

QAD Series

Nomenclature, Isomerism, Alcohol, Phenol, Ether, Aldehyde, Ketones

1. Systematic name of urea is
a) Diaminoketone b) 1-Aminoethanamide
c) 1-Aminomethanamide d) Aminoacetamide
2. The IUPAC name for the compound

 a) Propylene oxide b) 1, 2-Oxopropane
c) 1, 2-Epoxypropane d) 1, 2-Propoxide
3. The correct IUPAC name of the compound

 a) 1, 2-dichloropropanone b) 2-Chloropropanoylchloride
c) 1, 2-dichloropropanal d) Chloroformyl chloroethane
4. One among the following is the correct IUPAC name for the compound

 a) N-Formylaminoethane b) N-Ethylformylamine
c) N-Ethylmethanamide d) Ethylaminomethanal
5. The correct IUPAC name of

 a) Methyl ethanoate b) Acetato ethanoate
c) Ethanoic anhydride d) Ethanoyl ethanoate
6. The IUPAC name of $\text{CH}_3\text{OCH}_2\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ is
a) 1-Ethoxy-3-methoxypropane b) Ethoxy propaneoxymethane
c) 3-Ethoxy-1-methoxypropane d) 2, 5-Dioxyhexane
7. The IUPAC name of

 a) 6-Chloro-4-ethyl-5-methyl hept-5-en-1-yne
b) 6-Chloro-4-ethyl-5-methyl hept-1-yn-5-ene
c) 2-Chloro-4-ethyl-3-methyl hept-2-en-6-yne
d) 2-Chloro-4-ethyl-3-methyl hept-6-yn-2-ene
8. $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}(\text{CH}=\text{CH}_2)\text{CH}_2\text{CH}_2\text{CH}_3$ is
a) 4-Ethenylheptane b) 3-Propylhex-1-ene
c) 4-Ethenylhexane d) 3-Ethenylheptane
9. Number of isomeric forms of $\text{C}_7\text{H}_9\text{N}$ having benzene ring will be
a) 7 b) 6 c) 5 d) 4
10. Which of the following will show metamerism?
a) $\text{CH}_3\text{COC}_2\text{H}_5$ b) $\text{CH}_3-\text{S}-\text{C}_2\text{H}_5$ c) CH_3OCH_3 d) $\text{CH}_3\text{OC}_2\text{H}_5$
11. How many geminal dihalides with different formula are possible for $\text{C}_3\text{H}_6\text{Cl}_2$?
a) Only one b) Two c) Three d) Four
12. The compounds $(\text{CH}_3)_3\text{N}$ & $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$ represent
a) Chain isomerism b) Position isomerism
c) Functional isomerism d) All of the above
13. Which of the following is the correct order of stability of different conformations of butane?
a) HCOOOCOCH_3 b) $\text{CH}_3\text{CH}_2\text{COOCOCH}_3$
c) $\text{CH}_3\text{CH}_2\text{COOCH}_3$ d) 
14. The minimum no. of carbon atoms in an alkene having four primary carbon atoms are
a) 4 b) 8 c) 5 d) 6
15. How many chiral carbons are present in glucose molecule $\text{CHO}(\text{CHOH})_4\text{CH}_2\text{OH}$?
a) 4 b) 3 c) 2 d) 1
16. Which of the following compounds exhibit enantiomerism?
a) 3-Hydroxypropanoic acid b) 3-Hydroxybutanoic acid
c) 4-Hydroxybutanoic acid d) None of these
17. Which of the following has zero dipole moment?
a) cis-2-butene b) trans-2-butene
c) 1-butene d) 2-methyl-1-propene
18. Which of the following compounds will exhibit geometrical isomerism?
a) 1-Phenyl-2-butene b) 3-Phenyl-butene
c) 2-Phenyl-1-butene d) 1, 1-Diphenyl-1-propene
19. The number of tertiary carbon atoms in the compound $(\text{CH}_3)_2\text{CHCH}_2\text{CH}(\text{CH}_3)_2$ is:
a) 2 b) 3 c) 1 d) 4
20. Which of the following groups is always taken as a substituent in the nomenclature?
a) $-\text{NH}_2$ b) $-\text{CN}$ c) $-\text{CHO}$ d) $-\text{NO}_2$
21. The principal functional group of the following compound is

 a) $-\text{OH}$ b) $-\text{Cl}$ c) $-\text{CHO}$ d) $-\text{CO}-$
22. The number of olefinic bonds in the structure

 a) 2 b) 3 c) 1 d) 4
23. The hetero atoms present in the following compounds is/are

