

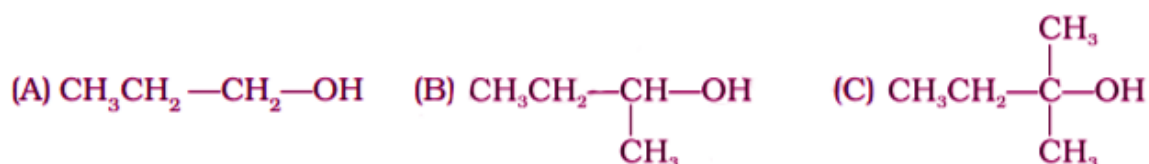
Chapter 10: Haloalkanes and Haloarenes

NCERT Exemplar · Class 12 · Chemistry

Questions

Question 1

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



- (i) (A) > (B) > (C)
- (ii) (C) > (B) > (A)
- (iii) (B) > (A) > (C)
- (iv) (A) > (C) > (B)

Solution

Option (ii) is the answer.

Question 2

Which of the following alcohols will yield the corresponding alkyl chloride on reaction with concentrated HCl at room temperature?

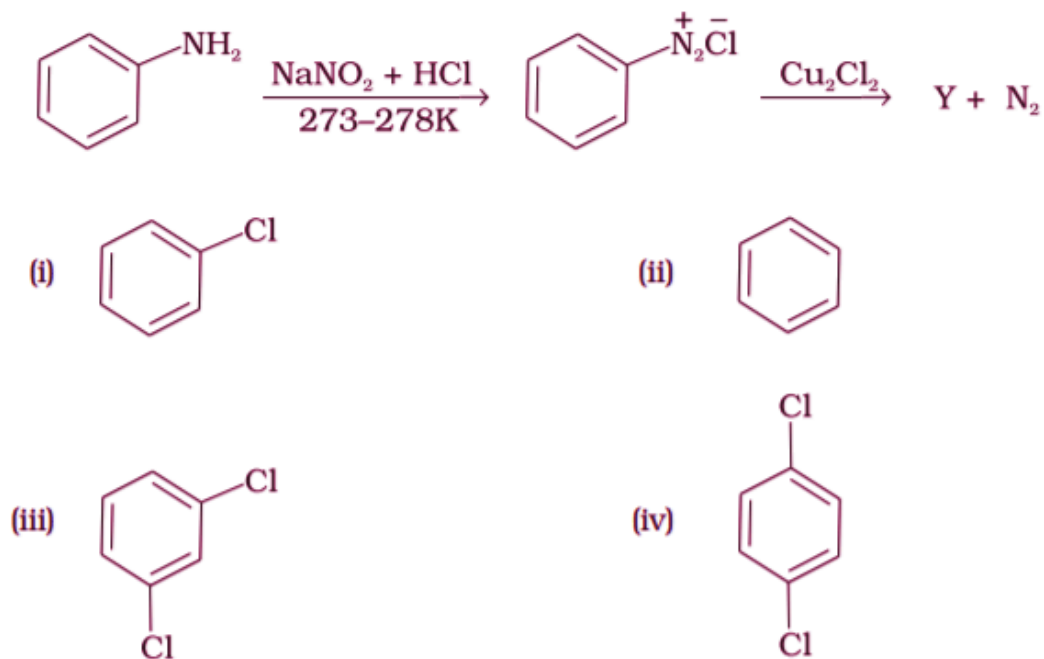
- (i) $\text{CH}_3\text{CH}_2\text{—CH}_2\text{—OH}$
- (ii) $\begin{array}{c} \text{CH}_3\text{CH}_2\text{—CH—OH} \\ | \\ \text{CH}_3 \end{array}$
- (iii) $\begin{array}{c} \text{CH}_3\text{CH}_2\text{—CH—CH}_2\text{OH} \\ | \\ \text{CH}_3 \end{array}$
- (iv) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3\text{CH}_2\text{—C—OH} \\ | \\ \text{CH}_3 \end{array}$

Solution

Option (iv) is the answer.

Question 3

Identify the compound Y in the following reaction.



Solution

Option (i) is the answer.

Question 4

Toluene reacts with a halogen in the presence of iron (III) chloride giving ortho and para halo compounds. The reaction is

(i) Electrophilic elimination reaction

(ii) Electrophilic substitution reaction

(iii) Free radical addition reaction

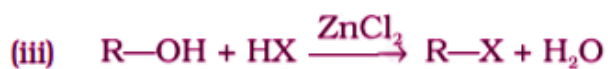
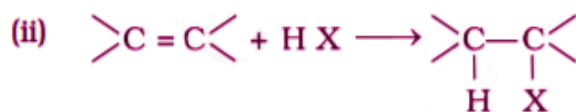
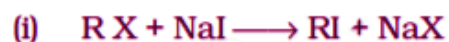
(iv) Nucleophilic substitution reaction

Solution

Option (ii) is the answer.

Question 5

Which of the following is the halogen exchange reaction?



Solution

Option (i) is the answer.

Question 6

Which reagent will you use for the following reaction?



A.

$\text{Cl}_2/\text{UV light}$

B.

$\text{NaCl} + \text{H}_2\text{SO}_4$

C.

Cl_2 gas in dark

D.

