CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

HALOALKANES AND HALOARENES

Textual Evaluation Solved Multipie Choice Questions

1. The IUPAC name of  is ..... .

A. 2-Bromopent - 3 ene

B. 4-Bromopent 2 ene

C. 2-Bromopent -4 ene

D. 4-Bromopent 1-ene

Answer: B

View Text Solution

View Text Solution

2. Of the following compounds, which has the highest boiling point?

A. n-Butyl chloride

B. Isobutyl chloride

C. t-Butyl chloride

D. n-propyl chloride

Answer: A

View Text Solution

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

(A) CCl_4 (B) $CHCl_3$ (C) CH_2Cl_2 (D) CH_3Cl

A. D lt C lt B lt A

B. C gt B gt A gt D

C. A lt B lt C lt D

D. C gt A gt B gt D

Answer: A

View Text Solution

4. With respect to the position of Cl in the compound $CH_3 - CH = CH - CH_2 - Cl$, it is classified as ..... .

A. Vinyl

B. Allyl

C. Secondary

D. Aralkyl

Answer: B

View Text Solution

5. What should be the correct IUPAC name of diethyl chloromethane?

A. 3-Chloropentane

B. 1-Chloropentane

C. 1-Chloro-1, 1, diethylmethane

D. 1-Chloro-1-ethylpropane

Answer: A

View Text Solution

6. C-X bond is strongest in ..... .

A. Chloromethane

B. Iodomethane

C. Bromomethane

D. Fluoromethane

Answer: D

View Text Solution

7. In the reaction $X + N_2$. X is ..... .

A.

B.

C.

D.

Answer: B

View Text Solution

8. Which of the following compounds will give racemic mixture on nucleophilie substitution by OH ion?

(i) $CH_3 - \underset{C_2H_5}{\overset{|}{CH}} - CH_2Br$ (ii) $H_3C - \underset{Br}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}} - C_2H_6$ (iii) $CH_3 - \underset{Cl}{\overset{H}{\overset{|}{\underset{|}{C}}}} - C_2H_5$

A. (i)

B. (ii) and (iii)

C. (iii)

D. (i) and (ii)

Answer: C

View Text Solution

9. The treatment of ethyl formate with excess of RMgX gives ..... .

A. $R - \underset{O}{\overset{||}{\underset{||}{C}}} - R$

B. $R - \underset{OH}{\overset{|}{\underset{|}{C}}} - R$

C. $R - CHO$

D. $R - O - R$

Answer: C

View Text Solution

10. Benzene reacts with Cl_2 in the presence of $FeCl_3$ and in absence of sunlight to form

A. Chlorobenzene

B. Benzyl chloride

C. Benzal chloride

D. Benzene hexachloride

Answer: A

View Text Solution

11. The name of $C_2F_4Cl_2$ is ..... .

A. Freon - 112

B. Freon - 113

C. Freon -114

D. Freon - 115

Answer: C

View Text Solution

12. Which of the following reagent is helpful to diferentiate ethylene dichloride and ethylidene chloride?

A. Zn/methanol

B. KOH/ ethanol

C. Aqueous KOH

D. $ZnCl_2 / conc.\ HCl$

Answer: C

View Text Solution

13. Match the compounds given in Column I with suitable items given in Column II.

A. $A \to 2, B \to 4, C \to 1, D \to 3$

B. $A \to 3, B \to 2, C \to 4, D \to 1$

C. $A \to 1, B \to 2, C \to 3, D \to 4$

D. $A \to 3, B \to 1, C \to 4, D \to 2$

Answer: D

View Text Solution

14. Assertion: In monohaloarenes, electrophilic substitution occurs at ortho and para positions.

Reason: Halogen atom is a ring deactivator.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B

View Text Solution

15. Consider the reaction, $CH_3CH_2CH_2Br + NaCN \rightarrow CH_3CH_2CH_2CN + NaBr$ This reaction will be the fastest in ..... .

A. ethanol

B. methanol

C. DMF(N. N'-dimethyl formamide)

D. water

Answer: C

View Text Solution

16. Freon-12 is manufactured from tetrachloromethane by ..... .

A. Wurtz reaction

B. Swarts reaction

C. Haloform reaction

D. Gattermann reaction

Answer: B

View Text Solution

17. The most easily hydrolysed molecule under S_{N1} condition is ..... .

A. allyl chloride

B. ethyl chloride

C. sopropyl chloride

D. benzyl chloride

Answer: D

View Text Solution

18. The carbocation fomed in S_{N1} reaction of alkyl halide in the slow step is ..... .

A. sp^3hybridised

B. sp^2 hybridised

C. sp hybridised

D. none of these

Answer: B

View Text Solution

19. The major products obtained when chlorobenzene is nitrated with HNO_3 and conc. H_2SO_4

A. 1-chloro-4-nitrobenzene

B. 1-chloro-2-nitrobenzene

C. 1-chloro-3-nitrobenzene

D. 1-chloro-1-nitrobenzene

Answer: A

View Text Solution

20. Which one of the following is most reactive towards nucleophilic substitution reaction ?

A. 

B. 

C. 

D. 

