

1. Stereoisomers are

- constitutional isomers
- different compounds with the same connectivity
- conformational isomers
- identical isomers

Ans (b).

2. The isomers of a substance must have

- same chemical properties
- same structural formula
- same molecular weight
- same functional groups

Ans (c)

3 Which compound is not an isomer of the other three?

- n-Pentane
- 2,2-Dimethylpropane
- 2-Methylbutane
- 2,3-Dimethylbutane

Ans (d)

4 A molecule is said to be chiral

- if it contains plane of symmetry
- if it contains center of symmetry
- if it cannot be superimposed on its mirror image
- if it can be superimposed on its mirror image



Ans (c)

5 Plane-polarized light is affected by

- (a) Identical molecules
- (b) All polymers
- (c) Chiral molecules
- (d) All biomolecules

Ans(c)

6 Optical isomers that are mirror images are called

- (a) Tautomers
- (b) Diastereomers
- (c) Enantiomers
- (d) Metamers

Ans(c)

7 Optical isomers that are not mirror images are called

- (a) Diastereomers
- (b) Enantiomers
- (c) Metamers
- (d) Meso compounds

Ans(a)

8 meso-Tartaric acid is

- (a) sometimes optically active
- (b) always optically active
- (c) sometimes optically inactive



(d) always optically inactive

Ans(d)

9 Which of the following compounds will be optically active?

- (a) Propanoic acid
- (b) 3-Chloropropanoic acid
- (c) 2-Chloropropanoic acid
- (d) 3-Chloropropene

Ans(c)

10 Which of the following compounds will be optically active?

- (a) Succinic acid
- (b) meso-Tartaric acid
- (c) Lactic acid
- (d) Chloroacetic acid

Ans(c)

11 Which of the following isomeric compounds show optical isomerism:

- (a) 1-Aminopentane
- (b) 2-Aminopentane
- (c) 3-Aminopentane
- (d) 2,2-Dimethylpropylamine

Ans(b)

12 2-Butanol is optically active because it contains:

- (a) an asymmetric carbon



- (b) a plane of symmetry
- (c) a hydroxyl group
- (d) a center of symmetry

Ans(a)

13 Optical isomerism is shown by

- (a) n-Butyl chloride
- (b) sec-Butyl chloride
- (c) tert-Butyl chloride
- (d) Isobutyl chloride

Ans(b)

14 A tertiary carbon is bonded directly to

- (a) 2 hydrogens
- (b) 3 carbons
- (c) 2 carbons
- (d) 4 carbons

Ans(b)

15 How many isomers are possible for pentane?

- (a) 2
- (b) 3
- (c) 4
- (d) 5

Ans(b)

16 How many isomers are possible for hexane?

- (a) 4
- (b) 5
- (c) 6
- (d) 7

Ans(b)

17 How many isomers are possible for heptane?

- (a) 9
- (b) 10
- (c) 11
- (d) 12

Ans(a)

18 Marsh gas mainly contains

- (a) $CH_2=CH_2$
- (b) CH_4
- (c) H_2S
- (d) $CHCl_3$

Ans(b)

19 The combustion of pentane produces:

- (a) Pentene
- (b) $HCl + H_2O$
- (c) Pentyne
- (d) $CH_2 + H_2O$

Ans(d)



20 The thermal decomposition of alkanes in the absence of air is called:

- (a) Combustion
- (b) Oxidation
- (c) Cracking
- (d) Hydrogenation

Ans(c)

21. LPG (Household cooking gas) is mainly a mixture of

- (a) Methane + Ethane
- (b) Acetylene + O_2
- (c) Butane + Isobutane
- (d) Acetylene + H_2

Ans(c)

22. Octane number is related to

- (a) Gasoline
- (b) Kerosene oil
- (c) Diesel oil
- (d) Lubricating oil

Ans(a)

23 The most typical reaction of simple alkenes is

- (a) Electrophilic substitution
- (b) Nucleophilic substitution
- (c) Electrophilic addition



(d) Nucleophilic addition

ANS(C)

24. Ethylene reacts with HI to give

- (a) Iodoethane
- (b) 2,2-Diiodoethane
- (c) 1,1-Diiodoethane
- (d) None of these

Ans(a)

24 Which of the following compounds will have zero dipole moment

- (a) cis-1,2-dibromoethylene
- (b) 1,1-dibromoethylene
- (c) trans-1,2-dibromoethylene
- (d) all of these

Ans(c)

26 2-Methylpropene reacts with HBr to give

- (a) tert-Butyl bromide
- (b) Isobutane
- (c) n-Butyl bromide
- (d) None of these

