Isomerism

Q.1. Which of the following is not a type of structural isomerism?

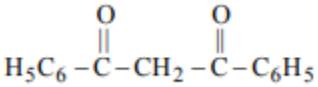
a) geometric isomerism
b) chain isomerism
c) metamerism
d) tautomerism

Q.2. How many optically active stereoisomers are possible for butane-2, 3- diol ?

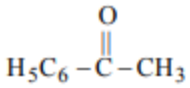
a) 1
b) 2
c) 3
d) 4

Q.3. Keto-enol tautomerism is observed in :

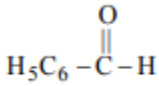
a)



b)

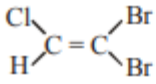


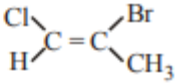
c)

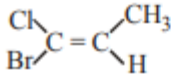


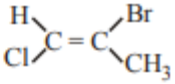
d) Both A and B

Q.4. Which is a pair of geometrical isomers ?

I. 

II. 

III. 

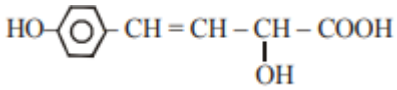
IV. 

a) I and II
b) I and III
c) II,III and IV
d) III and IV

Q.5. Meso- tartaric acid is optically inactive due to the presence of

a) molecular symmetry
b) molecular asymmetry
c) external compensation
d) two asymmetric C atoms

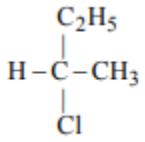
Q.6. The following compound shows



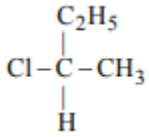
a) geometrical isomerism
b) optical isomerism
c) geometrical and optical isomerism
d) neither geometrical nor optical isomerism

Q.7. $CH_3 - CHCl - CH_2 - CH_3$ has a chiral centre. which one of the following represents its R-configuration?

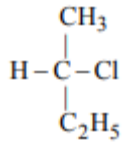
a)



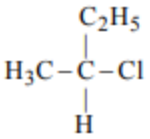
b)



c)



d)



Q.8. Which of the following compounds is not chiral?

a) 1-chloro-2-methyl pentane
b) 2-chloropentane
c) 1-chloropentane
d) 3-chloro-2-methyl pentane

Q.9. . The number of stereoisomers possible for a compound of the molecular formula $CH_3 – CH = CH – CH(OH) – Me$ is:

a) 2
b) 4
c) 6
d) 3

Q.10. Ethoxy ethane and methoxy propane are

a) geometrical isomers
b) optical isomers
c) functional group isomers
d) metamers

Q.11. How many planes of symmetry do meso compounds have?

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

Q.12. A racemic mixture is formed by mixing two

a) Optically Active compounds
b) Chiral compounds
c) Meso Compounds
d) Any compound

Q.13.In which of the following, functional group isomerism is not possible?

a) Alcohols
b) Aldehydes
c) Alkyl halides
d) Cyanides

Q.14.How many cyclic isomers of C_5H_{10} are possible?

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

Q.15.But-2-ene exhibits cis-trans-isomerism due to

a) rotation around $C_3 – C_4$ sigma bond
b) restricted rotation around C = C bond
c) rotation around $C_1 – C_2$ bond
d) rotation around $C_2 – C_3$ double bond

Q.16.The number of geometrical isomers of
CH_3-CH=CH–CH=CH–CH=CHCl is

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

Q.17.Optically active isomers but not mirror images are called

a) enantiomers
b) mesomers
c) tautomers
d) diastereomers

Q.18.Optical activity is measured by

a) Polarimeter
b) Refractometer
c) Spectrograph
d) Tracer technique

Q.19.(+)-Mandelic acid has a specific rotation of + 158º. What would be the observed specific rotation of a mixture of 25% (–)- mandelic acid and 75% (+)-mandelic acid ?

a) + 118.5º
b) –118.5º
c) – 79º
d) + 79º

Q.20.The number of possible enantiomeric pairs that can be produced during monochlorination of 2-methylbutane is

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

Q.21.The most stable conformation of n-butane is

a) skew-boat
b) eclipsed
c) gauche
d) staggered -anti

Q.22.Which of the following has the highest percentage of enol in a Keto-enol equilibrium ?

a) Hexanal
b) 2-hexanone
c) 2, 4-hexanedione
d) 2, 5-hexanedione

Q.23.The stereo isomers formed when cis-2-butene is reacted with Br_2 .

a) meso-2, 3-dibromo butane
b) racemic 2, 3-dibromo butane
c) pair of diastereomers
d) cannot be predicted

Q.24.How many stereoisomeric aldohexoses are there ?

a) 4
b) 8
c) 16
d) 18

Q.25.Ethoxy ethane and methoxy propane are

a) geometrical isomers
b) optical isomers
c) functional group isomers
d) metamers