



CHEMISTRY POINT

BELGHORIA (Sohan Chakraborty-MOB-9163894874)

TIME-2hr 30min

No of Question- 100

Marks- 100

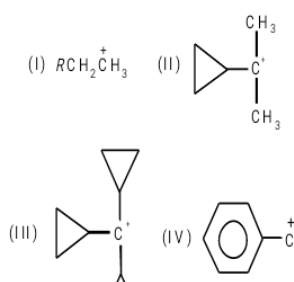
- 3-phenylpropenoic acid is IUPAC name of :
a) Mendaleic acid b) Pyruvic acid c) Succinic acid d) Cinnamic acid
- How many isomers are possible for the compound having molecular formula $C_3H_5Br_3$?
a) 5 b) 4 c) 6 d) 8
- The strain in bonds of cyclopropane is :
a) $0^\circ 44'$ b) $24^\circ 44'$ c) $9^\circ 44'$ d) $5^\circ 16'$
- Chlorine in vinyl chloride is less reactive because :
a) sp^2 -hybridized carbon has more acidic character than sp^3 -hybridized carbon
b) C—Cl bond develops partial double bond character
c) Of resonance
d) All of the above are correct
- The alkene that exhibits geometrical isomerism is
a) Propene b) 2-methyl propene c) 2-butene d) 2-methyl-2-butene
- Pick out the alkane which differs from the other members of the group
a) 2,2-dimethyl propane b) Pentane c) 2-methyl butane d) 2, 2-dimethyl butane
- a) 1-amino prop-2-enal
b) 3-amino prop-2-enal
c) 1-amino-2-formylethene
d) 3-amino-1-oxoprop-2-ene
- Detection of sulphur in sodium extract is done by
a) Lead acetate b) Sodium nitroprusside
c) Both (a) and (b) d) None of these



9. The IUPAC name for

- a) 1,1-dimethyl-1,2-butanediol
- b) 2-methyl-2,4-pentanediol
- c) 4-methyl-2,4-pentanediol
- d) 1,3,3-dimethyl-1,3-propanediol

10. In the following carbocations, the stability order is :



- a) III > II > IV > I
- b) IV > I > II > III
- c) IV > III > II > I
- d) III > IV > II > I

11. The shape of the π electron cloud in acetylene is

- a) Linear
- b) Planar
- c) Cylinder
- d) Doughnut

12. Acidified sodium fusion extract on addition of ferric chloride solution gives blood red colouration which confirm the presence of

- a) S and Cl
- b) N and S
- c) N
- d) S

13. Conversion of chlorobenzene to phenol involves

- a) Electrophilic substitution
- b) Nucleophilic substitution
- c) Free radical substitution
- d) Electrophilic addition

14. In sulphur detection of an organic compound, sodium nitroprusside solution is added to sodium extract. Formation of violet colour is due to

- a) $Na_3Fe(CN)_6$
- b) $Na_3[Fe(CN)_5NOS]$
- c) $Fe(CNS)_3$
- d) None of these

15. The maximum bond energy is present

- a) C-H
- b) C-C
- c) C-N
- d) C-O

16. The number of secondary hydrogen's in 2, 2-dimethyl butane is



- a) 8 b) 6 c) 4 d) 2

17. The name of the compound,

- a) 2-pentanone b) Pentanone-2 c) Pentan-2-one d) All are correct

18. Find the non-staggered form(s) of ethane :

- a)

b)

c)

d) None of these

19. With a change in hybridisation of the carbon bearing the charge, the stability of a carbanion increase in the order

- a) $sp < sp^2 < sp^3$ b) $sp < sp^3 < sp^2$ c) $sp^3 < sp^2 < sp$ d) $sp^2 < sp < sp^3$

21.

