

QAD Series

General Organic Chemistry (GOC)

- The compounds in which carbon uses only its sp^3 hybrid orbitals for bond formation is:
 - HCOOH
 - $(CH_3)_3COH$
 - $NH_2 - CONH_2$
 - $(CH_3)_3C - CHO$
- The bond energy (in Kcal/mol) of a C - C single bond is approximately:
 - 1000
 - 100
 - 10
 - 1
- Resonance structure of molecules do not have:
 - identical arrangement of atoms
 - nearly the same energy content
 - the same no. of paired electrons
 - identical bonding
- Which of the following compounds shows evidence of the strongest hydrogen bonding?
 - Propan-1, 2, 3-triol
 - Propan-1, 2-diol
 - Propan-1-ol
 - Propan-2-ol
- Resonance energy of benzene is about (Kcal/mol):
 - 35
 - 58
 - 100
 - 109
- Which of the following have higher dipole moment?
 - Chlorobenzene
 - m-dichloro benzene
 - o-dichlorobenzene
 - p-dichloro benzene
- The C-H bond distance is longest in
 - C_2H_2
 - C_2H_4
 - C_2H_6
 - $C_2H_2Br_2$
- The enolic form of Acetone contains:
 - $9\sigma, 1\pi$ and 2 lone pairs
 - $8\sigma, 2\pi$ and lone pairs
 - $10\sigma, 1\pi$ and 1 lone pair
 - $9\sigma, 2\pi$ and 1 lone pair
- Napthalene is a volatile solid. It is purified by:
 - Crystallization
 - Distillation
 - Steam distillation
 - Sublimation
- Methanol and acetone can be separated by:
 - Fractional distillation
 - Distillation
 - Steam distillation
 - Vacuum distillation
- Separation of two substances by fractional crystallization depends upon their difference in:
 - densities
 - volatility
 - solubility
 - crystalline shape
- Two immiscible liquids are separated by:
 - separating funnel
 - fractional distillation
 - chromatography
 - sublimation
- Glycerol is purified by:
 - steam distillation
 - vacuum distillation
 - sublimation
 - simple distillation
- Latest technique for purification, isolation and separation of organic compounds is:
 - chromatography
 - steam distillation
 - crystallization
 - vacuum distillation
- Oils are purified by:
 - fractional distillation
 - steam distillation
 - vacuum distillation
 - simple distillation
- A mixture of napthalene and benzoic acid can be separated by:
 - chromatography
 - sublimation
 - fractional crystallization
 - distillation
- Azeotropic mixtures:
 - boil at different temperature
 - are mixtures of solids
 - are constants boiling mixture
 - none
- Mixed melting point is determined to check:
 - purity of organic compounds
 - whether the two compounds are same
 - whether the two compounds are different
 - all
- Lassaigne's Test is used for the detection of:
 - carbon only
 - hydrogen only
 - oxygen only
 - nitrogen, sulphur & halogen
- Carbon and hydrogen are estimated in organic compounds by:
 - Kjeldani's method
 - Dumas method
 - Liebig's method
 - Carius method
- The Prussian blue colour obtained during the test of nitrogen by Lassaigne's test is due to the formation of:
 - $Fe_4[Fe(CN)_6]_3$
 - $Na_3[Fe(CN)_6]$
 - $Fe(CN)_5$
 - $Na_4[Fe(CN)_5NOS]$
- When N & S both are present in an organic compounds the sodium extract with $FeCl_3$ give:
 - green colour
 - blue colour
 - yellow colour
 - red colour
- Copper wire test of halogen is known as:
 - Liebig's test
 - Lassaigne's test
 - Fusion test
 - Beilstein test
- The number of optical isomers of the given compound $CH_3CH(OH)CH(OH)CHO$ is:
 - 0
 - 2
 - 4
 - 6
- Which of the following is not chiral?
 - 2-bromo pentane
 - 2-hydroxy propanoic acid
 - 2-butanol
 - 2, 3-dibromo pentane
- Which of the following groups has highest inductive effect?
 - CH_3
 - CH_3CH_2
 - $(CH_3)_2CH$
 - $(CH_3)_3C$
- Heterolysis of propane gives:
 - Methyl and ethyl free radical
 - Methylion ion and ethyl anion
 - Methyl anion and ethylium ion
 - Methylion and ethylium ion
- Which of the following behaves both as electrophile as well as nucleophile?
 - $CH_2 = CH_2$
 - $CH_2 = CH - \overset{+}{C}H_2$
 - $CH_3 - \overset{||}{C} - CH_3$
 - $CH_3 - \overset{||}{C} - Cl$
- Which of the following species is an ambident nucleophile?
 - $CH_3\overset{\ominus}{C}H_2$
 - $CH_2 = CH_2$
 - $O - NO$
 - $\overset{\ominus}{N}H_2$
- Which of the following is the most stable carbanion?
 - 
 - 
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- The stable free radical among the following is:
 - $CH_3\overset{\ominus}{C}H_2$
 - $CH_3 - \overset{\ominus}{C}H - CH_3$
 - $C_6H_5CH_2 - \overset{\ominus}{C}H_2$
 - $C_6H_5 - \overset{\ominus}{C}H - CH_3$
- In CH_3CH_2OH , the bond that undergoes heterolytic cleavage most readily is:
 - C - C
 - C - O
 - C - H
 - O - H
- The temporary effect in which there is a complete transfer of shared pair of π -electrons to one of the atoms joined by a multiple bond on the demand of the attacking reagent is:
 - Inductive effect
 - Electromeric effect
 - Hyper conjugation
 - Resonance effect
- The number of electrons present in the valence shell of carbon of $CH_3\overset{\oplus}{C}H_2$ ion bearing +ve charge is:
 - 8
 - 7
 - 6
 - 4