Answer: D

View Text Solution

21. Ethylidene chloride on treatment with aqueous KOH gives ..... .

A. acetaldehyde

B. ehtylene glycol

C. formaldehyde

D. glyoxal

Answer: A

View Text Solution

22. The raw material for Rasching process is ..... .

A. chlorobenzene

B. phenol

C. benzene

D. anisole

Answer: C

View Text Solution

23. Chloroform reacts with nitric acid to produce ..... .

A. nitro-toluene

B. nitro-glycerine

C. chloropicrin

D. chloropicric acid

Answer: C

View Text Solution

24. Acetone $\xrightarrow[(ii)\, H_2O / H^{-1}]{(i)\, CH_3Mgl} X$. X is ..... .

A. 2-propanol

B. 2-methyl-2-propanol

C. 1-propanol

D. acetonol

Answer: B

View Text Solution

25. Silver propionate when refluxed with Bromine in carbon tetrachloride give ..... .

A. propionic acid

B. chloroethane

C. bromoethane

D. chloropropane

Answer: C

View Text Solution

Textual Evaluation Solved Short Answer Questions

1. Classify the following compounds in the form of alkyl. allylic. vinyl. benzylic halides:

(a) $CH_3 - CH = CH - Cl$ (b) $C_6H_5CH_2I$

(c) $CH_3 - \underset{\underset{Br}{|}}{CH} - CH_3$ (d) $CH_2 = CH - Cl$

View Text Solution

2. Why chlorination of methane is not possible in dark?

View Text Solution

3. How will you prepare n-propyl iodide from n-propyl bromide?

View Text Solution

4. Which alkyl halide from the following pair is (i) chiral (ii) undergoes faster S_{N^2} reaction?

View Text Solution

5. How does chlorobenzene react with sodium in the presence of ether? What is the nane of the reaction ?

View Text Solution

6. Give reasons for polarity of C-X bond in haloalkanes.

View Text Solution

7. Why is it necessary to avoid even traces of moisture during the use of Grignard reagent?

View Text Solution

8. What happens when acetyl chloride is treated with excess of CH_3Mgl?

View Text Solution

9. Anange the tollowing alkyl halide in increasing order of bond enthalpPy ot RX: $CH_3Br, CH_3F, CH_3Cl, CH_3I$

View Text Solution

10. What happens when chloroform reacts with oxygen in the presence ot sunlignt ?

View Text Solution

11. Write down the possible isomers of $C_5H_{11}Br$ Br and give their IUPAC and common names.

View Text Solution

12. Mention any three methods of preparation of haloalkanes from alcohols.

View Text Solution

13. Compare S_{N1} and S_{N2} reaction mechanisms.

View Text Solution

14. Reagents and the conditions used in the reactions are given below. Complcte the table by writing down the product and the name of the rcaction.

View Text Solution

15. Discuss the aromatic nucleophilic substitution reactions of chlorobenzene.

View Text Solution

16. Account for the following (i) t-butyl chloride reacts with aqueous KOH by S_{N^1} mechanism while n-butyl chloride reacts with S_{N^2} mechanism.

(ii) p-dichlorobenzene has higher melting point than those of o-and m -dichlorobenzene.

View Text Solution

17. In an experiment ethyliodide in ether is allowed to stand over magnesium pieces. Magnesium dissolves and product is formed

(a) Name the product and write the equation for the reaction.

(b) Why all the reagents used in the reaction should be dry? Explain.

(c) How is acetone prepared from the product obtained in the experiment?

View Text Solution

18. Write a chemical reaction useful to prepare the following:

(i) Freon-12 from carbon tetrachloride.

(ii) Carbon tetrachloride from carbon disulphide.

View Text Solution

19. What are Freons? Discuss their uses and environmental effects.

View Text Solution

20. Predict the products when bromoethane is treated with the following:

(i) KNO_2 (ii) $AgNO_2$

View Text Solution

21. Explain the mechanism of S_{N^1} reaction by highlighting the stereochemistry behind it.

View Text Solution

22. Write short notes on the the following :

(i) Raschig process (ii) Dows Process (ii) Darzens process

View Text Solution

23. Starting from CH_3MgI. How will you prepare the following ?

(i)Acetic acid (ii) Acetone (iii) Ethyl acetate (iv) Isopropyl alcohol (v) Methyl cyanide

View Text Solution

24. Complete the following reactions:

(i) $CH_3 - CH = CH_2 + HBr \xrightarrow{\text{Peroxide}}$ (ii) $CH_3 - CH_2 - Br + NaSH \xrightarrow[H_2O]{\text{Alcohol}}$

(iii) $C_6H_5Cl + Mg \xrightarrow{THF}$ (iv) $CHCl_3 + HNO_3 \xrightarrow{\Delta}$

(v) $CCl_4 + H_2O \xrightarrow{\Delta}$

View Text Solution

25. Explain the preparation of the following compounds:

(i) DDT (ii) Chloroform (ii) Biphenyl (iv) Chloropicrin (v)Freon-12

View Text Solution

26. An organic compound (A) with molecularformula C_2H_5Cl reacts with KOH gives compounds (B) and with alcoholic KOH gives compound (C). Identify (A), (B) and (C)

View Text Solution

27. Simplest alkene (A) reacts with HCl to form compound (B).Conmpound (B) reacts with ammonia to form compound (C) of molecular formula C_2H_7N. Conpound (C) undergoes carbylamine test. Identify (A). (B), and (C).

View Text Solution

28. A hydrocarbon C_3H_6 (A) reacts with HBr to form compound (B). Compound (B) reacts with aqueous potassium hydroxide to give (C) of molecular formula C_3H_8O. What are (A) (B) and (C). Explain the reactions.

View Text Solution

29. Two isomers (A) and (B) have the same molecular formula $C_2H_4Cl_2$. Compound (A) reacts with aqueous KOH, gives compound (C) of molecular formula C_2H_4O. Compound (B) reacts with aqueous KOH. gives compound (D) of molecular formula $C_2H_6O_2$. Identify (A), (B), (C) and (D).

View Text Solution

Evaluate Yourself

1. Write the IUPAC name of the following:

View Text Solution

2. Write the structure of the following compounds:

(i) 1-Bromo-4-ethylcyclo hexane (ii) 1,4-Dichlorobut-2-ene

(iii) 2 Chloro-3- methyl pentane

View Text Solution

3. Write all possible chain isomers with molecular formula $C_5H_{11}Cl$.

View Text Solution

4. neo-pentyl bromide undergoes nucleophilic substitution reactions very slowly. Justify.

