer: C

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31. An equimolar mixture of toluene and chlorobenzene is treated with a mixture of conc. H_2SO_4 and conc. HNO_3 . Indicate the correct statement from the following :

- A. p-nitrotoluene is formed in excess
- B. Equimolar amounts of p-nitrotoluene and p-nitrochlorobenzene is formed
- C. p-nitrochlorobenzene is formed in excess
- D. m-nitrochlorobenzene is formed in excess

Answer: A

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32. The order of reactivities of methyl halide in the formation of Grignard reagent is

- A. $CH_3I > CH_3Br > CH_3Cl$



Answer: A

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33. The main product 'Y' in the following reaction is



A. hexane

B. cyclohexane

C. cyclohexylcyclohexane

D. cyclohexyl ether

Answer: B

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34. A halide with formula $C_6H_{13}Br$ gave two isomeric alkenes A and B with formula C_6H_{12} . On reductive ozonolysis of mixture of A and B following compounds were obtained CH_3COCH_3 , CH_3CHO , CH_3CH_2CHO and $(CH_3)_2CHCHO$.

The halide is

- A. 2-bromohexane
- B. 2,2-dimethyl-1-bromobutane
- C. 4-bromo-2-methylpentane
- D. 3-bromo-2-methylpentane

Answer: D

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35. The increasing order of hydrolysis of the following compounds is



A. I It III It II It IV

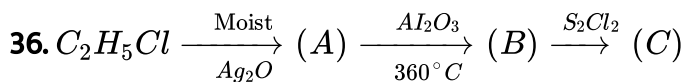
B. I It IV It III It II

C. IV It II It III It I

D. I It III It IV It II

Answer: A

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In the above sequence of reactions identify (C)

A. Chloretone

B. Chloropicirn

C. Mustard gas

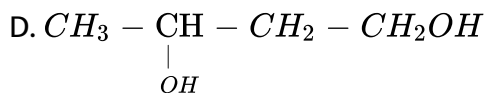
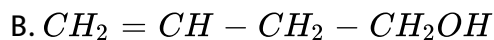
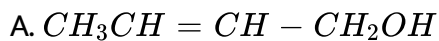
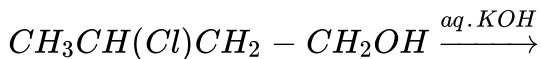
D. Lewisite gas

Answer: C



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37. The major product formed in the following reaction is



Answer: D



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38. 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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39. The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives X and reaction in presence of light gives Y Thus X and Y are .

A. X = benzyl chloride, Y = m-chlorotoluene

B. X = benzal chloride, Y = o-chlorotoluene

C. X = m-chlorotoluene, Y = p-chlorotoluene

D. X = o and p-chlorotoluene,

Y = trichloromethyl benzene

Answer: D



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40. Chlorobenzene reacts with Mg in dry ether to give a compound A, which further reacts with ethanol to give

- A. phenol
- B. benzene
- C. ethyl benzene
- D. phenyl ether

Answer: B



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41. Chlorobenzene is prepared commercially by

- A. Dow's process
- B. Dacon's process

C. Raschig process

D. Etard's process

Answer: C

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42. Which of the following compounds has the highest boiling point ?

A. $CH_3CH_2CH_2Cl$

B. $CH_3CH_2CH_2CH_2Cl$

C. $CH_3CH(CH_3)CH_2Cl$

D. $(CH_3)_3CCl$

Answer: B

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43. Tertiary alkyl halide are practically inert to substitution by SN^2 mechanism because of-

- A. steric hindrance
- B. inductive effect
- C. instability
- D. insolubility

Answer: A



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44. The position of Br in the compound in $CH_3 = CHC(Br)(CH_3)_2$ can be classified as.....

- A. allyl
- B. aryl
- C. vinyl

D. secondary

Answer: A

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45. The IUPAC name of,



Compound is

A. 2-bromopent-4-ene

B. 2-bromopent-3-ene

C. 4-bromopent-2-ene

D. 4-bromopent-1-ene

Answer: C

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46. 