35. The reaction between ethylene and bromine is an example of:
 a) electrophilic addition b) electrophilic substitution
 c) nucleophilic addition d) nucleophilic substitution
36. Markonikov's rule is applicable to which of the following reactions?
 a) $C_2H_4 + HBr$ b) $C_3H_6 + Cl_2$
 c) $C_3H_6 + HBr$ d) $C_3H_6 + Br_2$
37. Which of the following is the most reactive towards SN^2 reaction?
 a) $CH_3CH_2CH_2CH_2 - Cl$ b) $CH_3CH_2 - \underset{\substack{| \\ Cl}}{CH} - CH_3$
 c) $(CH_3)_2CHCH_2 - Cl$ d) $(CH_3)_3C - Cl$
38. Which of the following value of pK represents for strongest acids?
 a) 4.5 b) 3.3 c) 2.1 d) 1
39. The kind of delocalisation involving σ bonded orbitals is:
 a) conjugation b) hyper conjugation
 c) hybridisation d) conformation
40. Which of the following has highest nucleophilicity?
 a) F^- b) $\bar{O}H$ c) $\bar{C}H_3$ d) $\bar{N}H_2$
41. Which of the following has the most acidic hydrogen?
 a) 3-hexanone b) 2, 4-hexanedione
 c) 2, 5-hexanedione d) 2, 3-hexanedione
42. Which of the following is the most reactive compounds for electrophilic substitution reaction?
 a) Benzene b) Toluene
 c) Chlorobenzene d) Nitrobenzene
43. Which of the following is the least reactive for NSR?
 a) $(CH_3)_3C - Cl$ b) $CH_2 = CH - Cl$
 c) $CH_3CH_2 - Cl$ d) $CH_2 = CH - CH_2 - Cl$
44. Which of the following is the most reactive for the formation of cyanohydrin?
 a) $CH_3 - \overset{\overset{O}{||}}{C} - H$ b) $CCl_3 - \overset{\overset{O}{||}}{C} - H$
 c) $C_6H_5 - \overset{\overset{O}{||}}{C} - H$ d) $CH_3 - \overset{\overset{O}{||}}{C} - CH_3$
45. Saytzeff's rule is in accordance with:
 a) Hyper conjugation b) Resonance
 c) Inductive effect d) Electromeric effect
46. Chlorination of benzene in presence of sunlight is an example of:
 a) Free radical substitution b) Electrophilic substitution
 c) Electrophilic addition d) Free radical addition
47. Alkenes readily undergoes:
 a) Substitution reaction b) Addition reaction
 c) Elimination reaction d) Rearrangement reaction
48. Soaps can be classified:
 a) Carbohydrates b) Ethers
 c) Salts of fatty acids d) None
49. Which of the following is a monosaccharides?
 a) Sucrose b) Galactose c) Maltose d) Lactose
50. Which gives red colour with Fehling's solution?
 a) Glucose b) Fructose
 c) Benzaldehyde d) Cane-sugar
51. Starch undergoes hydrolysis in presence of mineral acids to:
 a) Glucose b) Fructose
 c) Maltose d) Sucrose
51. A compound gives both ninhydrin test and Molisch's test. It is:
 a) a carbohydrate b) a carboxylic acid
 c) a protein d) an amino acid
52. The pH of the solution in which a polar amino acid does not migrates under the influence of electric field is called:
 a) iso-electric point b) iso-electronic point
 c) neutralization point d) none
53. The number of amino acids which forms protein in nature is:
 a) 6 b) 10 c) 15 d) 20
54. The protein which transport oxygen in blood stream is:
 a) Haemoglobin b) Insulin
 c) Collagen d) Albumin
55. Glucose and mannose are:
 a) Ketohexoses b) Anomers
 c) Epimers d) Disaccharide
56. An example of non-reducing sugar?
 a) Sucrose b) Maltose
 c) Lactose d) Cellobiose
57. At pH = 4, glycine exists as:
 a) $H_3N^+ - CH_2 - COO^-$ b) $H_3N^+ - CH_2 - COOH$
 c) $H_2N - CH_2 - COOH$ d) $H_2N - CH_2 - COO^-$
58. Most sweetest sugar is:
 a) Glucose b) Sucrose
 c) Fructose d) Maltose
59. Which of the following is a natural polymer?
 a) Protein b) Buna-S
 c) Polythene d) Bakellite
60. Which of the following set contains only addition polymers?
 a) Polyethene, poly propylene, terylene
 b) Polyethene, PVC, acilon
 c) Buna-S, nylon, poly butadiene
 d) Bakellite, PVC, polyethylene
61. Aspirin is a/an
 a) antihistamine b) chloroquine
 c) Chloram phenicol d) LSD
62. Reserpine is:
 a) Tranquilizer b) Antibiotic
 c) Vitamin d) hormone
63. Heating of rubber with sulphur is known as:
 a) galvanization b) bessserisation
 c) vulcanization d) sulphonation
64. Dacron is an example of:
 a) Polyamide b) Polypropylene
 c) Polyurethane d) Polyester
65. Dettol consists of:
 a) Cresol + ethanol b) Xylenol + Terpenol
 c) Chloroxylenol + terpenol d) None of the above
66. Which one of the following is a narrow spectrum antibiotic?
 a) Penicillin b) Tetracycline
 c) Chloromycetin d) None
67. Which one is a chain growth polymer?
 a) Teflon b) Nylon-6
 c) Nylon-6, 6 d) Bakellite