View Text Solution

5. Why Grignard reagent should be prepared in anhydrous condition?

View Text Solution

6. Tlaloalkanes undergo nucleophilic substitution reaction whereas haloarenes undergo clectrophilic substitution reaction. Comment.

View Text Solution

7. Chloroform is kept with a little ethyl alcohol in a dark coloured bottle. Why?

View Text Solution

8. What is the IUPAC name of the insecticide DDT? Why is their use banned in most of the countries?

View Text Solution

Additional Questions Solved Choose The Correct Answer

1. Which of the following is an example for polyhalo compounds?

A. Vinyl iodide

B. Chlorobenzene

C. Allyl chloride

D. Chloroform

Answer: D

View Text Solution

2. Which of the following is a secondary haloalkane'?

A. Bromoethane

B. 2-Chloropropane

C. 2-Iodo-2-methylpropane

D. 1-Chloropropane

Answer: B

View Text Solution

3. How many isomers are possible for the formula C_4H_9Cl ?

A. 3

B. 2

C. 4

D. 5

Answer: C

View Text Solution

4. How many isomers are possible for the formula $C_5H_{11}Br$?

A. 11

B. 8

C. 4

D. 5

Answer: B

View Text Solution

5. Which of the following is called Lucas reagent?

A. Conc. H_2SO_4 + Anhydrous $CuSO_4$

B. Conc.HCI + Anhydrous $ZnCl_2$

C. Dil.HCI + $AlCl_3$

D. Conc.HCI +Conc. HNO_3

Answer: B

View Text Solution

6. Which of the following mechanism is followed in the halogenation of alkanes in the presence of U-V light?

A. Nucleophilie substitution

B. Electrophilic addition

C. Free radical substitution

D. imination reaction

Answer: C

View Text Solution

7. The reactivity of alcohols with haloacid is ..... .

A. $3^\circ > 2^\circ > 1^\circ$

B. $1^\circ > 2^\circ > 3^\circ$

C. $2^\circ > 3^\circ > 1^\circ$

D. $3^\circ > 1^\circ > 2^\circ$

Answer: A

View Text Solution

8. Which of the following reagent is not used to convert alcohol to haloalkane?

A. $H - X$

B. PX_3

C. CCl_4

D. $SOCl_2$

Answer: C

View Text Solution

9. What is the name of the reaction in which bromoethane is converted to iodoethane by reacting with Nal in acetone?

A. Hunsdicker reaction

B. Dow's process

C. Finkelstein reaction

D. Swarts reaction

Answer: C

View Text Solution

10. Identify the correct order of boiling point of haloalkanes?

A.

$$CH_3 - CH_2 - CH_2 - CH_2Cl > (CH_3)_3C - Cl > CH_3 - CH_2 - C$$

B.

$$CH_3 - CH_2 - CH_2 - CH_2Cl > CH_3 - CH_2 - \underset{Cl}{\overset{|}{CH}} - CH_3 < (CH$$

C.

$$CH_3 - CH_2 - CH_2 - CH_2Cl > CH_3 - CH_2 - CH_3 - \underset{Cl}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}} - CH_3$$

D.

$$CH_3 - \underset{CH_3}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}} - Cl > CH_3 - CH_2 - \underset{Cl}{\overset{|}{CH}} - CH_3 > CH_3 - CH_2 - CH$$

Answer: C

View Text Solution

11. Which of the following pair functional groups represents ambident nucleophiles?

A. $-SH \& -OH$

B. $-CN \& -NO_2$

C. $-Br\&-Cl$

D. $-O-\&-CHO$

Answer: B

View Text Solution

12. Which one following mechanism will be followed when Tartiary butyl chloride is treated with alcoholic KOH?

A. S_{N^1} mechanism

B. E_1 mechanism

C. S_{N^2} mechanism

D. E_2 mechanism

Answer: D

View Text Solution

13. Which one of the following is used for producing pesticides?

A. CHI_3

B. $CHCl_3$

C. CCl_3NO_2

D. CCl_4

Answer: B

View Text Solution

14. Which one of the following react with gringnard reagent followed by hydrolysis will yield primary alcohol?

A. CH_3CHO

B. $HCHO$

C. CH_3COCH_3

D. CO_2

Answer: B

View Text Solution

15. Which one of the following reacts with CH_3Mgl followed by hydrolysis and gives isopropyl alcohol?

A. CH_3COCH_3

B. CH_3CHO

C. $HCHO$

D. $CNCl$

Answer: B

View Text Solution

16. Which one of the following reacts with CH_3Mgl followed by hydrolysis to yield tert. butyl alchol?

A. CH_3CHO

B. $HCHO$

C. $CH_3COOC_2H_5$

D. CH_3COCH_3

Answer: D

View Text Solution

17. Which one of the following reacts with CH_3Mgl followed by acid hydrolysis to yield acetic acid?

A. $CNCl$

B. $CH_3COOC_2H_5$

C. $HCOOC_2H_5$

D. CO_2

Answer: D

View Text Solution

18. Which one of the following reagent react with methyl magnesium iodide followed by acid hydrolysis to give ethyl acetate?

