ALVA’S PRE UNIVERSITY COLLEGE, MOODBIDRI

Department of Chemistry

NEET/CET Coaching classes-2020-2021

HALOALKANES, HALOARENES,ALCOHOLS,PHENOLS AND ETHERS.-C04

1. C – Cl bond of chlorobenzene in comparision to C – Cl bond of methyl chloride is

1) longer and stronger 2) shorter and stronger

3) longer and weaker 4) shorter and weaker

Ans : 2

2. The yield of chlorobenzene obtained by reaction of phenol with PCl5 is less due the formation of

1) p-chlorophenol 2) o-chlorophenol

3) triphenyl phosphate 4) phosphrousoxychloride

Ans : 3



3. In which of the following molecules p-electron of halogen is delocalized over the entire structure?

1) Picryl chloride 2) Benzyl chloride 3) Allyl chloride 4) Benzal chloride



Ans : 1

1-Chloro – 2, 4, 6 – trinitrobenzene (picryl chloride)

4. Wet ether is not used as a solvent in Wurtz reaction because the water present in it

1) hydrolyses RX to ROH 2) reduces RX to RH

3) destroy the Na metal 4) reacts with R – R

Ans :3

5. Arrange the following in the order of increasing ease of nucleophilic substitution reaction

Chlorobenzene (I), 2, 4, 6 – trinitrochlorobenzene (II), 2, 4 – dinitrochlorobenzene (III) and

4 – nitrochlorobenzene (IV)

1) I < IV < III < II 2) I < III < IV < II 3) II < III < IV < I 4) IV < III < II < I

Ans : 1

Reactivity decreases as the no of NO2 groups at o – and p – position w.r.t. chlorine decreases.

6. Among the following the most reactive towards alcoholic KOH is

1) CH2 = CHBr 2) CH3COCH2CH2Br

3) CH3CH2Br 4) CH3CH2CH2Br

Ans : 4

The polarity between the C – X bond increases by increasing +1 – effect. The + 1 – effect also increases by increasing alkyl group. Therefore in CH3CH2CH2Br the polarity is maximum than CH3CH2Br. While in rest the polarity decreases due to the presence of double bond and CO group.

7. D is

1) CH3Br 2) CH3CONH2 3) CH3NH2 4) CHBr2

Ans : 3



Acetamide methyl amine

8. An organic compound which produces a bluish green coloured flame on heating in the presence of copper is

1) chlorobenzene 2) benzalehyde 3) aniline 4) benzoic acid

Ans : 1

Halogen containing compounds (C6H5Cl) when placed in a flame, the presence of halogen is revealed by a green to blue flame.