Cl_2 gas in the presence of iron in dark

Answer

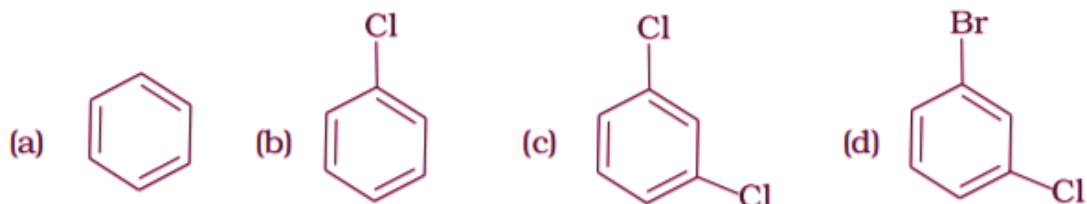
Correct option: A

Solution

Option (i) is the answer.

Question 7

Arrange the following compounds in the increasing order of their densities.



(i) (a) < (b) < (c) < (d)

(ii) (a) < (c) < (d) < (b)

(iii) (d) < (c) < (b) < (a)

(iv) (b) < (d) < (c) < (a)

Solution

Option (i) is the answer.

Question 8

Arrange the following compounds in increasing order of their boiling points.



(i) (b) < (a) < (c)

(ii) (a) < (b) < (c)

(iii) (c) < (a) < (b)

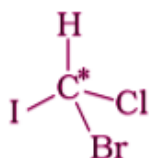
(iv) (c) < (b) < (a)

Solution

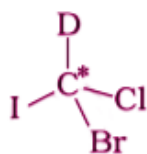
Option (iii) is the answer.

Question 9

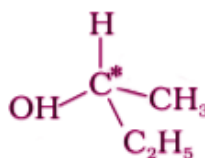
In which of the following molecules carbon atom marked with an asterisk (*) is asymmetric?



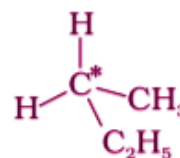
(a)



(b)



(c)



(d)

A.

(a), (b), (c), (d)

B.

(a), (b), (c)

C.

(b), (c), (d)

D.

(a), (c), (d)

Answer

Correct option: B

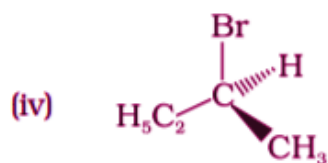
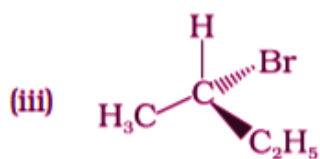
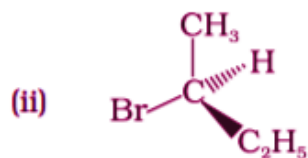
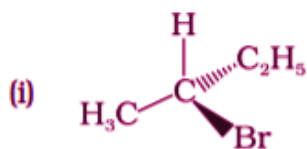
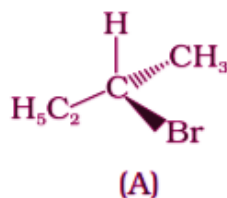
Solution

Option (ii) is the answer.

Question 10

Which of the following structures is enantiomeric with the molecule (A)

given below :

**Solution**

Option (i) is the answer.

Question 11

Which of the following is an example of vic-dihalide?

A.

Dichloromethane

B.

1,2-dichloroethane

C.

Ethylidene chloride

D.

Allyl chloride

Answer

Correct option: B

Solution

Option (ii) is the answer.

Question 12

The position of -Br in the compound in $\text{CH}_3\text{CH}=\text{CHC}(\text{Br})(\text{CH}_3)_2$ can be classified as _____.

(i) Allyl

(ii) Aryl

(iii) Vinyl

(iv) Secondary

Solution

Optuion (i) is the answer.

Question 13

Chlorobenzene is formed by the reaction of chlorine with benzene in the presence of AlCl_3 . Which of the following species attacks the benzene ring in this reaction?

A.

Cl-

B.

Cl⁺

C.

AlCl₃

D.

[AlCl₄]⁻

Answer

Correct option: B

Solution

Option (ii) is the answer.

Question 14

Ethylidene chloride is a/an _____.

(i) vic-dihalide

(ii) gem-dihalide

(iii) allylic halide

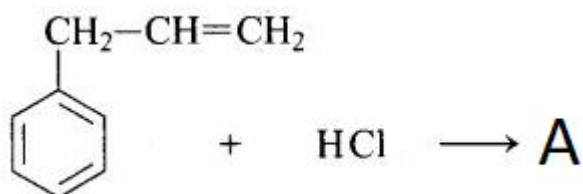
(iv) vinylic halide

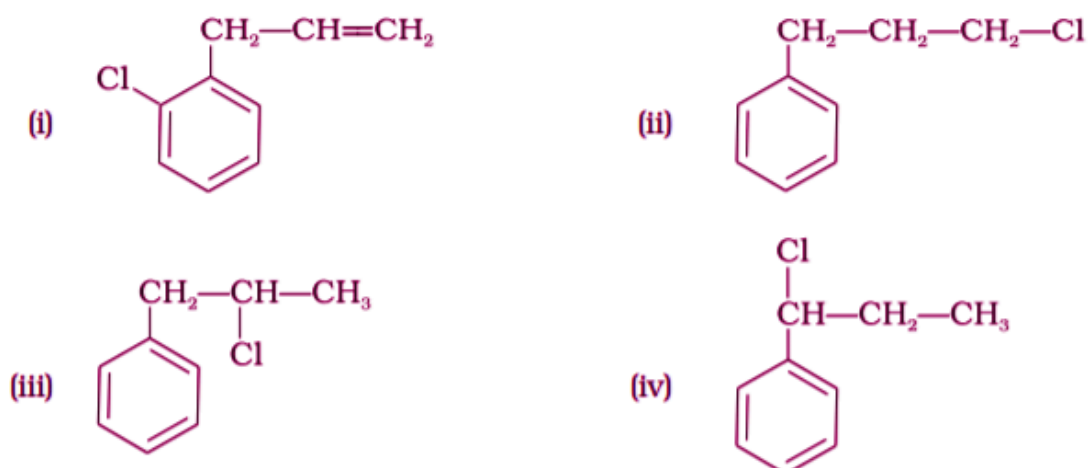
Solution

Option (ii) is the answer.