 a) 2 b) 3 c) 1 d) 4
24. How many structural formula are possible for $\text{C}_3\text{H}_7\text{Cl}$?
a) 6 b) 8 c) 10 d) 12
25. The enolic form of acetone contains
a) 9σ -bonds, 1π -bond and 2 lone pairs
b) 8σ -bonds, 2π -bonds and 2 lone pairs
c) 10σ -bonds, 1π -bond and 1 lone pair
d) 9σ -bonds, 2π -bonds and 1 lone pair
26. Glucose and fructose are
a) chain isomers b) position isomers
c) functional isomers d) optical isomers
27. The type of isomerism observed in urea molecule is
a) chain b) position c) geometrical d) tautomerism
28. Including cyclic structures, how many structural isomers are possible for the formula C_4H_8 ?
a) 3 b) 5 c) 2 d) 4
29. The compound n-butyl alcohol and isobutyl alcohol are
a) Position isomers b) Chain isomers
c) Metamers d) Tautomers
30. The process of transformation of an optically active isomer into optically inactive isomer is known as
a) racemisation b) resolution c) mutarotation d) optical inversion
31. Which of the following is not an isomer of $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$?
a) $\text{CH}_3\text{CH}(\text{CHO})\text{CH}_3$ b) $(\text{CH}_3\text{CH}_2)_2\text{O}$
c) $\text{CH}_3\text{OCH}_2\text{CH}_2\text{CH}_3$ d) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$
32. The number of chain isomers that can exist for the compound C_6H_{14} are
a) 4 b) 5 c) 6 d) 7
33. The instrument which can be used to measure optical activity i.e., specific rotation is
a) Photometer b) Lactometer c) Polarimeter d) Refractometer
34. Which of the following compound could be optically active?
a) 4-Chloro-1-hydroxybutane b) Tertiary butyl alcohol
c) Secondary butyl amine d) n-Butyl alcohol
35. The optical inactivity of meso-tartaric acid is because of
a) Absence of chirality b) External compensation
c) Internal compensation d) Presence of asymmetrical carbon atoms
36. Racemic mixture is optically inactive due to
a) Presence of plane of symmetry b) External compensation
c) Internal compensation d) None of these
37. The process of separation of racemic modification into d and l enantiomers is called
a) Resolution b) Dehydration
c) Revolution d) Dehydrohalogenation
38. d and l tartaric acids are
a) Diastereomers b) Enantiomers
c) Achiral molecules d) Tautomers
39. If a compound has n asymmetric carbon atoms, then maximum number of optical isomers are given by the formula
a) $\left(\frac{1}{2}\right)^n$ b) 2^n c) $2\sqrt{n}$ d) $\sqrt{2n}$
40. The process of converting d-form to l or vice versa is known as
a) Walden inversion b) Resolution
c) Racemisation d) None
41. Which is the chiral molecule?
a) CH_3Cl b) CH_2Cl_2 c) CHBr_3 d) CHClBrI
42. Optically active isomers but not mirror images are called
a) Enantiomers b) Mesomers c) Tautomers d) Diastereoisomers
43. Which of the following is an aromatic compound?
a) Furan b) Anthracene c) Pyridine d) All are aromatic
44. Which of the following is not a carbocyclic compound?
a) Cyclopentane b) Naphthalene c) Thiophene d) Benzene
45. Which of the following does not contain fused benzene rings?
a) Naphthalene b) Anthracene c) Diphenyl d) Phenanthrene