A. Chlorodimethyl ether

B. Ethyl chloroformate

C. Ethyl formate

D. Acetaldehyde

Answer: B

View Text Solution

19. Which one of the following is used as fibre -swelling agent in textile processing ?

A. Chlorobenzene

B. Chloroform

C. Chloral

D. Chloroethane

Answer: A

View Text Solution

20. Which one of the following is a gem-dihalide?

A. CH_3CHCl_2

B. $\begin{matrix} CH_2 - CH_2 \\ | \quad\quad | \\ Cl \quad\quad Cl \end{matrix}$

C. $CH_3 - CH_2Cl$

D. $C_6H_4Cl_2$

Answer: A

View Text Solution

21. Which of the following reagent is used to distinguish gem-dihalides and vicinal dihalides?

A. Alcoholic KOH

B. Aqueous KOH

C. $FeCl_3 / Cl_2$

D. Ethanol

Answer: B

View Text Solution

22. Which one of the following is used in the conversion of ethyliden dichloride to Acetylene?

A. Zn+ Methanol

B. KOH+Ethanol

C. Aqueous NaOH

D. Alcoholic KOH

Answer: B

View Text Solution

23. Which one of the following is used as a metal cleaning solvent?

A. Isopropylidene chloride

B. Methylene chloride

C. Chloroform

D. Iodoform

Answer: B

View Text Solution

24. Which one of the following is used as an insecticide and as a soil sterilising agent?

A. Chloroform

B. Chloral

C. Chloropicrin

D. Tetrachloromethane

Answer: C

View Text Solution

25. Which one of the following is used to test primary amines?

A. Schiff's test

B. Carbylamine test

C. Dye test

D. Silver mirror test

Answer: B

View Text Solution

26. Which one of the following is used as propellant for aerosols and foams?

A. Freons

B. Methylidene chloride

C. Chloral

D. Chloroform

Answer: A

View Text Solution

27.  The product X is :

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

28. Which one of the following will undergo S reaction faster?

A. 

B. 

C. 

D. 

Answer: A

View Text Solution

29. Which one of the following compounds does not undergo nucleophilic substitution reactions at all?

A. Ethyl bromide

B. Vinyl chloride

C. Benzyl chloride

D. Isopropyl chloride

Answer: B

View Text Solution

Additional Questions Solved Fill In The Blanks

1. ..... is used in the treatment of typhoid.

View Text Solution

2. ..... is used in the treatment of malaria.

View Text Solution

3. ..... is used as an anesthetic.

View Text Solution

4. ..... is used for cleaning electronic equipments.

View Text Solution

5. The IUPAC name of $CH_2 = CH - CH_2Cl$ is ..... .

View Text Solution

6. The structure of Vinyl iodide is ..... .

View Text Solution

7. 2-iodo-2-methylpropane belongs to ..... type.

View Text Solution

8. The structure of 2-Iodo-2-methylpropane is ..... .

View Text Solution

9. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - CH_2Br$, the IUPAC name of this compound is ..... .

View Text Solution

10. The IUPAC name of $CH_2 = CHCl$ is ..... .

View Text Solution

11. The IUPAC name of $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{Br}{|}}{C}} - undeset(Cl)CH - \underset{\underset{CH_3}{|}}{C}\ H - CH_3$ is ..... .

View Text Solution

12. The IUPAC name of $CH_2 = \underset{\underset{}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2Cl$ is ..... .

View Text Solution

13. The reactivity of haloacids (HCI, HBr, HI) with alcohol is in the order..... .

View Text Solution

14. The decreasing order of bond length among alkyl halides $(CH_3I, CH_3Br, CH_3F, CH_3Cl)$ is in the order in the order .....

.

View Text Solution

15. The bond strength of C-X for the C-CI,C-Br,C-I,C-F decreases in the order is ..... .

View Text Solution

16. The catalyst used in Darzen halogenation of alcohol is ..... .

View Text Solution

17. In Finkelstein reaction, the mechanism followed is ..... .

View Text Solution

18. Silver salt of fatty acid is converted to bromo alkane by ..... .

View Text Solution

19. In Swarts reaction, chloroalkane is converted to ..... .

View Text Solution

20. The conversion of bromoalkane to fluroalkane by heating with AgF is called ..... .

View Text Solution

21. The decreasing order of boiling point of haloalkanes $CH_3Br, CH_3Cl, CH_3F, CH_3I$ is ..... .

View Text Solution

22. The correct increasing order of boiling point of haloalkanes $CH_3Cl, CHCl_3, CH_2Cl_2, CCl_4$ ..... .

View Text Solution

23. Ethyl bromide reacts with alcoholic AgCN to form ..... .

View Text Solution

24. Ethyl bromide reacts with alcoholic KNO_2 to form ..... .

View Text Solution

25. The reaction in which sodium alkoxide react with haloalkane to form ether in called ..... .

View Text Solution

26. Primary alkyl halide react with aqueous NaOH follows ..... .

View Text Solution

27. Tertiary butyl bromide reacts with aqueous KOH follows ..... .

View Text Solution

28. The product formed when tertiary butyl chloride is treated with alcoholic KOH is ..... .

View Text Solution

29. When 2-bromobutane reacts with alcoholic KOH, the products formed are ..... .

View Text Solution

30. The product formed when iodoethane is treated with HI in the presence of red phosphorous is ..... .

View Text Solution

31. ..... is used as an antiseptic.

View Text Solution

32. ..... is used for extinguishing the fire caused by oil or petrol under the commercial name pyrene.

View Text Solution

33. Ethyl formate reacts with methyl magnesium iodide followed by acid hydrolysis to yield ..... .

View Text Solution

34. Ethyl-methyl ether ethene is obtained by the action of methyl magnesium iodide with ..... .

View Text Solution

35. The catalyst used in the preparation of chlorobenzene from benzene is ..... .

View Text Solution

36. In the Gattermann reaction of preparation of chlorobenzene from benzene, the catalyst used is ..... .

View Text Solution

37. The conversion of benzene diazonium chloride to chlorobenzene in the presence of $Cu_2Cl_2 + HCl$ is named as ..... .