Ans(a)

27. 2-Butene reacts with HBr to give

- (a) 1-Bromobutane
- (b) 2,3-Dibromobutane



- (c) 2-Bromobutane
- (d) 2,2-Dibromobutane

Ans(c)

28. What kind of reactions do dienes most commonly undergo?

- (a) nucleophilic addition reactions
- (b) electrophilic addition reactions
- (c) nucleophilic substitution reactions
- (d) electrophilic substitution reactions

Ans(b)

29 1,3-Butadiene reacts with bromine to mainly give

- (a) 3,4-Dibromo-1-butene
- (b) 4-Bromo-1-butene
- (c) 1,4-Dibromo-2-butene
- (d) 1-Bromo-2-butene

Ans(c)

30 A Diels-Alder reaction is a method of making

- (a) cyclohexenes
- (b) cyclobutanes
- (c) cyclohexanes
- (d) hexenes

Ans(a)

31 A triple bond consists of

- (a) 2 sigma bonds and 1 pi bond



- (b) 3 sigma bonds
- (c) 1 sigma bond and 2 pi bonds
- (d) 3 pi bonds

Ans(c)

32 1,2-Dichloroethane reacts with excess of NaNH_2 to form

- (a) Vinyl chloride
- (b) Ethylene
- (c) Ethyl chloride
- (d) Acetylene

Ans(d)

33 Propyne is formed by

- (a) Polymerization of acetylene
- (b) Reaction of acetylene with methane
- (c) Reaction of acetylene with methyl chloride of an alkene.
- (d) Reaction of sodium acetylide with methyl chloride

Ans(d)

34 Indicate the correct relative acidities.

- (a) ethane > ethyne > ethene
- (b) ethyne > ethane > ethene
- (c) ethyne > ethene > ethane
- (d) ethane > ethene > ethyne

Ans(c)

35 Addition of two moles of HCl to propyne gives:



- (a) 2,2-Dichloropropane
- (b) 1,3-Dichloropropane
- (c) 1,2-Dichloropropane
- (d) None of these

Ans(a)

36 When acetylene is passed through hot iron tube at 400°C, it gives

- (a) Benzene
- (b) Toluene
- (c) o-Xylene
- (d) Mesitylene

Ans(a)

37 When propyne is passed through hot iron tube at 400°C, it gives

- (a) Benzene
- (c) m-Xylene
- (b) Toluene
- (d) Mesitylene

Ans(d)

38 The monomer for Neoprene is

- (a) Isoprene
- (b) Acrylonitrile
- (c) Chloroprene
- (d) 1,3-Butadiene

Ans(c)

39 Saytzeff rule states theis formed most readily.

- (a) least substituted alkane
- (b) most substituted alkane
- (c) least substituted alkene
- (d) most substituted alkene

Ans(d)

40 Allylic radicals are stabilized by

- (a) resonance
- (b) interaction with light
- (c) electron-withdrawing atoms
- (d) oxygen atoms

Ans(a)

42 Alkyl halides undergo

- (a) Electrophilic substitution reactions
- (b) Electrophilic addition reaction
- (c) Nucleophilic substitution reactions
- (d) Nucleophilic addition reactions

Ans(c)

43 1-Bromobutane reacts with alcoholic KOH to mainly give

- (a) 1-Butene
- (b) 2-Butene
- (c) 1-Butanol
- (d) 2-Butanol



Ans(b)

43 2-Bromobutane reacts alcoholic KOH to mainly give

- (a) 1-Butene
- (b) 2-Butene
- (c) 1-Butanol
- (d) 2-Butanol

Ans(b)

44 Which alkyl halides react most readily by nucleophilic substitution

- (a) $\text{CH}_3\text{CH}_2\text{Cl}$
- (b) $\text{CH}_3\text{CH}_2\text{I}$
- (c) $\text{CH}_3\text{CH}_2\text{Br}$
- (d) $\text{CH}_3\text{CH}_2\text{F}$

Ans(b)

45 the term $\text{S}_\text{N}2$ stand for .

- (a) An electrophilic addition reaction.
- (b) A nucleophilic reaction.
- (c) A unimolecular substitution reaction.
- (d) A bimolecular nucleophilic substitution reaction.

Ans(d)

46 An $\text{S}_\text{N}2$ reaction is?

- (a) A unimolecular electrophilic substitution reaction.
- (b) A bimolecular electrophilic substitution reaction.
- (c) A unimolecular nucleophilic substitution reaction.