46. An aromatic molecule will:
a) have $(4n + 2)$ π electrons
b) be planar
c) be cyclic
d) all
47. n-butyl alcohol and secondary butyl alcohol are
a) chain isomers
b) functional isomers
c) position isomers
d) metamers
48. Which of the following compounds will show positive silver mirror test?
a) $\text{CH}_3(\text{CH}_2\text{OH})_3\text{CHO}$
b) $\text{CH}_3\text{COCH}(\text{OH})\text{CH}_3$
c) HCOOH
d) All
49. Catalyst SnCl_2/HCl is used in
a) Stephen's reduction
b) Cannizzaro reaction
c) Clemmensen reaction
d) Rosenmund's reduction
50. In nucleophilic substitution reactions the reactivity of carbonyl compounds follows order
a) $\text{H}_2\text{C}=\text{O} > \text{R}_2\text{C}=\text{O} > \text{Ar}_2\text{C}=\text{O} > \text{RCHO} > \text{ArCHO}$
b) $\text{H}_2\text{C}=\text{O} > \text{RCHO} > \text{ArCHO} > \text{R}_2\text{CO} > \text{Ar}_2\text{C}=\text{O}$
c) $\text{Ar}_2\text{C}=\text{O} > \text{R}_2\text{C}=\text{O} > \text{ArCHO} > \text{RCHO} > \text{H}_2\text{C}=\text{O}$
d) $\text{ArCHO} > \text{Ar}_2\text{C}=\text{O} > \text{RCHO} > \text{R}_2\text{CC} > \text{H}_2\text{C}=\text{O}$
51. Which reaction yields Bakelite?
a) Urea with HCHO
b) Tetramethyl glycol with Hexamethylene diisocyanate
c) Phenol and HCHO
d) Ethylene glycol and Dimethylterephthalate
52. Paraaldehyde is a trimer of
a) Formaldehyde
b) Acetaldehyde
c) Benzaldehyde
d) Propionaldehyde
53. Which one of the following pairs is not correctly matched?
a) $> \text{C}=\text{O} \xrightarrow{\text{Clemmensen's red}^a} > \text{CH}_2$ b) $> \text{C}=\text{O} \xrightarrow{\text{Wolf-Kishner's red}^a} > \text{CHOH}$
c) $-\text{COCl} \xrightarrow{\text{Rosenmund's red}^a} > \text{CHO}$ d) $-\text{C}=\text{N} \xrightarrow{\text{Stephen's red}^a} > \text{CHO}$
54. Which of the following gives aldol condensation reaction?
a) $\text{C}_6\text{H}_5\text{OH}$
b) $\text{C}_6\text{H}_5-\overset{\text{O}}{\parallel}{\text{C}}-\text{C}_6\text{H}_5$
c) $\text{CH}_3\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$
d) $(\text{CH}_3)_2\text{C}=\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$
55. Which of the following compounds gives a ketone with Grignard's reagent?
a) Formaldehyde
b) Ethanenitrile
c) Ethyl alcohol
d) Methyl iodide
56. Which of the following reagents can distinguish between acetaldehyde and benzaldehyde?
a) NH_2OH b) Benedict's solution c) 2, 4 DNP d) Tollen's reagent
57. Which of the following organic compounds answer both iodoform test and Fehling test?
a) Ethanal b) Propanone c) Ethanol d) Methanol
58. A mixture of benzaldehyde and formaldehyde on heating with aq. NaOH solution gives
a) benzyl alcohol and sod. formate
b) sodium benzoate and methyl alcohol
c) sod. benzoate and sod. formate
d) benzyl alcohol and methyl alcohol
59. Rochelle's salt is
a) Sod. potassium tartrate
b) Sod. tartrate
c) Pot. tartrate
d) Calcium tartrate
60. Schiff's reagent gives pink colour with
a) Alcohol
b) Acetaldehyde
c) Acetone
d) Methyl chloride
61. Maximum number of active hydrogens are present in
a) Acetic acid
b) Glycerol
c) Methane
d) Methanol
62. Salol is prepared from
a) Salicylic acid and phenol
b) Salicylic acid & methyl alcohol
c) both
d) none
63. The enzyme which can catalyse the conversion of glucose to ethanol is
a) Zymase
b) Invertase
c) Maltase
d) Diastase
64. Hydrolytic conversion of sucrose into glucose and fructose is known as
a) Induction
b) Inversion
c) Insertion
d) Inhibition
65. Rectified spirit is a mixture of
a) 95% ethyl alcohol + 5% water
b) 94% ethyl alcohol + 4.53% water
c) 94.4% ethyl alcohol + 5.43% water
d) 95.87% ethyl alcohol + 4.13% water
66. Which of the following can work as a dehydrating agent for alcohols?
a) H_2SO_4
b) Al_2O_3
c) P_2O_5
d) all
67. In reaction of alcohols with alkali metal, which of the following alcohol will react fastest?
a) Secondary
b) Tertiary
c) Primary
d) All equal
68. Zinc powder + Ph - OH \rightarrow X. In the above reaction the product X will be
a) Benzaldehyde
b) Benzene
c) Anisole
d) Phenyl acetate
69. Which of the following compound is known as oil of winter green?
a) Phenyl benzoate
b) Phenyl salicylate
- c) Phenyl acetate
d) Methyl salicylate
70. A fruity smell is obtained by the reaction of ethanol with
a) PCl_5
b) CH_3COCH_3
c) CH_3COOH
d) None
71. Na reacts with phenol to produce