Question 15

What is 'A' in the following reaction?

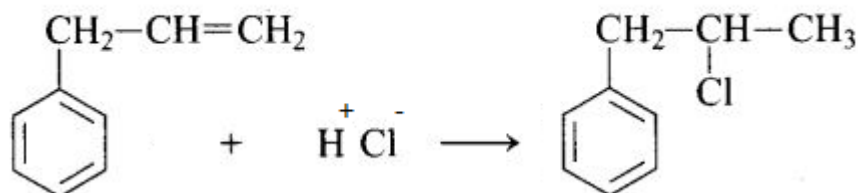




Solution

Option (iii) is the answer.

In the above reaction, the addition of HCl across the double bond takes place as per the Markovnikov rule. According to Markovnikov rule, the negative part of the adding molecule gets attached to that carbon atom which possesses a lesser number of hydrogen atoms.



16. A primary alkyl halide would prefer to undergo _____.

- (i) SN1 reaction
- (ii) SN2 reaction
- (iii) α -Elimination
- (iv) Racemisation

Option (ii) is the answer.

Question 16

A primary alkyl halide would prefer to undergo

A.



reaction

B.



reaction

C.



-Elimination

D.

Racemisation

Answer

Correct option: B

Solution

Ans: The Correct Answer is Option (ii).

When an alkyl halide with α -hydrogen atoms reacts with a base or a nucleophile, depending on the nature of the alkyl halide, the strength of the base or nucleophile, the size of the molecules, and the reaction circumstances, it can undergo a specific kind of reaction. A substitution or elimination process can be followed by an alkyl halide, as well as the two kinds of substitution,



and



. Because the entering nucleophile cannot engage with the bulky substituents on or near the carbon atom, the main alkyl halide prefers the



reaction. As a result, primary alkyl halides and methyl halides have the greatest proclivity for



reactions.

Question 17

Which of the following alkyl halides will undergo S_N1 reaction most readily?

A.



B.



C.



D.



Answer

Correct option: D

Solution

Option (iv) is the answer.

18. Which is the correct IUPAC name for?

(i) 1-Bromo-2-ethylpropane

(ii) 1-Bromo-2-ethyl-2-methylethane

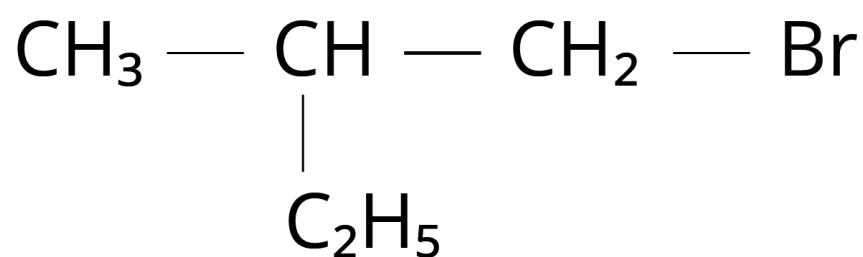
(iii) 1-Bromo-2-methylbutane

(iv) 2-Methyl-1-bromobutane

Option (iii) is the answer.

Question 18

Which is the correct IUPAC name for :



Correct Answer: Option (iii)

A.

1-Bromo-2-ethylpropane

B.

1 -Bromo-2-ethyl-2-methylethane

C.

1 -Bromo-2-methylbutane

D.

2-Methyl-1-bromobutane

Answer

Correct option: C

Solution

Ans: The correct answer is option iii.

First, we must determine which carbon chain is the longest. After that, we should have



as the real structure.



, because the functional halide group is linked to the first carbon atom, we begin numbering there. The methyl group branch is joined to the chain's second carbon atom. Butane is named from the number of carbons in the unbranched parent chain, which is four. 1-Bromo-2-methylbutane is the name of the molecule. Option (iii) is the right answer.

Question 19

What should be the correct IUPAC name for diethylbromomethane?

A.

1-Bromo-1,1-diethylmethane

B.

3-Bromopentane

C.

1-Bromo-1-ethylpropane

D.

1-Bromopentane

Answer

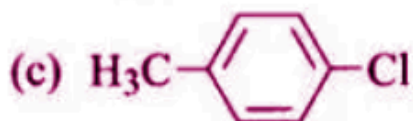
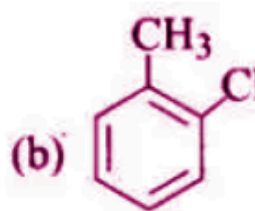
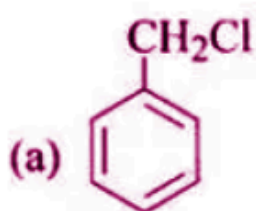
Correct option: B

Solution

Option (ii) is the answer.

Question 20

The reaction of toluene with chlorine in the presence of iron and the absence of light yields _____.



(d) mixture of (b) and (c)

Solution

Option (d) is the answer.

Question 21

Chloromethane on treatment with an excess of ammonia yields mainly

- (i) N, N-Dimethylmethanamine ($\text{CH}_3-\text{N} \begin{array}{l} \text{CH}_3 \\ \text{CH}_3 \end{array}$)
- (ii) N-methylmethanamine ($\text{CH}_3-\text{NH}-\text{CH}_3$)
- (iii) Methanamine (CH_3NH_2)
- (iv) Mixture containing all these in equal proportion

Solution

Option (iii) is the answer.