View Text Solution

38. Fluorobenzene is prepared from benzene diazonium chloride by ..... .

View Text Solution

39. Conversion of benzene to chlorobenzene in the presence of $CuCl_2 / HCl$ is named as ..... .

View Text Solution

40. The conversion of chlorobenzene to phenol by the action of NaOH is called ..... .

View Text Solution

41. In Wurtz fittig reaction, chlorobenzene is converted to ..... by reacting it with ethyl chloride.

View Text Solution

42. The product obtained in fittig reaction of chlorobenzene is ..... .

View Text Solution

43. The reagent used in the conversion of Chlorobenzene to Benzene is ..... .

View Text Solution

44. Iso-propylidene chloride is an example of ..... .

View Text Solution

45. The IUPAC name of $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{Br}{|}}{C}} - CH_2Br$ is ..... .

View Text Solution

46. The reagent used in the conversion of ethylene dichloride is ..... .

View Text Solution

47. Chloroform is converted to methylene-chloride by the action of ..... .

View Text Solution

48. The reagents used in the preparation of chloroform are ..... .

View Text Solution

View Text Solution

49. The formula of Chloropicrin is ..... .

View Text Solution

50. The product formed when methylamine react with chloroform and alkali is ..... .

View Text Solution

51. The product lormed when CCl_4 reacts with hot water vapours is ..... .

View Text Solution

52. The formula of Freon 11 is ..... .

View Text Solution

53. The lormula of Freon 12 is ..... .

View Text Solution

54. The catalyst used in the preparation of CCl_2F_2 from CCl_4 and HF is ..... .

View Text Solution

55. The reagents used to prepare DDT are ..... .

View Text Solution

56. The name of $CFCl_3$ is ..... .

View Text Solution

57. The treatment of acetone with excess of RMgX gives:

View Text Solution

58. The most easily hydrolysed molecule under S_{N^2} reaction is ..... .

View Text Solution

59. $HCHO \xrightarrow[(ii)\, H_2 \frac{\emptyset}{H^+}]{(i)\, CH_3MgI} X.$ the product 'X' is ..... .

View Text Solution

60. On heating $CHCl_3$ with aqeuous NaOH solution, the product formed is ..... .

View Text Solution

61. Chloropicrin is used as ..... .

View Text Solution

62. Iodoform can be usetd as ..... .

View Text Solution

63. In oil fire extinguisher, the compound used pyrene is chemically ..... .

View Text Solution

64. Reaction of ethyl chloride with sodium metal leads to the formation of ..... .

View Text Solution

65. When chloroform is treated with primary amine and KOH, we get ..... .

View Text Solution

Additional Questions Solved Choose The Odd One Out

1. Choose the odd one out.

A. CH_3Br

B. $CH_3 - CH_2Br$

C. $(CH_3)_3C - Br$

D. $CH_3 - CH_2 - CH_2Br$

Answer: C

View Text Solution

2. Choose the odd one out.

A. Finkelstein reaction

B. Wurtz reaction

C. Swarts reactíon

D. Friedel crafts alkylation

Answer: D

View Text Solution

3. Choose the odd one out.

A. PCl_5

B. $SOCl_2$

C. HCl

D. HF

Answer: D

View Text Solution

4. Choose the odd one out.

A. Aerosol spray propellant

B. Metal cleaning agent

C. Anaesthetic agent

D. Solvent in paint remover

Answer: C

View Text Solution

Additional Questions Solved Choose The Correct Pair

1. Choose the correct pair.

A. Chlorobenzene + chloral : DDT

B. Chloroform + HNO_3 : Phosgene

C. Chloroform + Zn / HCl : Methyl isocyanide

D. Methane + $4Cl_2$: Carbon tetra chloride

Answer: C

View Text Solution

2. Choose the correct pair.

A. Chloroform : Analgesic

B. Freon : Propellant

C. Chloropicrin : Antisptic

D. DDT : Propellant

Answer: B

View Text Solution

3. Choose the correct pair.

A. Feron : Refrigerant

B. DDT : Antiseptic

C. Methylene : Soil sterilizing agent

D. Iodoform : Anaesthetic

Answer: A

View Text Solution

4. Choose the correct pair.

A. $HCOH + CH_3MgI$: Secondary alcohol

B. $CH_3CHO + CH_3MgI$: Tertiary alcohol

C. $CH_3COCH_3 + CH_3MgI$: Primary alcohol

D. $CO_2 + CH_3MgI$: Acetic acid

Answer: D

View Text Solution

5. Choose the correct pair.

A. $(CH_3)_3C - Cl +$ alcoholic $\mathrm{KOH}: S_{N^1}$ reaction

B. $(CH_3)_3C - Cl +$ alcoholic $\mathrm{KOH}: E_1$ reaction

C. $(CH_3)_3C - Cl +$ aqueous $\mathrm{KOH}: S_{N^2}$ reaction

D. $CH_3 - Cl +$ aqueous $KOH: S_{N^1}$reaction

Answer: B

View Text Solution

Additional Questions Solved Choose The Incorrect Pair

1. Choose the incorrect pair.

A. $CH_3 - CH_2OH + SOCl_2 \rightarrow CH_3CH_2Cl$: Darzen's halogenation

B. $CH_3 - CH_2Br + AgF \xrightarrow{\Delta} CH_3 - CH_2F$: Swarts reaction

C. $CH_3CH_2COOAg + Br_2 \underset{\Delta}{\overset{CCl_4}{\longrightarrow}} CH_3 - CH_2Br$: Hynsdicceker reaction

D. $CH_3 - CH_2Br + NaI \xrightarrow{\text{Acetone}} CH_3CH_2I$: Wurtz reaction

Answer: D

View Text Solution

2. Choose the incorrect pair.

A. $CH_3I > CH_3Br > CH_3Cl > CH_3F$: decreasing order of boiling point

B. $CCl_4 > CHCl_3 > CH_2Cl_2 > CH_3Cl$: increasing order of boiling point

C. $CH_3 - CH_2 - CH_2Cl < CH_2Cl < CH_3CH_2Cl < CH_3Cl$:

increasing order of boiling point

D.