(d) A bimolecular nucleophilic substitution reaction.

Ans(d)

47 The S_N2 reaction is known to occur with

- (a) racemization
- (b) partial inversion
- (c) almost complete inversion
- (d) mutarotation

Ans(c)

49 The number of structural isomers of alcohols with molecular formula C_3H_7OH is

- (a) 5
- (b) 4
- (c) 3
- (d) 2

Ans(d)

50 The number of structural isomers of alcohols with molecular formula C_4H_9OH is

- (a) 5
- (b) 4
- (c) 3
- (d) 6

Ans(4)

51 Which of the following has the highest boiling point?



- (a) diethyl ether
- (b) n-Butyraldehyde
- (c) n-propyl chloride
- (d) n-Butyl alcohol

Ans(d)

52 Methanol is known as

- (a) Rubbing alcohol
- (b) Grain alcohol
- (c) Wood alcohol
- (d) Denatured alcohol

Ans(c)

53 Rectified spirit is

- (a) 100% Ethanol
- (b) 90% Ethanol
- (c) 100% Methanol
- (d) 95% Ethanol

Ans(d)

54 Grain alcohol is another name for

- (a) Methyl alcohol
- (b) Isopropyl alcohol
- (c) Ethyl alcohol
- (d) n-Propyl alcohol

Ans(c)



55 Lucas reagents is

- (a) HCl/NaNO₂
- (b) H₂/P
- (c) HCl/ZnCl₂
- (d) H₂/Pd/BaSO₄

Ans(c)

56 Lucas test is used to determine the type of

- (a) alcohols
- (b) acids
- (c) amines
- (d) carbohydrates

Ans(b)

57 Hydroboration-oxidation of propene gives:

- (a) Isopropyl alcohol
- (b) n-Propyl alcohol
- (c) Isobutyl alcohol
- (d) tert-Butyl alcohol

Ans(b)

58 Hydroboration-oxidation of 2-Methylpropene gives

- (a) 2-Methyl-2-propanol
- (b) 1,2,3-Propanetriol
- (c) 2-Methyl-1-propanol
- (d) 1,2-Propanediol



Ans(c)

Answer. (c)

59 Cannizzaro reaction is not given by

- (a) Formaldehyde
- (b) Trimethyl acetaldehyde
- (c) Acetaldehyde
- (d) Benzaldehyde

Ans(c)

60 When formaldehyde is treated with 50% NaOH solution, it undergoes

- (a) Cannizzaro reaction
- (b) Wurtz reaction
- (c) Aldol condensation
- (d) Hydrolysis

Ans(a)

61 The reduction of a ketone

- (a) always gives a primary alcohol
- (b) always gives a secondary alcohol
- (c) always gives a carboxylic acid
- (d) always gives a ketal

Ans(b)

62 Reduction of acetaldehyde with H_2/Ni gives

- (a) Ethyl alcohol

- (b) Acetic acid
- (C) Ethylene
- (d) Ethane

Ans(a)

63 The complete hydrolysis of a nitrile gives

- (a) an acid
- (b) an ester
- (c) an anhydride
- (d) an acid halide

Ans(a)

64 Which of the following has the highest boiling point?

- (a) Pentane
- (b) 2-Pentanol
- (c) 1-Chloropentane
- (d) Pentanoic acid

Ans(d)

65 Which of the following is the strongest acid?

- (a) Formic acid
- (b) Trichloroacetic acid
- (c) Acetic acid
- (d) Trifluoroacetic acid

Ans(d)

66 Which of the following is the strongest acid?



- (a) Butanoic acid
- (b) 2-Chlorobutanoic acid
- (c) 3-Chlorobutanoic acid
- (d) 4-Chlorobutanoic acid

Ans (b)

67 Which of the following will give acetic acid on acid-hydrolysis?

- (a) Ethyl acetate
- (b) Acetone
- (c) Methyl propionate
- (d) Lactic acid

Ans(a)

68 Propanenitrile undergoes acid-hydrolysis to give

- (a) Formic acid
- (b) Propionic acid
- (c) Acetic acid
- (d) Butyric acid

Ans(b)

69 The characteristic reaction of carboxylic acids is:

- (a) electrophilic addition
- (b) electrophilic substitution
- (c) nucleophilic addition
- (d) nucleophilic substitution

Ans(d)

70 Butyric acid reacts with PCl_5 , to give

- (a) Benzoyl chloride
- (b) 1-Chlorobutane
- (c) Butyryl chloride
- (d) 1-Chloropropane

Ans(c)

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THANKS