Question 22

Molecules whose mirror image is non-superimposable over them are known as chiral. Which of the following molecules is chiral?

A.

2-Bromobutane

B.

1-Bromobutane

C.

2-Bromopropane

D.

2-Bromopropan-2-ol

Answer

Correct option: A

Solution

Option (i) is the answer.

Question 23

Reaction of $\text{C}_6\text{H}_5\text{CH}_2\text{Br}$ with aqueous sodium hydroxide follows _____.

(i) $\text{S}_\text{N}1$ mechanism

(ii) $\text{S}_\text{N}2$ mechanism

(iii) Any of the above two depending upon the temperature of the reaction

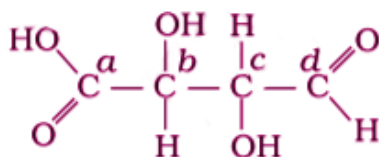
(iv) Saytzeff rule

Solution

Option (i) is the answer.

Question 24

Which of the carbon atoms present in the molecule given below are asymmetric?



A.

a, b, c, d

B.

b, c

C.

a, d

D.

a b, c

Answer

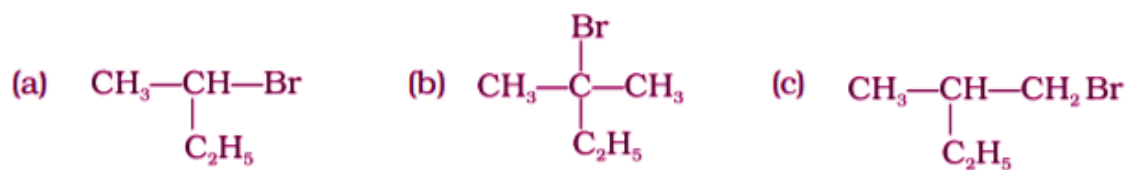
Correct option: B

Solution

Option (ii) is the answer.

Question 25

Which of the following compounds will give racemic mixture on nucleophilic substitution by OH^- ion?



A.

(a)

B.

(a), (b), (c)

C.

(b), (c)

D.

(a), (c)

Answer

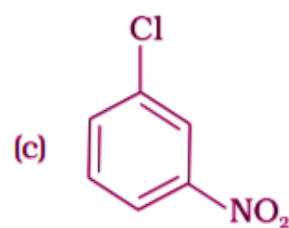
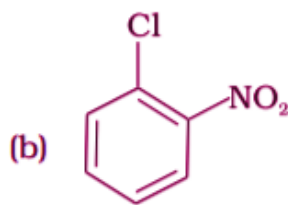
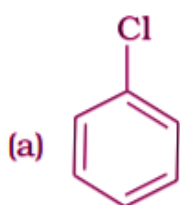
Correct option: A

Solution

Option (i) is the answer.

Note: In the questions, 26 to 29 arrange the compounds in increasing order of the rate of reaction towards nucleophilic substitution.

26.



(i) (a) < (b) < (c)

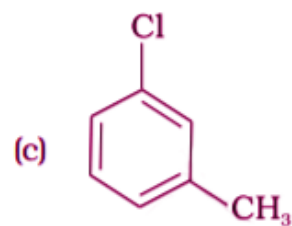
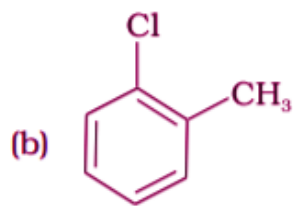
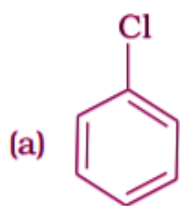
(ii) (c) < (b) < (a)

(iii) (a) < (c) < (b)

(iv) (c) < (a) < (b)

Option (iii) is the answer.

27.



(i) (a) < (b) < (c)

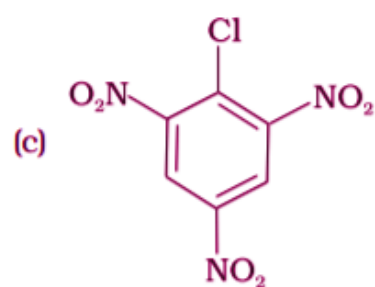
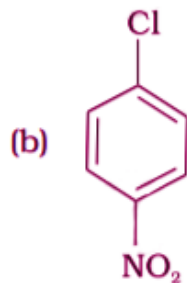
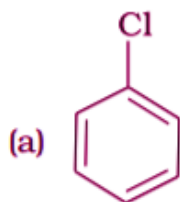
(ii) (a) < (c) < (b)

(iii) (c) < (b) < (a)

(iv) (b) < (c) < (a)

Option (iv) is the answer.

28.



(i) (c) < (b) < (a)

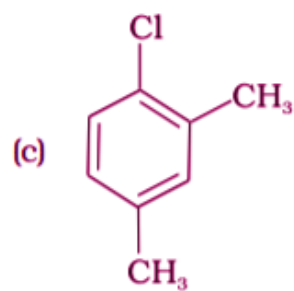
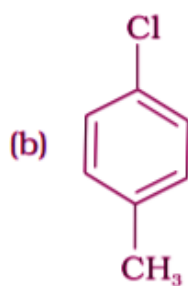
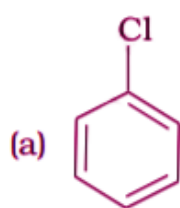
(ii) (b) < (c) < (a)

(iii) (a) < (c) < (b)

(iv) (a) < (b) < (c)

Option (iv) is the answer.