For the above reaction

- I. X = Cl, ortho and para-isomers can be separated out.
- II. X = I, reaction does not occur due to high reactivity of iodine.
- III. X = F, reaction with fluorine is reversible.

Select the most appropriate option with correct statements.

- A. Only I
- B. Only II
- C. Only III
- D. All of these

Answer: A



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47. Alkyl halides are prepared from alcohols by treating with

A. $HCl + ZnCl_2$

B. Red P + Br_2

C. $H_2SO_4 + KI$

D. Both (a) and (b)

Answer: D



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48. Arrange the following compounds in the increasing order of their density.

I. CH_2Cl_2 II. $CHCl_3$ III. CCl_4

A. III lt II lt I

B. III lt I lt II

C. III lt I = II

D. I lt II lt III

Answer: D



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49. 

The above reaction follows

- A. S_N1 mechanism
- B. Saytzeff rule
- C. S_N2 mechanism
- D. S_N1 and S_N2 depending upon temperature of reaction

Answer: A



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50. 2,2 -dichlorobutane on boiling with aqueous KOH gives

- A. butanal
- B. 2-butanone

C. 2-butanol

D. butanoic acid

Answer: B

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51. Toluene reacts with excess of Cl_2 in the presence of sunlight to give a product which on hydrolysis followed by the reaction with NaOH gives

A. 

B. 

C. 

D. None of these

Answer: B

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52. The order of reactivities of the following alky halides for an S_N2 reaction is .

A. $RF \gt RCl \gt RBr \gt RI$

B. $RF \gt RBr \gt RCl \gt RI$

C. $RCl \gt RBr \gt RF \gt RI$

D. $RI \gt RBr \gt RCl \gt RF$

Answer: D



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53. The reaction of ethyl bromide with silver cyanide results in the formation of

A. ethylene

B. ethyl cyanide

C. ethyl isocyanide

D. ethyl alcohol

Answer: C

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54. the order of reactivity of alkyl halides depends upon:

A. the nature of halogen atom

B. the nature of alkyl group

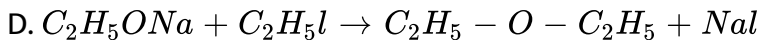
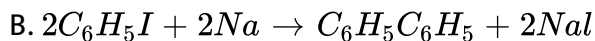
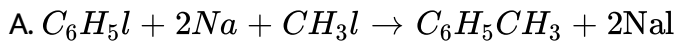
C. Both (a) and (b)

D. None of the above

Answer: C

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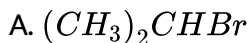
55. Which of the following is Wurtz-Fittig reaction?



Answer: A

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56. 'A' is formed when benzene reacts with In presence of $AlCl_3$



C. Both (a) and (b)

D. None of these

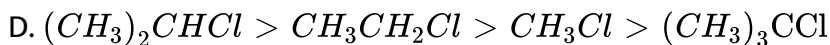
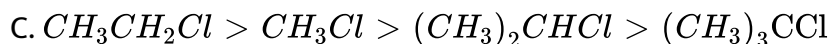
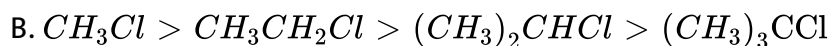
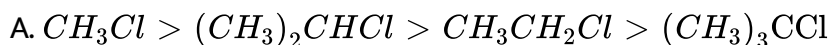
Answer: C



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57. In S_N2 reactions, the correct order of reactivity for the following compounds:

CH_3Cl , CH_3CH_2Cl , $(CH_3)_2CHCl$ and $(CH_3)_3CCl$ is:



Answer: B



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58. Four compounds, Toluene (I), o-dichlorobenzene (II), m-dichlorobenzene (III) and p-dichlorobenzene (IV) are arranged in the order of increasing dipole moment. The correct order is

A. IV It I It III It II

B. I It II It III It IV

C. II It IV It III It I

D. IV It III It II It I

Answer: A



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59. 2-bromopentane with alcoholic KOH yields a mixture of three alkenes.