9. In the following reaction . The product X is

1) C6H5CH2OCH2C6H5 2) C6H5CH2OH

3) C6H5CH3 4) C6H5CH2CH2C6H5

Ans : 3



10. The compound . The compound C is

1) o-Bromotoluene 2) m-Bromotoluene

3) p-Bromotoluene 4) 3-Bromo-2, 4, 6-trichlorotoluene

Ans : 2



11. In the following sequence of reactions the end product (C) is

1) Acetone 2) Methane 3) Acetaldehyde 4) Ethyl alcohol

Ans : 4

12. The reaction of toluene with Cl2 in presence of FeCl3 gives ‘X’ and reaction in presence of light gives ‘Y’.

Thus, ‘X’ and ‘Y’ are

1) X = Benzal chloride, Y = o – Chlorotoluene

2) X = o – and p-Chlorotoluenes, Y = p – Chlorotoluene

3) X = o – and p – Chlorotoluenes, Y = Trichloromethylbenzene

4) X = Benzyl chloride, Y = m – Chlorotoluene

Ans : 3



13. The major organic compound formed by the reaction of 1, 1, 1 – trichloroethane with silver powder is

1) acetylene 2) ethene 3) 2-butyne 4) 2-butene

Ans : 3



14. The major product of the following reaction is





Ans : 4

15. Which one of the following is likely to give a precipitate with AgNO3 solution?

1) CH2 = CH – Cl 2) CCl4 3) CHCl3 4) (CH3)3CCl

Ans : 4

16.. The alkyl halide formed is

1) CH3Br 2) CH3CH2Br

3) mixture of CH3Br and CH3CH2Br 4) no reaction

Ans : 1



17. Neopentylchloride on reaction with ethanolic KOH is likely to give

1) Neopentyl alcohol 2) Pentylene 3) 2-Methyl-2-butene 4) no reaction

Ans : 3



18. Chloroform with alcoholic KOH gives

1) potassium acetate 2) potassium formate

3) potassium chloride 4) potassium chlorate

Ans : 2



19. A dihaloalkane ‘X’, having formula C3H6Cl2, on hydrolysis gives a compound, that can reduce

Tollen’sreragent.The compound ‘X’ is,

1) 1, 2-dichloropropane 2) 1, 1-dichloropropane

3) 1, 3 – dichloropropane 4) 2, 2 – dichloropropane

Ans : 2

Since, the obtained compound reduces Tollen’s reagent, it must be an aldehyde. Thus, it is obvious that both the Cl atoms are present at Cl. Hence, the compound C is 1, 1 – dichloropropane.



20. Alkyl halides can be prepared by all the following methods except

1)  2) 

3)  4) 

Ans : 3

Cl- ion being a weak nucleophile cannot displace OH- ion which is a stronger nucleophile.

No reaction.

21. What will be the product in the following reaction?





Ans : 3

The mechanism of allylicbromination is



Since endocyclic (within ring) double bond is more stable than exocyclic (outside ring) double bond, therefore, initially formed less stable free radical (I) gets converted into the more stable free radical (II) which then reacts with Br2 to give the product.

22. Neopentyl bromide is treated with CH3CH2ONa / CH3CH2OH, the major product formed in the reaction is

1)  2) 

3)  4) 

Ans : 3

The initially formed less stable 1ᵒ carbocation rearranges to the more stable 3ᵒ carbocation which prefers to undergo elimination.



23. The product in the following reaction is





Ans : 1



Inversion of configuration occurs at the carbon holding Br atom.

24. An unknown alkyl halide (A) reacts with alcoholic KOH to produce a hydrocarbon (C4H8).

Ozonolysis of the hydrocarbon affords one mole of propionaldehyde and one mole of formaldehyde.

Suggest which organic structure among the following is the correct structure of the above alkyl halide (A)?

1) CH3(CH2)3Br 2) CH3CH(Br)CH(Br)CH3

3) CH3CH2CH(Br)CH3 4) Br(CH2)4Br

Ans : 1

Since the ozonolysis products are CH3CH2CHO and CH2O, therefore, the structure of the alkene having M.F. C4H8 is CH3CH2CH = CH2. If the structure of the alkene is 1-butene therefore, the structure of the alkyl bromide giving it on treatment with alcoholic KOH must be 1-bromobutane, i.e.,



25. The halide which will not react with benzene in presence of anhydrous AlCl3 is

1) CH3CHClCH3 2) C6H5CH2Cl 3) C6H5Cl 4) CH3CH2CH2Cl

Ans : 3

Aryl halides being less reactive do not undergo Friedel – Crafts reaction with benzen

26. Identify the major products P, Q and R in the following sequence of reactions:





Ans : 3

Mechanism



27. The compound A on treatment with Na gives B, and with PCl5 gives C. B and C react together to give diethyl ether A, B and C are in the order

1)  2) 

3)  4) 

Ans:3



So the correct option is (3)

28.Arrange the following phenols in order of their increasing acidity



1) I > III > II 2) I > II > III 3) III > I > II 4) III > II > I

Ans : 3

Observe the relative stability of their corresponding conjugate bases



However , the acidity of the corresponding phenols will be different because of H-bonding in the ortho isomer.