29.



(i) (a) < (b) < (c)

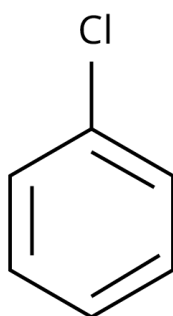
(ii) (b) < (a) < (c)

(iii) (c) < (b) < (a)

(iv) (a) < (c) < (b)

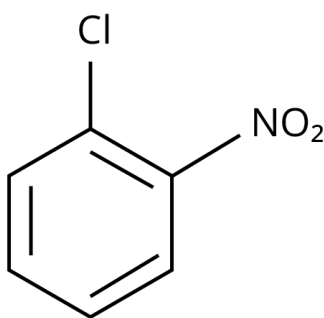
Option (iii) is the answer.

Question 26

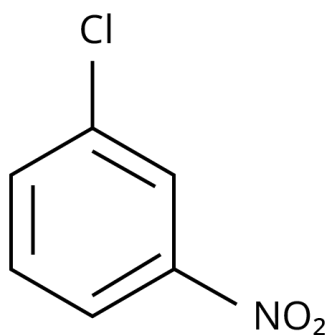


(a)

(b)



(c)



A.

$$(a) < (b) < (c)$$

B.

$$(c) < (b) < (a)$$

C.

$$(a) < (c) < (b)$$

D.

$$(c) < (a) < (b)$$

Answer

Correct option: C

Solution

Ans: The Correct Answer is Option (iii).

Due to the resonance stabilisation of the benzene ring, the reactivity of aryl halides to nucleophilic substitution is exceedingly low. Because of resonance, the



bond gains a partial double bond. The presence of an electron withdrawing



group at ortho or para positions on the ring enhances the reactivity of aryl halides. The presence of

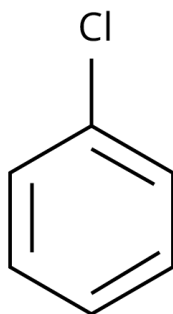


near the



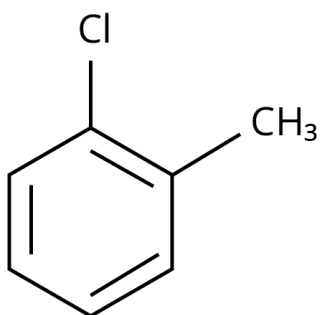
makes the molecule more reactive. The order of reactivity should be (b) > (c) > (a). The right option is (iii).

Question 27

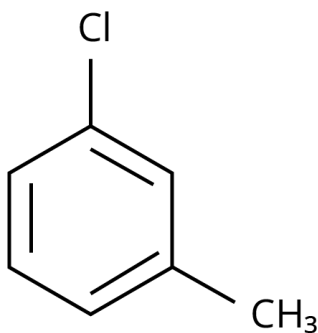


(a)

(b)



(c)



A.

$$(a) < (b) < (c)$$

B.

$$(a) < (c) < (b)$$

C.

$$(c) < (b) < (a)$$

D.

$$(b) < (c) < (a)$$

Answer

Correct option: D

Solution

Ans: The Correct Answer is Option (iv).

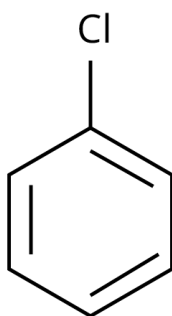
Because the



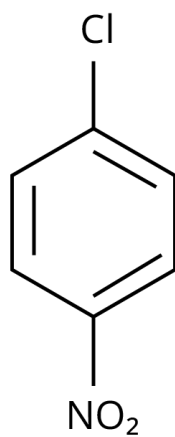
group is an electron releasing group, it reduces the reactivity of aryl halides in the ortho and para locations. As a result, aryl halides without electron releasing groups are more reactive. As a result, the order of reactivity is (a) > (c) > (d) (b). The right answer is (iv).

Question 28

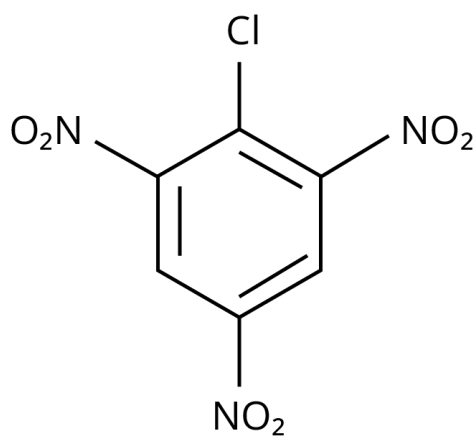
(a)



(b)



(c)



A.

$$(c) < (b) < (a)$$

B.

$$(b) < (c) < (a)$$

C.

$$(a) < (c) < (b)$$

D.

$$(a) < (b) < (c)$$

Answer

Correct option: D

Solution

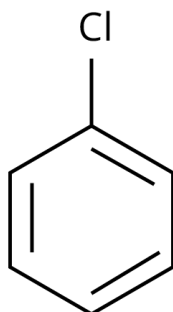
Ans: The Correct Answer is option (iv).

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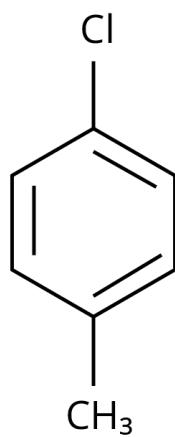
) is an electron-withdrawing group that induces nucleophilic substitution when it is in the ortho and para positions. When this identical electron-drawing group is in the meta position, its impact is much reduced. The reactivity of aryl halides rises as the number of electron-withdrawing groups increases. As a result, the greater the number of electron-drawing groups, the greater the rate of nucleophilic substitution.