Which of the following alkene is predominant?

A. 1-pentene

B. Cis-pent-1-ene

C. Trans-pent-2-ene

D. Cis-pent-1-ene

Answer: C



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

A. 

B. 

C. 

D. 

Answer: D



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61. Among the following, the correct statement is

A. alkyl halides are slightly soluble in water

B. fluoro and chloro-alkanes are lighter than water

C. boiling point of alkyl halide is greater than its corresponding alkane

D. All of the above

Answer: D

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62. In the reaction,



The product B is

A. alkyl chloride

B. aldehyde

C. carboxylic acid

D. ketone

Answer: C



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63. If 1,3- dibromopropane reacts with zinc and NaI, the product obtained is :

- A. propene
- B. propane
- C. cyclopropane
- D. hexane

Answer: C



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64. Toluene is nitrated and the resulting product is reduced with tin and hydrochloric acid. The product so obtained is diazotised and then heated with cuprous bromide. The reaction mixture so formed contains

- A. mixture of o-and p-bromotoluenes
- B. mixture of o-and p-dibromobenzene
- C. mixture of o-and p-bromoaniline
- D. mixture of o-and m-bromotoluenes

Answer: A

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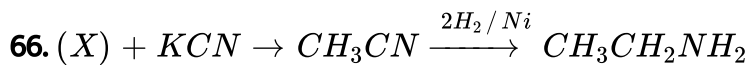
65. Of the isomeric haexanes, the isomers that give the minimum and maximum number of monochloro derivatives are, respectively,

- A. 3-methylpentane and 2, 3-dimethylbutane
- B. 2, 3-dimethylbutane and n-hexane
- C. 2,2,-dimethylbutane and 2-methylpentane
- D. 2,3-dimethylbutane and 2-methylpentane

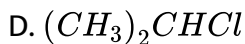
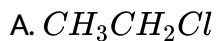
Answer: D



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What is (X) ?



Answer: B



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67. The following compound on hydrolysis in aqueous acetone will give



Select the correct option.

A. mixture of I and II

B. mixture of I and III

C. Only III

D. Only I

Answer: A

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68. Match the following common name in Column I to the IUPAC name in Column II and choose the correct option from the codes given below.



A.

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	3	4	1	5	2

B.

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	1	2	4	5	3

C.

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	3	4	2	5	1

D.

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	1	2	4	3	5

Answer: C

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69. Which of the following statement(s) is/are false?

- A. Primary and secondary alcohols react with HX in the presence of $ZnCl_2$
- B. Tertiary alcohol react with HCl just by shaking conc. HCl at room temperature
- C. Constant boiling of alcohol with HBr (48 %) is used to prepare the alkylbromide
- D. Order of reactivity of alcohol with haloacid is $3^\circ < 2^\circ < 1^\circ$

Answer: D

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70. Identify the compound Y in the following reaction.



A.

B.

C.

D.

Answer: A



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Mht Cet Corner

1. The compound which is not formed when a mixture of n-butyl bromide and ethyl bromide treated with sodium metal in the presence of dry ether is

A. butane

B. octane

C. hexane

D. ethane

Answer: D

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2. The replacement of diazonium group by fluorine is known as

A. Gattermann reaction

B. Sandmeyer reaction

C. Balz-Schiemann reaction

D. Etard reaction

Answer: C

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3. Chlorination of ethane is carried out in the presence of

A. anhydrous $AlBr_3$

B. mercuric chloride

C. ultraviolet light

D. zinc chloride

Answer: C



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4. Alkaline hydrolysis of which among the following compounds leads to the formation of a racemate ?