$$CH_3 - CH_2 - CH_2 - CH_2Cl > CH_3 - CH_2 - \underset{Cl}{CH} - CH_3 > (CH$$

: decreasing order of boiling point

Answer: C

View Text Solution

3. Choose the incorrect pair.

A. $(CH_3)_3C - Br +$ aqueous $\mathrm{KOH}: S_{N^1}$ reaction

B. $(CH_3)_3C - Br +$ alcoholic $\mathrm{KOH}: E_1$ reaction

C. $CH_3Br +$ aqueous KOH $: E_2 reaction$

D. $CH_3Br +$ aqueous $\mathrm{KOH}: E_2$ reaction

Answer: C

View Text Solution

4. Choose the incorrect pair.

A. 1 - chloro paroane + alcoholic KOH : propene

B. Tert. Butyl bromide + Alcoholic KOH : Isobutylene

C. $CH_3 - CH_2I + HI + \text{Red P}$: Ethane

D. $CH_3CHO - CH_3MgI$: Tert. Butyl alcohol

Answer: D

View Text Solution

5. Choose the incorrect pair.

A. $HCHO + CH_3MgI$: Primary alcohol

B. $CH_3CHO + CH_3MgI$: Secondary alcohol

C. $CH_3COCH_3 + CH_3MgI$: Aromatic alcohol

D. $CO_2 + CH_3MgI$: Aromatic alcohol

Answer: C

View Text Solution

Additional Questions Solved Assertion Reason

1. Assertion (A): The C-I in CH_3X is weak.

Reason (R): Larger the size, greater is the bond length and weaker is the bond formed.

A. Both (A) and (R) are correct and (R) is the correct explanation of (A).

B. Both (A) and (R) are correct but (R) is the correct explanation of (A).

C. (A) is correct but (R) is wrong

D. (A) is wrong but (R) is correct

Answer: A

View Text Solution

View Text Solution

2. Assertion (A): Haloalkanes have higher boiling point and melting point than the parent alkanes having the same number of carbon.

Reason (R): The intermolecular forces of atraction and dipole-dipole interactions are stronger in haloalkanes.

A. Both (A) and (R) are correct and (R) is the correct explanation of (A).

B. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

3. Assertion (A): Among isomeric halides, the boiling point decreases with increase in branching in alkyl group.

Reason (R): With the increase in branching, the molecule attains spherical shape with less surface area and less forces of interaction.

A. Both (A) and (R) are correct and (R) is not the correct explanation of (A).

B. Both (A) and (R) are correct and (R) is the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

4. Assertion (A): The melting point of para halobenzene is higher than that of ortho and meta isomers.

Reason (R): The higher melting point of p-1somer is due to its symmetry

which leads to more close packing of its molecules in the crystal and subsequently p-isomer have strong intermolecular attractive forces.

A. both (A) and (R) are correct and (R) is the correct explanation of (A).

B. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

5. Assertion (A): Haloarenes are insoluble in water.

Reason (R): Haloarenes are able to form hydrogen bonds with water.

A. Both (A) and (R) are correct but (R) is the correct explanation of (A).

B. both (A) and (R) are correct and (R) is not the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct

Answer: C

View Text Solution

6. Assertion (A): Haloarenes do not undergo nucleophilic substitution reactions readily. Reason (R): The C - X bond in aryl halides is short and stronger and also the aromatic ring is a centre of high electron density.

A. Both (A) and (R) are correct and (R) is the correct explanation of (A).

B. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

7. Assertion (A): Chloroform vapours can be used as an anaesthetie.

Reason (R): Chloroform vapours depresses the central nervous system and cause unconsciousness.

A. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

B. Both (A) and (R) are correct and (R) is the correct explanation of (A).

C. (A) is correct but (R) is wrong.

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

8. Assertion (A): Nowadays chloroform is not used as an anaesthetic.

Reason (R): Chloroform undergoes oxidation in the presence of light and air to form highly poisonous phosgene.

A. Both (A) and (R) are correct and (R) is the correct explanation of (A).

B. Both (A) and (R) are correct but (R) is not the correct explanation of (A).

C. (A) is correct but (R) is wrong

D. (A) is wrong but (R) is correct.

Answer: A

View Text Solution

9. Assertion (A): DDT is banned now-a-days.

Reason (R): DDT has a long term toxic effect.

A. Both assertion and reason are true and reason is the correct explanation of assertion.

B. Both assertion and reason are true but reason is not the correct explanation ol assertion.

C. Assertion is true but reason is false.

D. Assertion is false but reason is true.

Answer: A

View Text Solution

Additional Questions Solved Choose The Correct Statement

1. Choose the correct statement.

A. Halo alkanes have higher boiling point than the parent alkane with same number of carbons because of strong inter molecular forces

of attraction.