Question 29

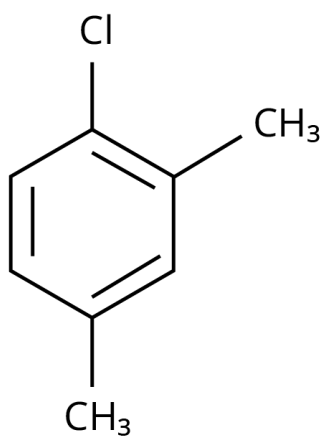


(a)

(b)



(c)



A.

$$(a) < (b) < (c)$$

B.

$$(b) < (a) < (c)$$

C.

$$(c) < (b) < (a)$$

D.

$$(a) < (c) < (b)$$

Answer

Correct option: C

Solution

Ans: The Correct Answer is Option (iii).

The presence of electron releasing groups increases the reactivity of aryl halides; the fewer the electron releasing groups, the slower the rate of nucleophilic substitution. As a result, an increase in methyl groups decreases reactivity. The sequence of reactivity is $(a) > (b) > (c)$. The right answer is (iii).

Question 30

Which is the correct increasing order of boiling points of the following compounds?

1-Iodobutane, 1-Bromobutane, 1-Chlorobutane, Butane

(i) Butane < 1-Chlorobutane < 1-Bromobutane < 1-Iodobutane

(ii) 1-Iodobutane < 1-Bromobutane < 1-Chlorobutane < Butane

(iii) Butane < 1-Iodobutane < 1-Bromobutane < 1-Chlorobutane

(iv) Butane < 1-Chlorobutane < 1-Iodobutane < 1-Bromobutane

Solution:

Option (i) is the answer.

31. Which is the correct increasing order of boiling points of the following compounds?

1-Bromoethane, 1-Bromopropane, 1-Bromobutane, Bromobenzene

(i) Bromobenzene < 1-Bromobutane < 1-Bromopropane < 1-Bromoethane

(ii) Bromobenzene < 1-Bromoethane < 1-Bromopropane < 1-Bromobutane

(iii) 1-Bromopropane < 1-Bromobutane < 1-Bromoethane < Bromobenzene

(iv) 1-Bromoethane < 1-Bromopropane < 1-Bromobutane < Bromobenzene

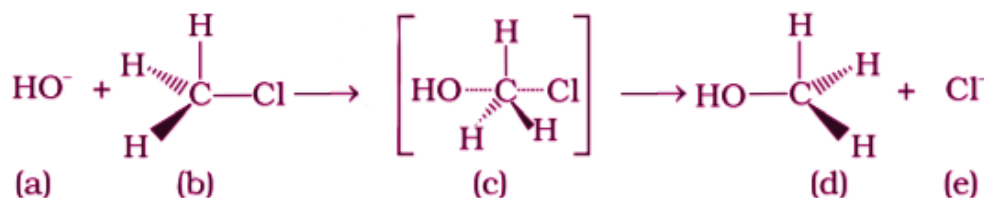
Solution

Option (iv) is the answer

II. Multiple Choice Questions (Type-II)

Note: In the following questions two or more options may be correct.

Consider the following reaction and answer the questions no. 32–34.



Question 31

Which is the correct increasing order of boiling points of the following compounds?

1-Bromoethane, 1-Bromopropane, 1-Bromobutane, Bromobenzene

A.

Bromobenzene < 1 – Bromobutane < 1 – Bromopropane < 1 – Bromoethane

B.



C.



D.



Answer

Correct option: D

Solution

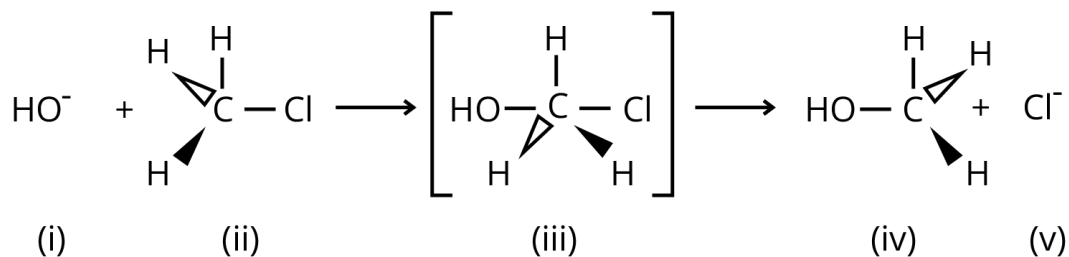
Ans: The Correct Answer is Option (iv).

If the halogen atom in all of the supplied alkyl halides is the same kind, the boiling point of a compound rises as the number of alkyl groups added increases. As the quantity and size of molecules and electrons grow, so do their attractions. As a result, the greater the boiling point, the larger the molecular weight of the alkyl halide. The boiling points of the following compounds are listed in ascending order: 1-Bromoethane 1-Bromopropane 1-Bromobutane Bromobenzene The right answer is (iv).

II Multiple Choice Questions (Type-II)

Note : In the following questions two or more options may be correct.

Consider the following reaction and answer the questions no. 32-34.



Question 32

Which of the statements are correct about the above reaction?

A.

(a) and (e) both are nucleophiles.

B.

In (c) carbon atom is sp^3 hybridised.

C.

In (c) carbon atom is sp^2 hybridised.

D.

(a) and (e) both are electrophiles.

Answer

Correct option: A

Solution

Option (i) and (iii) are the answers.

Question 33

Which of the following statements are correct about this reaction?

A.