a) H_2 gas
b) Benzene
c) CO_2 gas
d) CO gas
72. Order of esterification of alcohol is
a) $\text{T} > \text{S} > \text{P}$
b) $\text{S} > \text{T} > \text{P}$
c) $\text{P} > \text{S} > \text{T}$
d) None
73. Which of the following orders of acid strength is correct?
a) $\text{RCOOH} > \text{ROH} > \text{HOH} > \text{HC}=\text{CH}$
b) $\text{RCOOH} > \text{HOH} > \text{ROH} > \text{HC}=\text{CH}$
c) $\text{RCOOH} > \text{HOH} > \text{HC}=\text{CH} > \text{ROH}$
d) $\text{RCOOH} > \text{HC}=\text{CH} > \text{HOH} > \text{ROH}$
74. The most suitable reagent for the conversion of $\text{RCH}_2\text{OH} \rightarrow \text{RCHO}$ is
a) KMnO_4
b) $\text{K}_2\text{Cr}_2\text{O}_7$
c) CrO_3
d) PCC
75. Carboic acid is
a) $\text{C}_6\text{H}_5\text{CHO}$
b) C_6H_6
c) $\text{C}_6\text{H}_5\text{COOH}$
d) $\text{C}_6\text{H}_5\text{OH}$
76. On boiling with concentrated HBr phenyl ethyl ether will give
a) Phenol and ethyl bromide
b) Bromobenzene and ethanol
c) Phenol and ethane
d) Bromobenzene and ethane
77. Grignard reagent is not prepared in aqueous medium but it is prepared in ether medium because
a) the reagent forms complex with water
b) the reagent becomes inactive in water
c) it is insoluble in water
d) the reagent is highly reactive in water
78. The $\text{C}-\text{O}-\text{C}$ angle in ether is about
a) 180°
b) $109^\circ - 28'$
c) 110°
d) 105°
79. Which of the following alcohols cannot be produced by treatment of aldehydes or ketones with NaBH_4 or LiAlH_4 ?
a. 1-Propanol b. 2-Propanol c. 2-Methyl-2-propanol d. Ethanol
80. Which of the following does not give brick red ppt. with Fehling solution?
a. Formalin b. Acetaldehyde c. D-glucose d. Acetone
81. Schiff's reagent is
a. Alkaline phenolphthalein
b. Methyl red
c. Rosaniline hydrochloride
d. Red litmus
82. The reaction of acetaldehyde with HCN following by hydrolysis gives a product which exhibits
a. Metamerism
b. Tautomerism
c. Enantiomerism
d. Geometrical isomerism
83. Which of the following statement about benzaldehyde is not true?
a. Reduces Tollen's reagent
b. Undergoes Aldol condensation
c. Undergoes Cannizzaro's reaction
d. Forms an addition compound with sodium hydrogen sulphite
84. Which of the following reactants in presence of AlCl_3 give acetophenone?
a. Benzene and Acetone
b. Phenol and Acetone
c. Phenol and AcOH
d. Benzene and AcCl
85. A typical compound undergoes Cannizzaro's reaction as well as aldol condensation. The possible compound is
a. $(\text{CH}_3)_2\text{CHCHO}$ b. $\text{CH}_3\text{CH}_2\text{CHO}$ c. $\text{C}_6\text{H}_5\text{CHO}$ d. HCHO
86. Which of the following compounds does not react with NaHSO_3 ?
a. $\text{C}_6\text{H}_5\text{CHO}$ b. Acetophenone c. Acetone d. Acetaldehyde
87. Reductive ozonolysis of benzene produces
a. Acetone b. Maleic anhydride c. Phthalic acid d. Glyoxal
88. In which reaction, aromatic aldehyde is treated with acid anhydride in the presence of corresponding salt of the acid to give unsaturated aromatic acid?
a. Friedel-Crafts reaction
b. Perkin's reaction
c. Wurtz reaction
d. None of these
89. Which of the following reagents react differently with HCHO , CH_3CHO and CH_3COCH_3 ?
a. HCN
b. NH_2NH_2
c. NH_2OH
d. NH_3
90. Propanal on treatment with dilute sodium hydroxide forms
a. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CHO}$ b. $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CHO}$
c. $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}(\text{CH}_3)\text{CHO}$ d. $\text{CH}_3\text{CH}_2\text{COONa}$
91. Which of the following reagents is used to distinguish acetone and acetophenone?
a. NaHSO_3 b. Grignard reagent c. Na_2SO_4 d. NH_4Cl
92. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid?
a. Phenol
b. Benzoic acid
c. Butanal
d. Benzaldehyde
93. Aniline reacts with which of these to form Schiff base?
a. Acetic acid
b. Benzaldehyde
c. Acetone
d. NH_3
94. When vapours of acetic acid are passed over 573°K we get acetone:
a) Al_2O_3
b) CuO
c) MnO
d) Cu
95. Ethylidene chloride on hydrolysis with NaOH gives:
a) $\text{CH}_3\text{CH}(\text{OH})_2$ b) CH_3CHO c) $\begin{matrix} \text{CH}_3 \\ \diagup \\ \text{C} \\ \diagdown \\ \text{CH}_3 \end{matrix} \text{CO}$ d) $\text{C}_2\text{H}_5\text{OH}$
96. Which of the following is a gas?
a) HCHO
b) $\text{C}_2\text{H}_5\text{CHO}$
c) CH_3COCH_3
d) CH_3CHO