A. 1-bromo-1-phenylethane

B. 1-chloro-3-methylbutane

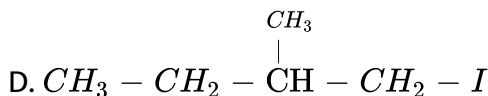
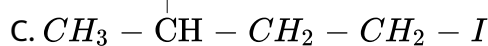
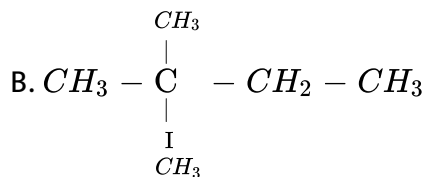
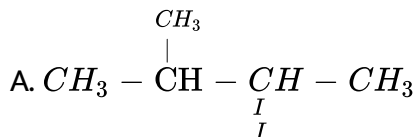
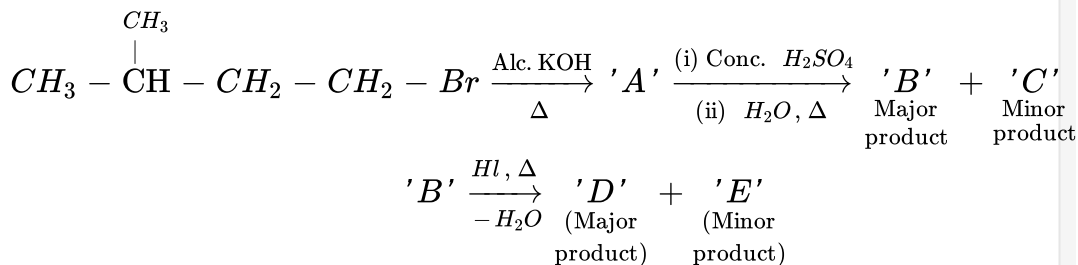
C. Bromoethane

D. 1-chloropropane

Answer: A

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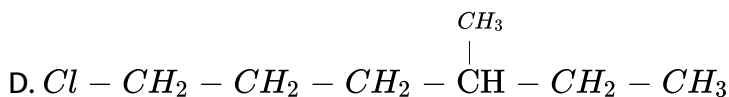
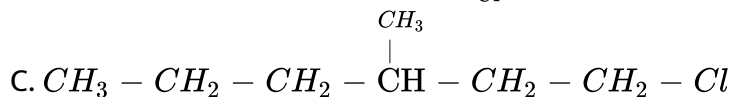
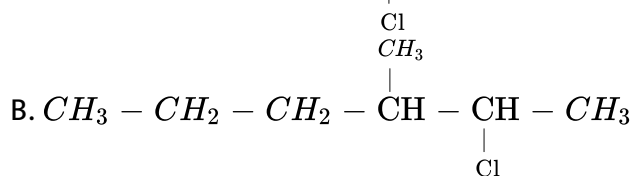
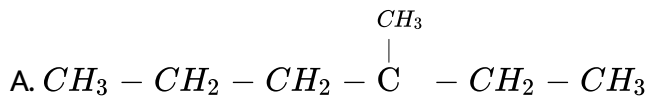
5. Identify the compound 'D' in the following series of reaction.



Answer: A

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6. 'X' is an optically active alkane having lowest molecular mass, product the structure of the major product obtained on monochlorination of 'X'.

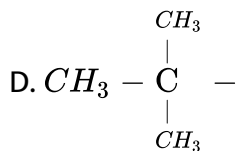
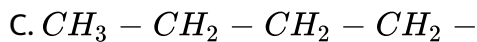
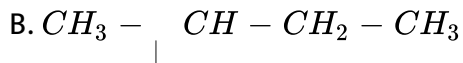


Answer: A

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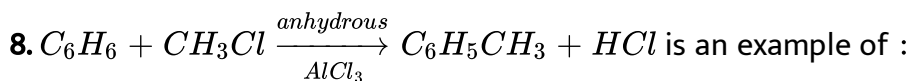
7. The structure of isobutyl group in an organic compound is

A. 