B. The boiling point of halo alkanes decreases with the increase of halogen atoms.

C. The boiling point of mono halo alkanes decreases with the increase in the number of carbon atoms.

D. Halo alkanes are soluble in water.

Answer: A

View Text Solution

2. Choose the correct statement.

A. Halo alkanes are soluble in water.

B. The boiling point of halo alkanes increase with the increase in the number of halogen atoms.

C. The melting point of mono halo alkane decrease with the increase in the number of carbon atoms.

D. The density of alkyl halides are lesser than those of hydrocarbons of comparable molecular weight.

Answer: B

View Text Solution

3. Choose the correct statement.

A. Williamson's synthesis of ether is an example of nucleophilic substitution reaction.

B. Reactionofmethyl bromide with aqueous potassium hydroxide is an example of elimination reaction.

C. Reaction of Tertiary butyl bromide with alcoholic KOH is an example of S_{N^2} reaction.

D. Reaction of Tertiary butyl bromide with alcoholic KOH is an example of E_2 reaction.

Answer: A

View Text Solution

Additional Questions Solved 2 Marks Questions

1. Write the IUPAC names of (i) $CH_2 = CHCl (ii) CH_2 = CH - CH_2Br$

View Text Solution

2. Write the structural formula of the following compounds :

(i) 2- Chloro- 2- Methylpropane

(ii) 1- Bromo-2 , 2-Dimethylpropane

View Text Solution

3. How many isomers are possible for the formula C_3H_7F? Give their structures and names

View Text Solution

4. Write the isomeric structures and names for the formula $C_2H_4Cl_2$

View Text Solution

5. Draw the structures of (i) 1-bromo-2 , 3-dichlorobutane

(ii) 2-bromo-3-chloro-2 , 4-dimethyl pentane

View Text Solution

6. What happens when HI reacts with teri-butyl alcohol ?

View Text Solution

7. Explain the action of (i) PCl_5 (ii) PCl_3 with ethanol

View Text Solution

8. How does HBr react with propene?

View Text Solution

9. How methane reacts with Cl_2 in the presence of light ?

View Text Solution

10. Explain-Finkelstein reaction.

View Text Solution

11. Explain Swarts reaction .

View Text Solution

12. What happens when silver propionate reacts with Br_2 in CCl_4 ?

View Text Solution

13. Haloalkanes have higher boiling point and melting point than the parent alkane. Justify this statement.

View Text Solution

14. $CCl_4 > CHCl_3 > CH_2Cl_2 > CH_3Cl$ is the decreasing order of boiling point in haloalkanes . Give reason .

View Text Solution

15. Arrange the following in increasing order of boiling point . Give reason

.

$(CH_3CH_2CH_2Cl, CH_3CH_2Cl, CH_3Cl)$

View Text Solution

16. Why haloalkanes are insoluble in water but soluble in organic solvents?

View Text Solution

17. What happens when bromoethane is treated with moist silver oxide?

View Text Solution

18. Complete the following reactions :

(i) $CH_3 - CH_2Br + KOH(\text{aqueous}) \xrightarrow{\text{Boil}} X + Y$

(ii) $CH_3 - CH_2Br + NH_3 \rightarrow X + Y$

View Text Solution

19. Explain the action of sodium hydrogen sulphide with bromoethane ?

View Text Solution

20. Explain Williamson's synthesis.

View Text Solution

21. Explain the action of alcoholic potash with bromoethane.

View Text Solution

22. State-Saytzeff's rule.

View Text Solution

View Text Solution

23. How will you convert 1-chloropropane to propene?

View Text Solution

24. What is Grignard reagent? How is it prepared from ethyl bromide?

View Text Solution

25. How will you prepare ethyl lithium ?

View Text Solution

26. What is tetraethyl lead ? How is it prepared ?

View Text Solution

27. Convert bromoethane to ethane .

View Text Solution

28. How is iodoethane converted to ethane ?

View Text Solution

29. Starting from CH_3MgI , how will you prepare acetaldehyde ?

View Text Solution

30. How will you get acetone from methyl magnesium iodide ?

View Text Solution

31. Explain the action of Ethyl chloroformate with Methyl magnesium iodide .

View Text Solution

32. Write the IUPAC names of :

View Text Solution

33. How is benzene directly converted to chlorobenzene ?

View Text Solution

34. Explain Sandmeyer's reaction .

View Text Solution

35. Explain Gattermann reaction.

View Text Solution

36. How will you prepare iodobenzene ?

View Text Solution

37. Explain-Balz-Schiemann reaction.

View Text Solution

38. p-dichlorobenzene has higher melting point than ortho and meta dichloro benzene. Why?

View Text Solution

39. Explain Wurtz- fitting reaction .

View Text Solution

40. How will you get benzene from chlorobenzene ?

View Text Solution

41. Explain about the preparation of phenyl magnesium chloride .

View Text Solution

42. How will you prepare ethylidene dichloride from acetylene ?

View Text Solution

43. What is gem-dihalide? Give one example and explain its preparation.

View Text Solution

44. Explain the action of zinc and HCl on chloroform .

View Text Solution

45. How does nickel react with chloroform?

View Text Solution

46. Convert methane to methylene chloride

View Text Solution

47. Explain Carbylamine reaction.(or) Give the characteristic test for primary amine.

View Text Solution

48. How will you prepare carbon tetrachloride ?

View Text Solution

49. How will you convert carbon tetrachloride to chloroform ?

View Text Solution

50. What are freons ? How are they named ? Give two examples .

View Text Solution

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

View Text Solution

52. Which compound in each of the following pairs will react faster in S_N2 reaction with OH ion ? (i) CH_3Br or CH_3I

(ii) $(CH_3)_3CCl$ or CH_3Cl

View Text Solution

53. The treatment of alkyl chlorides with aqueous KOH solution leads to the formation of alcohols but in the presence of alcoholic KOH solution, alkenes are the major product. Explain.

View Text Solution

54. Give one example of each of the following reactions :

(i) Wurtz Reaction (ii) Wurtz - Fitting reaction

View Text Solution

55. How will you distinguish between the folloWing pair of compounds:

(i) Chloroform and carbon tetrachloride,

(ii) Benzyl alcohol and chlorobenzene.

View Text Solution

Additional Questions Solved 3 Marks Questions

1. Give one example with structure and name for each of the following compounds.

(a) Primary haloalkane (b) Secondary haloalkane (c) Tertiary haloalkane

View Text Solution

2. Write the possible isomers for the formula C_4H_9Cl with structures and names.

View Text Solution

3. Among

$$CH_3CH_2CH_2CH_2Cl, CH_3 - \underset{\underset{Cl}{|}}{CH} - CH_2 - CH_3, (CH_3)_3C - Cl.$$

Which one has low boling point ? Give reason.