The given reaction follows the SN2 mechanism.

B.

(b) and (d) have the opposite configuration.

C.

(b) and (d) have the same configuration.

D.

The given reaction follows the SN1 mechanism.

Answer

Correct option: A

Solution

Option (i) and (ii) are the answers.

Question 34

Which of the following statements are correct about the reaction intermediate?

hybridised.

hybridised.

A.

Intermediate (c) is unstable because in this carbon is attached to 5 atoms.

B.

Intermediate (c) is unstable because carbon atom is sp^2

C.

Intermediate (c) is stable because carbon atom is sp^2

D.

Intermediate (c) is less stable than the reactant (b).

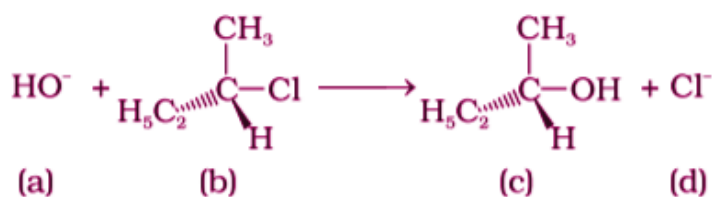
Answer

Correct option: A

Solution

Option (i) and (iv) are the answers.

Answer Q. No. 35 and 36 based on the following reaction.



Question 35

Which of the following statements are correct about the mechanism of this reaction?

A.

A carbocation will be formed as an intermediate in the reaction.

B.

OH^- will attack the substrate (b) from one side and Cl^- will leave it simultaneously from the other side.

C.

An unstable intermediate will be formed in which OH^- and Cl^- will be attached by weak bonds.

D.

The reaction proceeds through an SN1 mechanism.

Answer

Correct option: A

Solution

Option (i) and (iv) are the answers.

Question 36

Which of the following statements are correct about the kinetics of this reaction?

A.

The rate of reaction depends on the concentration of only (b).

B.

The rate of reaction depends on the concentration of both (a) and (b).

C.

Molecularity of reaction is one.

D.

Molecularity of reaction is two.

Answer

Correct option: A

Solution

Option (i) and (iii) are the answers.

Question 37

Haloalkanes contain halogen atom (s) attached to the sp^3 hybridised carbon atom of an alkyl group. Identify haloalkane from the following compounds.

(i) 2-Bromopentane

(ii) Vinyl chloride (chloroethene)

(iii) 2-chloroacetophenone

(iv) Trichloromethane

Solution

Option (i) and (iv) are the answers.

Question 38

Ethylene chloride and ethylidene chloride are isomers. Identify the correct statements.

A.

Both the compounds form the same product on treatment with alcoholic KOH.

B.

Both the compounds form the same product on treatment with aq.NaOH.

C.

Both the compounds form the same product on reduction.

D.

Both the compounds are optically active.

Answer

Correct option: A

Solution

Option (i) and (iii) are the answers.

Question 39

Which of the following compounds are gem-dihalides?

A.

Ethylidene chloride

B.

Ethylene dichloride

C.

Methylene chloride

D.

Benzyl chloride

Answer

Correct option: A

Solution

Option (i) and (iii) are the answers.

Question 40

Which of the following are secondary bromides?

A.

$(\text{CH}_3)_2\text{CHBr}$

B.



C.



D.



Answer

Correct option: A

Solution

Option (i) and (iii) are the answers.

Question 41

Which of the following compounds can be classified as aryl halides?

A.



B.



C.



D.



Answer

Correct option: A

Solution

Option (i) and (iv) are the answers.

Question 42

Alkyl halides are prepared from alcohols by treating with

- (i) $\text{HCl} + \text{ZnCl}_2$
- (ii) Red P + Br_2
- (iii) $\text{H}_2\text{SO}_4 + \text{KI}$
- (iv) All the above

Solution

Option (i) and (ii) are the answers

Question 43

Alkyl fluorides are synthesised by heating an alkyl chloride/bromide in presence of _____ or _____.

- (i) Ca F_2
- (ii) CoF_2
- (iii) Hg_2F_2
- (iv) NaF

Solution

Option (ii) and (iii) are the answers.

III. Short Answer Type

Question 44

Aryl chlorides and bromides can be easily prepared by electrophilic substitution of arenes with chlorine and bromine respectively in the presence of Lewis acid catalysts. But why does the preparation of aryl iodides requires the presence of an oxidising agent?

Solution

Iodination of arenes is reversible due to the formation of HI. To move the reaction forward, an oxidizing agent like HNO_3 or HIO_4 oxidises HI, thus stabilizing the product.

Question 45

Out of o-and p-bromobenzene which one has a higher melting point and why?

Solution

p-bromobenzene has a higher melting point because the symmetry of p-dibromobenzene makes the molecule fit better in a crystal lattice. So that it requires a higher temperature to break the bonds between the molecules and thus has a higher melting point.

Question 46

Which of the compounds will react faster in $\text{S}_{\text{N}}1$ reaction with the OH^- ion?

$\text{CH}_3\text{—CH}_2\text{—Cl}$ or $\text{C}_6\text{H}_5\text{—CH}_2\text{—Cl}$

Solution

$\text{C}_6\text{H}_5\text{—CH}_2\text{—Cl}$ will react faster in an $\text{S}_{\text{N}}1$ reaction with the OH^- ion. This happens due to the stability of the carbocation in the compound. C_6H_5 group is already stable due to resonance, and the CH_2 attached will gain that stability, thus forming a stable $\text{C}_6\text{H}_5\text{CH}_2^+$ carbocation after the cleavage in the first step of the $\text{S}_{\text{N}}1$ reaction.