- a) Resonating structures
b) Tautomers
c) Geometrical isomers
d) Optical isomers

22. The correct definition for organic chemistry is :

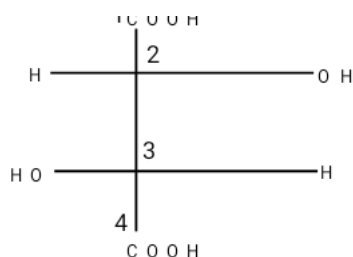
- a) Chemistry of carbon compounds
b) Chemistry of compounds derived from living organisms
c) Chemistry of hydrocarbons and their derivatives
d) None of the above

23. Which of the organic compounds will give red colour in Lassaigne test?



- a) NaCNS b) $\begin{array}{c} \text{S} \\ || \\ \text{NH}_2 - \text{C} - \text{NH}_2 \end{array}$ c) $\begin{array}{c} \text{O} \\ || \\ \text{NH}_2 - \text{C} - \text{NH}_2 \end{array}$ d) None of these
24. The compound formed in the positive test for nitrogen with the Lassaigne solution of an organic compound is
- a) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ b) $\text{Na}_3[\text{Fe}(\text{CN})_6]$ c) $\text{Fe}(\text{CN})_3$ d) $\text{Na}_4[\text{Fe}(\text{CN})_5\text{NOS}]$
- 25.
- a) 1,2,3-trieryanopropane
b) Propane-1,2,3-tricarbonitrile
c) 1,2,3-cyanopropane
d) Propane tricarbylamine
26. Which of the following reactions proceeds via secondary free radical?
- a) $\text{CH}_3 - \text{CH} = \text{CH}_2 \xrightarrow{\text{HBr}} \begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_3 \\ | \\ \text{Br} \end{array}$ b) $\text{CH}_3 - \text{CH} = \text{CH}_2 \xrightarrow[\text{UV light}]{\text{HBr}} \text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{Br}$
- c) $\text{C}_6\text{H}_6 \xrightarrow{\text{Br}_2/\text{FeBr}_3} \text{C}_6\text{H}_5\text{Br}$ d) $\text{C}_6\text{H}_6 \xrightarrow[\text{UV light}]{\text{Br}_2} \text{CH}_3 - \text{CH}_2\text{Br}$
27. The production of an optically active compound from a symmetric molecule without resolution is called :
- a) Walden inversion
b) Asymmetric synthesis
c) Partial racemisation
d) None of these
28. Among the following, which one has more than one kind of hybridization?
- (i) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$
(ii) $\text{CH}_3\text{CH} = \text{CHCH}_3$
(iii) $\text{CH}_2 = \text{CH} - \text{CH} \equiv \text{CH}$
(iv) $\text{CH} \equiv \text{CH}$
- a) (ii) and (iii) b) (ii) and (i) c) (iii) and (iv) d) (iv)
29. The IUPAC name of $\text{C}_6\text{H}_5\text{COCl}$ is
- a) Benzoyl chloride b) Benzene chloro ketone
c) Benzene carbonyl chloride d) Chloro phenyl ketone
30. In the compound,





Configuration at C_2 and C_3 atoms are

- a) S, S b) R, S c) S, R d) R, R

31. The number of isomeric alkenes with molecular formula C_6H_{12} are

- a) 8 b) 10 c) 11 d) 13

32. Which is wrong IUPAC name?

a) $CH_3CH_2CH_2COOCH_2CH_3$ (Ethyl butanoate)

b)

c)

d)

33. Which of the following statements is wrong?

- a) In general organic compounds have low m.p. and b.p.
 b) Isomerism is common in organic compounds
 c) Organic compounds cannot be synthesized in the laboratory
 d) The number of organic compound is very large