View Text Solution

4. Explain ammonolysis of haloalkanes. (or) How excess of haloalkane react with alcoholic ammonia?

View Text Solution

5. Explain how bromoethane reacts with (i) alcoholic KCN (ii) alcoholic AgCN

View Text Solution

6. Explain the hydrolysis of 2-bromobutane with aqueous KOH.

View Text Solution

7. Explain the action of alcoholic KOH with 2-bromobutane.

View Text Solution

8. Mention the uses of chloroform.

View Text Solution

9. What iare the uses of cabon tetrachloride?

View Text Solution

10. What are ogranometallic compounds ? Give one example. Explain the nature of carbon-metal bond.

View Text Solution

11. How would you prepxare acetic acid from methyl magnesium iodide?

View Text Solution

12. Explain the nature of C- X bond in haloarenes and its resonance structure.

View Text Solution

13. Compare the bond length C - X inhaloarenes and C - X in haloalkanes.

View Text Solution

14. What are the uses of chlorobenzene?

View Text Solution

15. What are polyhalogen compounds? Give its types with example.

View Text Solution

16. Give two examples for (1) gem dihalide (2) vicinal dihalide.

View Text Solution

17. Explain two methods of preparation of ethylene dichloride.

View Text Solution

18. How would you distinguish gem-dihalides and vicinal dihalides?

View Text Solution

19. Explain the action of metallic zinc with (i) Ethylidene dichloride (ii) Ethylene dichloride.

View Text Solution

20. What happens when alcoholic KOH is treated with (i) Ethylidene dichloride (ii) Ethylene dichloride?

View Text Solution

21. What are the uses of methylene chloride?

View Text Solution

22. Explain the laboratory preparation of chloroform.

View Text Solution

23. What is chloropicrin? How is it obtained? Mention its uses.

View Text Solution

24. What are the uses of freons?

View Text Solution

25. What is DDT? How is it prepared?

View Text Solution

26. Mention the uses of DDT.

View Text Solution

27. Write the equations for the preparation of 1-iodobutane from:

(i) 1-butanol (ii) 1-chlorobutane (iii) but-1-ene

View Text Solution

28. Explain why:

(i) the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride?

(ii) alkyl halides though polar. are immiscible with water?

(iii) Gringard reagents should be prepared under anhydrous conditions?

View Text Solution

29. Explain as to why haloarenes are much less reactive than' haloalkanes towards nucleophilic substitution reactions?

View Text Solution

30. Do the following conversions:

(i) Methyl bromide to acetone (ii) Benzyl alcohol to 2-phenylacetie acid

View Text Solution

31. Give reasons for the following:

(i) Ethyl iodide undergoes S_{N^2} reactions faster than etheyl bromide.

(ii) $(\pm)$ 2 - Butanol is optically inactive.

(iii) $C-X$ bond lengthin halobenzene is smaller than C -X bond length inCH_3-X.

View Text Solution

32. Write the structure of diphenyl. How is it prepared from chlorobenzene ?

View Text Solution

Additional Questions Solved 5 Marks Questions

1. Explain the classification of organic compounds with example.

View Text Solution

2. Explain S_{N^2} mechanism with suitable example.

View Text Solution

3. S_{N^2} reaction of an optically active haloalkane is accompanied by inversion of configuration at the asymmetric centre. Prove it.

View Text Solution

4. Explain E_2 reaction mechanism with a suitable example.

View Text Solution

5. Describe E, reaction mechanism with a suitable example.

View Text Solution

6. Starting from methyl magnesium iodide how would you prepare (i) Ethanol (i) 2-propanol (iii) Tert-butyl alcohol.

View Text Solution

7. Starting from methyl magnesium iodide, how would you prepare (i) Ethyl methyl ether (ii) methyl cyanide (iii) methane.

View Text Solution

8. Describe electrophilic substitution reaction of chlorobenzene with equations.

View Text Solution

9. An organic compound A of molecular formula C_3H_6 react with HBr in the presence of peroxide to give C_3H_7Br as B. B on reaction with aqueous KOH given C with molecular formula C_3H_8O. Identify A, B and C.

View Text Solution

10. An organic compound A of molecular formula C_2H_6O reacts with thionyl chloride in the presence of pyridine gives B C_2H_5Cl. B on reaction with alcoholic KOH gives C. C_2H_4, C on treatment with Cl_2 gives $C_2H_4Cl_2$ as D. Identify A,B,C,D and explain the reaction.

View Text Solution

11. The simplest aromatic hydrocarbon C_6H_6 reacts B on treatment with sodium hydroxide will (C_6H_5OH), Phenol, C as the product. Also Cl_2 to give A which on reaction with sodium hydroxide gives B. B of molecular formula C_6H_6O. B on treatment with ammonia will give C_6H_7N as D. Identify A, B, C and explain the reactions involved.

View Text Solution

12. An organic compound A of molecular formula C_2H_2 reacts with HCI to give $C_2H_4Cl_2$ as B.B on reaction with aqueous KOH will give C_2H_4O as C. Identify A, B,C,and explain the reaction involved.

View Text Solution

13. Two isomers of formula C_4H_9Br are Aand B, A on reaction with alcoholic KOH gives of molecular formula C_4H_8 by E_1 reaction. B on reaction with alcoholic KOH gives D and E as products by Saytzeff's rule. Identify A, B, C, D, E.

View Text Solution

14. A Simple aromatic hydrocarbon A reacts with Cl_2 to give B of molecular formula C_6H_5Cl. B on reaction with ethyl chloride along with sodium metal gives C of formula C_8H_{10}.C alone reacts with Na metal in the presence of ether to give D $C_{12}H_{10}$. Identify A,B,C & D.

View Text Solution

View Text Solution

15. An organic compound A of molecular formula CH_2O reacts with methyl magnesium iodide followed by acid hydrolysis to give B of molecular formula C_2H_6O. B on reaction with PCl_4 gives C . C on reaction with alcoholic KOH gives D an alkene as the product. Identify A, B ,C ,D and explain the reactions involved.

View Text Solution