Answer: A

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A. Gattermann reaction

B. Reimer-Tiemann

C. Friedel - Craft reaction

D. Cannizaro reaction

Answer: C

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9. The IUPAC name of the compound



- is
- A. 1-bromo-1-chloro-4, 4'-bicyclobutane
 - B. 4-(4'-chlorocyclobutyl)-1-bromocyclobutane
 - C. 3-bromo-3'-chloro-1, 1'-bicyclobutane
 - D. 4-(4'-bromocyclobutyl)-1-chlorocyclobutane

Answer: C



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10. How many isomeric vicinal- dihalides are possible for the compound having molecular formula $C_3H_6Cl_2$?

- A. 1
- B. 2
- C. 3

D. 4

Answer: A



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11. Chloroform on reduction with zinc dust and water gives

A. methyl chloride

B. dichloromethane

C. chloromethane

D. methane

Answer: B



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12. In Dow's process, the starting raw material is

- A. phenol
- B. chlorobenzene
- C. aniline
- D. diazobenzene

Answer: B

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13. Which of the following compounds is not chiral

- A. 1-chloro-2-methyl pentane
- B. 2-chloropentane
- C. 1-chloropentane
- D. 3-chloro-2-methyl pentane

Answer: C

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14.1 – Chlorobutane on reaction with alcoholic potash gives:

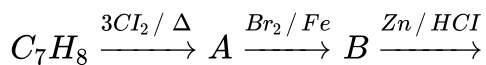
- A. but-1-ene
- B. butan-1-ol
- C. but-2-ene
- D. butan-2-ol

Answer: C



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15. The compound C_7H_8 undergoes the following reactions



The product 'C' is .

- A. o-bromotoluene
- B. m-bromtoluene

C. p-bromotoluene

D. 3-bromo-2, 4, 6-trichlorotoluene

Answer: B

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16. C-Cl bond is stronger than C-I bond , because

A. $C - Cl$ bond is more ionic than $C - I$

B. $C - Cl$ bond is polar covalent bond

C. $C - Cl$ bond is more covalent than $C - I$

D. $C - Cl$ bond length is longer than $C - I$

Answer: A

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17. 2-propanol + $NaBr \xrightarrow{\text{Reflux}}$ X. What is X?

A. 2-bromopropane

B. Propane

C. Propane

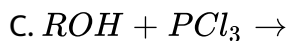
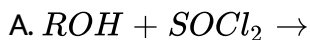
D. Propanone

Answer: A



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18. Best method of preparing alkyl chloride is



Answer: A

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19. Formation of alkane by the action of Zn on alkyl halide is called-

A. Wurtz reaction

B. Kolbe's reaction

C. Ulmann's reaction

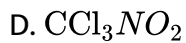
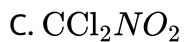
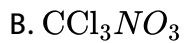
D. Frankland reaction

Answer: D

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20. Molecular formula of chloropicrin is

A. CH_2ClNO_2



Answer: D

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21. The raw material for Raschig process is

A. chlorobenzene

B. phenol

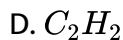
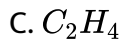
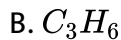
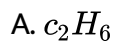
C. benzene

D. anisole

Answer: C

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22. Chloroform, on warming with Ag powder, gives



Answer: D



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23. Geometry of reaction intermediate in S_N1 reaction is

A. tetrahedral

B. planar

C. triangular bipyramidal

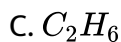
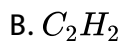
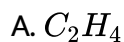
D. None of these

Answer: B



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24. Ethylidene chloride can be prepared by the reaction of *HCl* and



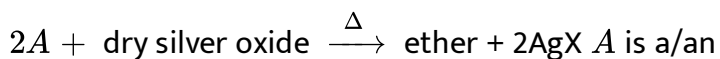
D. All of these

Answer: B



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25. In the reaction,



A. primary alcohol

B. acid

C. alkyl halide

D. alcohol

Answer: C



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