34. Nitroethane can exhibit one of the following kind of isomerism

- a) Metamerism b) Optical activity c) Tautomerism d) Position isomerism

35. Which of the following would show configurational enantiomorphism?

a) NH_3

b) $(CH_3)_3N$

c) Methyl, ethyl, propylamine

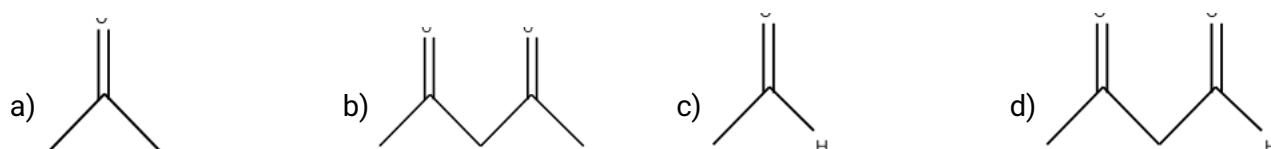
d) Methyl, allyl, phenyl, benzyl ammonium iodide

36. Heterolysis of carbon-chlorine bond produces :



- a) Two free radicals
- b) Two carbonium ions
- c) Two carbanions
- d) One cation and one anion

37. Maximum enol content is in




38. Which of the following compounds will show metamerism?

- a) $\text{CH}_3 - \text{CO} - \text{C}_2\text{H}_5$
- b) $\text{C}_2\text{H}_5 - \text{S} - \text{C}_2\text{H}_5$
- c) $\text{CH}_3 - \text{O} - \text{CH}_3$
- d) $\text{CH}_3 - \text{O} - \text{C}_2\text{H}_5$

39. The IUPAC name of the compound,

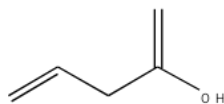
- a) 2-methylpent-1-en-4-yne
- b) 4-methylpent-4-en-1-yne
- c) 2-methylpent-2-en-4-yne
- d) 4-methylpent-1-en-4-yne

40. Which of the following is elimination reaction

- a) 
- b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl} + \text{aq.KOH} \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} + \text{N}(\text{CH}_3)_3$
- c) $\text{CH}_3 - \overset{\text{N}(\text{CH}_3)_3}{\underset{\text{H}}{\text{C}}} - \text{CH}_2\text{CH}_3 \xrightarrow{\text{Alc.KOH}} \text{CH}_3\text{CH}=\text{CHCH}_3$
- d) $\text{CH}_3 - \overset{\text{Br}}{\text{CH}} - \text{CH}_2\text{Br} + \text{Alc.KOH} \xrightarrow{\Delta} \text{CH}_3\text{CH}=\text{CH}_2 + \text{HBr}$



42.



The IUPAC name of _____ is

- a) But-3-enoic acid b) But-1-enoic acid c) Pent-4-enoic acid d) Prop-2-enoic acid

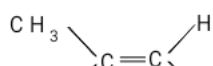
43. On exciting Cl_2 molecules by UV light, we get

- a) Cl^\cdot b) Cl^+ c) Cl^- d) All of these

44. Mixture of sugar and common salt is separated by crystallisation by dissolving in

- a) H_2O b) $\text{C}_2\text{H}_5\text{OH}$ c) C_5O_6 d) None of these

45. The structure,



shows :

- a) Geometrical isomerism
b) Optical isomerism
c) Geometrical and optical isomerism
d) Tautomerism

46. The general formula for cycloalkanes is :

- a) $\text{C}_n\text{H}_{2n+2}$ b) C_nH_{2n} c) $\text{C}_n\text{H}_{2n-2}$ d) C_nH_n

47. The IUPAC name of the compound



a) 2(carboxymethyl)-pentane-1,5-dioic acid

b) 3-carboxyhexane-1, 6-dioic acid

c) Butane-1, 2, 4-tricarboxylic acid

d) 4-carboxyhexane-1, 6-dioic acid

48. $\text{Na}_2\text{S} + \text{Na}_2[\text{Fe}(\text{CN})_5\text{NO}] \rightarrow$ Purple colour. It is due to

- a) $\text{Na}_4[\text{Fe}(\text{CN})_3\text{NOS}]$ b) $\text{Na}_3[\text{Fe}(\text{CN})_5\text{NOS}]$ c) $\text{Na}_4[\text{Fe}(\text{CN})_5\text{NO}]$ d) $\text{Na}_4[\text{Fe}(\text{CN})_5\text{NOS}]$