29.

in this diol

1) OH at C2 is more basic than that of at C5 2) OH at C2 is more acidic than at C5

3) both behave as a base 4) both behave as an acid

Ans : 1) OH at C2 is more basic than that of at C5

Basic nature of alcohols is in order :

30. Sodiumphenoxide when heated with CO2 under pressure at 1250 yields a product which on acetylation produce C



The major product C would be

1)  2)  3) 4) 

Ans : 1

31. In the reaction sequence, the product C is

1)  2)  3)  4) 

Ans : 3) 



32. Phenol can be distinguish from ethanol by reagents,

1) Bromine water 2) Sodium metal 3)Iron metal 4) Sodiumbicarbonate

Ans.1

33. The ether that undergoes electrophilic substitution reaction is

1)  2)  3)  4) 

Ans : 2

34. The compound that is most difficult to protonated is,

1) Water 2) Methanol 3) Dimethylether 4)Phenol

Ans.4

35.Among the following ethers, which one will produce methyl alcohol on treatment with hot concentrated HI



Ans: (4)



36. Sodium benzene sulphonate reacts with NaOH and then on acid hydrolysis, it gives

1) Phenol 2) Benzoic acid

3) Benzene 4) Disodium benzaldehyde

Ans: (1)



37.Phenol reacts with CCl4 in presence of aqueous alkali and forms a product which on hydrolysis gives

1) Salicylaldehyde 2) Salicylic acid

3) Benzaldehyde 4) Benzoic acid

Ans: (2)



38. The product of following reaction is





Ans: (1)



39. Action of diazomethane on phenol liberates

1) O2 2) H2 3) N2 4) CO2

Ans: (3)



40. Benzoylation of phenol in alkaline medium is known as

1) Friedal Craft reaction 2) Wurtz-fittigreation

3) Schotten-Baumann reaction 4) Sabatier-Senderen’s reaction

Ans: (3)



41.When alkyl halide is heated with dry Ag2O, it produces

1) Ester 2) Ether 3) Ketone 4) Alcohol

Ans: (2) 2RX + Ag2O ROR + 2AgX

42. When diethyl ether is treated with excess of Cl2 in the presence of sunlight, then the product formed is

1) CH3-CHCl-O-CH2-CH3 2) CH3-CHCl-O-CHCl-CH3

3) CCl3-CCl2-O-CCl2-CCl3 4) CH3CCl2-O-CCl2CH3

Ans: (3) Perchlorodiethylether



43. In the following reaction ‘A’ is



1)  2)  3)  4) 

Ans : 2



44.changes to  by

1)  2)  3)  4) 

Ans :1

1) 



44. Following alkene will give same product by any method out of hydration, hydroboration – oxidation

andoxymercuration – demercuration

1)  2) 

3)  4) 

Ans : 2)

is symmetrical and gives same product by any of the given method adopted.

46.Which has maximum pKa value

1)  2) 

3)  4) 

Ans : 4)

pKa = - log Ka

If Ka is high, pKa is low

alcohol is the strongest acid thus has maximum Ka value.

alcohol is the weakest acid and thus has maximum Ka value and maximum pKa value.

47. An organic compound ‘X’ is oxidized by using acidified . The product obtained reacts with

phenyl hydrazine but does not answer silver mirror test. The possible structure of X is

1)  2)  3)  4) 

Ans : 2) 

The oxidation product of X reacts with phenyl hydrazine, thus it contains > C = O group. The same product does not answer silver mirror test, thus it is ketone because only aldehydes give this test. Thus, the compound X must be a 20 alcohol, as only secondary alcohols give ketones on ixidation and hence, X is 

48.The conversion of m-nitrophenol to resorcinol involves respectively

1) hydrolysis, diazotization and reduction

2) diazotization, reduction and hydrolysis

3) hydrolysis, reduction and diazotization

4) reduction, diazotization and hydrolysis

Ans : 4) reduction, diazotization and hydrolysis



49.The compound obtained by heating salicylic acid with phenol in the presence of phosphorous oxychloride is

1) o – chlorobenzoyl chloride 2) Aspirin

3) Oil of wintergreen 4) Salol

Ans : 4) salol



50. In the following sequence of reactions

The compound A is

1) Propane nitrile 2) Ethane nitrile 3) Nitromethane 4) Methyl isocyanate

Ans : 2) Ethane nitrile