Question 47

Why iodoform has appreciable antiseptic property?

Solution

Due to the liberation of free iodine iodoform has an appreciable antiseptic property.

Question 48

Haloarenes are less reactive than haloalkanes and haloalkenes. Explain.

Solution

This is because of the resonance stabilization of the aryl ring. If we take an example of $\text{C}_6\text{H}_5\text{-Cl}$, there will be a conjugation of chlorine electrons with the electrons in the ring. This resonance makes C-Cl bond to get partial double bond character and makes less reactive to nucleophilic substitution.

Question 49

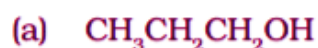
Discuss the role of Lewis acids in the preparation of aryl bromides and chlorides in the dark.

Solution

Aryl bromides and chlorides can be prepared from arenes by electrophilic substitution. This reaction is carried out by treating the arene with chlorine or bromine in the presence of iron (III) chloride in the absence of light. Iron (III) chloride, is a Lewis acid, which generates the electrophile required to take the reaction forward. FeCl_3 forms a coordination compound with Cl_2 , making the complex $\text{Cl}^+[\text{FeCl}_4^-]$.

Question 50

Which of the following compounds (a) and (b) will not react with a mixture of NaBr and H_2SO_4 . Explain why?



Solution

A mixture of NaBr and H_2SO_4 gives Br_2 gas as a product. Molecule (b) will not react with Br_2 gas because of the stable molecule that is formed due to resonance stabilization.

Question 51

Which of the products will be a major product in the reaction given below?

Explain.



(A) (B)

Solution

The molecule (B) will be the major product in the reaction. This addition reaction is carried out by following Markovnikoff's rule, wherein a double bond, the hydrogen from the hydrogen halide is added to the carbon atom with the most hydrogen atoms attached to it,

Question 52

Why is the solubility of haloalkanes in water very low?

Solution

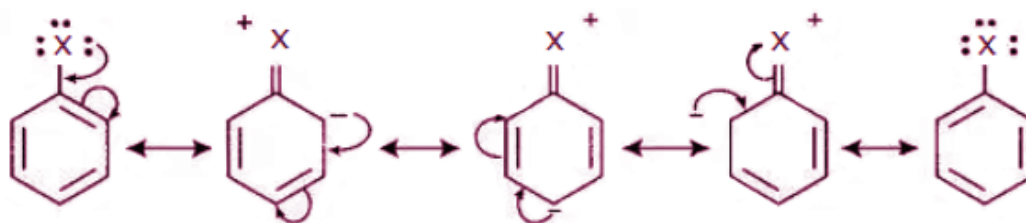
Haloalkanes are very slightly soluble in water because, to dissolve a haloalkane in water, energy is required to overcome the attractions between the haloalkane molecules and also to break the hydrogen bonds between water molecules.

Question 53

Draw other resonance structures related to the following structure and find out whether the functional group present in the molecule is ortho, para directing or meta directing.



Solution



The functional group present in these molecules are ortho-para directing as electron density is more at ortho and para positions.

Question 54

Classify the following compounds as primary, secondary and tertiary halides.

(i) 1-Bromobut-2-ene

(ii) 4-Bromopent-2-ene

(iii) 2-Bromo-2-methylpropane

Solution

(i) 1-Bromobut-2-ene is a primary halide

(ii) In 4-Bromopent-2-ene, the bromine is attached to the secondary carbon atom, hence this a secondary halide.

(iii) In 2-Bromo-2-methylpropane, the bromine is attached to the tertiary carbon atom, making it a tertiary halide.

Question 55

Compound 'A' with molecular formula C₄H₉Br is treated with aq. KOH solution.

The rate of this reaction depends upon the concentration of the compound 'A'

only. When another optically active isomer 'B' of this compound was treated

with aq. KOH solution, the rate of reaction was found to be dependent on

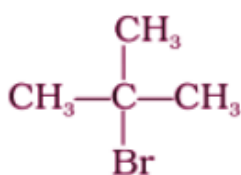
the concentration of compound and KOH both.

(i) Write down the structural formula of both compounds 'A' and 'B'.

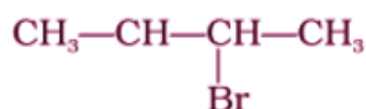
(ii) Out of these two compounds, which one will be converted to the product with an inverted configuration.

Solution

(i) The structure of 'A' is



The structure of 'B' is



(ii) Compound 'B' will undergo inversion of configuration and give an inverted product because it undergoes SN2 reaction.

The Class 12 NCERT Exemplar Problems on Haloalkanes and Haloarenes

Studying the NCERT Class 12 Chemistry Exemplar for Chapter 10 PDF aids you in preparing notes on the chapter. This page has answers to exemplar questions in the textbook, question papers and sample papers. MCQs, short answer questions, match the following and other exercises help you in preparing for the graduate entrance exams, such as NEET, AIPMT, JEE, AIEE, and state entrance exams.

Key concepts to remember

1. Classification – Based on the Number of Halogen Atoms, Compounds Containing sp³ C—X Bond (X= F, Cl, Br, I), Compounds Containing sp² C—X Bond
2. Nomenclature – Structure, Common Name and IUPAC Name
3. Nature of C-X Bond- Carbon-Halogen (C—X) Bond Lengths, Bond Enthalpies and Dipole Moments
4. Methods of Preparation – From Alcohols and Hydrocarbons
5. Physical Properties- Melting Points, Boiling Points, Melting Points and Solubility
6. Chemical Reactions – Nucleophilic Substitution, Elimination Reactions and Reaction with Metals
7. Polyhalogen Compounds

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