49. The bond that undergoes heterolytic cleavage most easily is

- a) C-O b) C-C c) C-H d) O-H

50. Increasing order of stability among the three main conformations (*i.e.*, Eclipse, Anti, Gauche) of 2-



fluoroethanol is

- a) Eclipse, Gauche, Anti b) Gauche, Eclipse, Anti c) Eclipse, Anti, Gauche d) Anti, Gauche, Eclipse

51. Phosphorus is estimated as

- a) Na_3PO_4 b) P_2O_5 c) P_2O_3 d) $\text{Mg}_2\text{P}_2\text{O}_7$

52. The number of asymmetric carbon atoms and the number of optical isomers in $\text{CH}_3(\text{CHOH})_2\text{COOH}$ are respectively :

- a) 3 and 4 b) 1 and 3 c) 2 and 4 d) 2 and 3

53. Species containing carbon with three bonds and an electron are called :

- a) Carbenes b) Carbanions c) Carbocation d) Free radicals

54. Which of the aldehyde is most reactive?

- a) $\text{C}_6\text{H}_5\text{-CHO}$ b) CH_3CHO
c) HCHO d) All the equally reactive

55. Which of the following cannot show $\text{S}_{\text{N}}1$ reaction?

- a)  b)  c) d)

56. 3-methyl penta-1,3-diene is :

- a) $\text{CH}_2 = \text{CH}(\text{CH}_2)_2\text{CH}_3$
b) $\text{CH}_2 = \text{CHCH}(\text{CH}_3)\text{CH}_2\text{CH}_3$
c) $\text{CH}_3\text{CH} = \text{C}(\text{CH}_3)\text{CH} = \text{CH}_2$
d) $\text{CH}_3\text{-CH} = \text{CH}(\text{CH}_3)_2$

57. Which of the following compounds is optically active?

- a) 1 – butanol b) Isopropyl alcohol c) Acetaldehyde d) 2-butanol

58. How many optically active forms are possible for a compound of the formula, $\text{CHO}.\text{CHOH}.\text{CHOH}.\text{CHOH}.\text{CH}_2\text{OH}$?

- a) 2 b) 4 c) 3 d) 8

59. "The negative part of the addendum adds on the carbon atom joined to the least number of hydrogen atoms." This statement is called :

- a) Markownikoff's rule
b) Peroxide effect
c) Baeyer's strain theory



- d) Thiele's theory
60. The total number of isomeric carbocations possible for the formula $C_4H_9^+$ is :
- a) 3 b) 4 c) 2 d) 5
61. The correct order for homolytic bond dissociation energies. (ΔH in kcal/mol) for CH_4 (A), C_2H_6 (B) and CH_3Br (C), under identical experimental conditions
- a) $C > B > A$ b) $B > C > A$ c) $C > A > B$ d) $A > B > C$
62. The sodium extract of an organic compound on treatment with $FeSO_4$ solution, $FeCl_3$ and HCl gives a red solution. The organic compound contains
- a) Both nitrogen and sulphur b) Nitrogen only
- c) Sulphur only d) Halogen
63. d-tartaric acid and l-tartaric acid are :
- a) Structural isomers b) Diastereoisomers c) Tautomers d) Enantiomers
64. Which of the following is a pair of functional isomers?
- a) CH_3COCH_3, CH_3CHO b) $C_2H_5CO_2H, CH_3CO_2CH_3$
- c) $C_2H_5CO_2H, CHCO_2C_2H_5$ d) CH_3CO_2H, CH_3CHO
65. Which of the following is an optically active compound?
- a) Lactic acid b) Chloro acetic acid c) Meso-tartaric acid d) Acetic acid
66. Give the correct IUPAC name for
- $$\begin{array}{c} CH_3 \\ | \\ CH_3 \cdot CH_2OCH \cdot CH_2 \cdot CH_2 \cdot CH_2Cl \end{array}$$
- a) 2-ethoxy-5-chloropentane b) l-chloro-4-ethoxy-4-methylbutane
- c) 1-chloro-4-ethoxypentane d) Ethyl-1-chloropentylether
67. The IUPAC name of the compound,
- a) 1,2,3-trihydroxypropane
- b) 3-hydroxypentane-1,5-diol
- c) 1,2,3-hydroxypropane
- d) Propane-1,2,3-triol
68. Bond energywith the increase in number of lone pairs on the bonded atoms.
- a) Decreases b) Increases c) Does not change d) None of these



- a) Resonance b) Hyperconjugation c) Electromeric effect d) Inductive effect

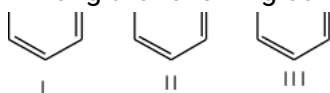
78. Protin solvent is

- a) Diethyl ether b) n-hexane c) Acetone d) Ethanol

79. Addition of Br₂ on trans-butene-2 gives :

- a) A racemic mixture of 2,3-dibromobutane
 b) Meso form of 2,3-dibromobutane
 c) Dextro form of 2,3-dibromobutane
 d) Laevo form of 2,3-dibromobutane

80. Among the following compounds (I-III) the correct order of reaction with electrophilic reagent is

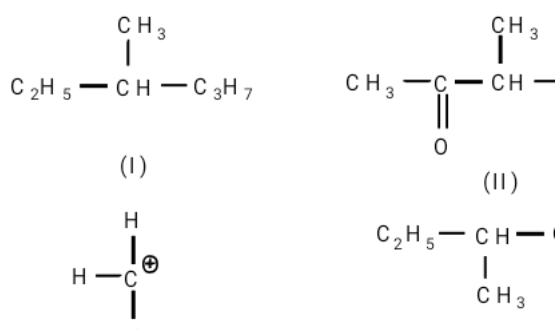


- a) II>III>I b) III<I<II c) I>II>III d) I=II>III

81. During AgNO₃ test for detection of halogens, sodium extract is boiled with few drops of conc. HNO₃ to decompose

- a) NaCN b) Na₂S c) Both (a) and (b) d) None of these

82. Which is true about following?



- a) Only III is a chiral compound
 b) Only II and IV are chiral compounds
 c) All four are chiral compounds
 d) Only I and II are chiral compounds

83. How many chiral compounds are possible on monochlorination of 2-methyl butane?

- a) 2 b) 4 c) 6 d) 8



- a) Nathan and Baker b) Mullikan c) Kekule d) Kolbe
94. Alkyl halide can be converted into alkene by
- Nucleophilic substitution reaction
 - Elimination reaction
 - Both nucleophilic substitution and elimination reaction
 - Rearrangement
95. The order of reactivities of the following alkyl halides for a S_N2 reaction is :
- $RF > RCl > RBr > RI$
 - $RF > RBr > RCl > RI$
 - $RCl > RBr > RF > RI$
 - $RI > RBr > RCl > RF$
96. The optically active alkane with lowest molecular weight is :
- -
 -
 -
97. Which type of isomerism is most common among ethers?
- Metamerism
 - Functional
 - Chain
 - Position
98. With a change in hybridisation of the carbon bearing the charge, the stability of a carbanion increase in the order
- $sp < sp^2 < sp^3$
 - $sp < sp^3 < sp^2$
 - $sp^3 < sp^2 < sp$
 - $sp^2 < sp < sp^3$
99. A molecule is R_3C-H . If H is replaced by Z(R_3C-Z) and on doing so electron density on R_3-C part increases, then Z is :
- Electron attracting group
 - Electron withdrawing group
 - Electron repelling group
 - Either of the above
100. Which of the following compounds are not arranged on order of decreasing reactivity towards electrophilic substitution?
- Fluorobenzene > chlorobenzene > bromo benzene
 - Phenol > n-propyl benzene > benzoic acid >
 - Chlorotoluene > para-nitrotoluene > 2-chloro-4-nitro toluene



d) Benzoic acid > phenol > n-propyl benzene



Edit with WPS Office