Questions
Isomerism
group A

1. What is the defination of isomers?
   (a) compounds with same molecular but different Structural formula.
   (b) compounds with different molecular formula but similar Structur.
   (c) compounds with same molecular formula and structure
   (d) None of the above.

2. Which of the following show metamerism
   (a) CH_3COCH_3 (b) $CH_3CH_2COCH_3$ (c) $CH_3CH_2CH_2COCH_3$
   (d) All the three.

3. Functional isomers have same molecular formula but different.
   (a) structure (b) functional group (c) chemical property (d) both (b) and (c)

4. Which of the following can show metamerism
   (a) Ester (b) aldehyde (c) 1° amine (d) Alcohol.

5. Number of structural isomers of C_4H_9Cl is
   (a) 4 (b) 5 (c) 6 (d) 3

6. Which of following is not structural isomerism
   (a) metamerism (b) Tautomerism
   (c) Chain isomerism (d) optical isomerism.

7. Which of the following compound is a functional isomer of C_2H_5OH?
   (a) CH_3CHO (b) CH_3COOH (c) $(C_2H_5)_2O$ (d) $(CH_3)_2O$

8. compound having same molecular but different structural Structural formula are known as
   (a) Isotopes (b) Isomers (c) Isobars (d) polymers

(9) Which compound is not an isomer of the other three?
(a) n-pentane (b) 2-methyl butane
(c) 2,2-dimethyl propane (d) 2,3-dimethyl butane

10. metamerism is shown by
(a) Alkane (b) Aldehyde (c) 1° amine (d) 2° amine

11. Functional isomer of acetone
(a) Acetic acid (b) propionaldehyde
(c) propan-1-ol (d) propan-2-ol

12. But-1-yne and But-2-yne are
(a) chain isomers (b) metamers
(c) Functional isomers (d) position isomers

13. Which of the following does not give Tautomerism?
(a) Acetophenone (b) Acetone
(c) Acetaldehyde (d) Benzaldehyde

14. Which of the following does not show geometrical isomerism.
(a) abccab (b) abccxy (c) abccde (d) aaccbb

15 Optical isomerism is shown by
(a) 1-chlorobutane (b) 2-chlorobutane
(c) 2-chloropropane (d) chloroethane

16. Alkene show
(a) Functional isomerism (b) position isomerism
(c) chain isomerism (d) metamerism.

17 Alcohol and ether represent
(a) chain isomerism (b) position isomerism
(d) Functional isomerism (e) metamerism.

18. The isomers of a substances must have
(a) Same chemical properties (b) same structural formula
(c) same molecular formula (d) Same functional group

(3) (a) (b)

19. Butanoic acid and methyl propanoate are
(a) Chain isomers (b) Functional isomers
(c) position isomers (d) metamers.

20. Metameric form of diethyl ether is
(a) Ethoxy ethane (b) methoxy propane
(c) Butanol (d) None of above.

21. The number of chain isomers than can exist for the compounds C_6H_{14} are
(a) 4 (b) 5 (c) 6 (d) 7

22. The number of possible isomers of $C_4H_{10}O$ is
(a) 7 (b) 6 (c) 4 (d) 5

23. Which of the following are isomers?
(a) Ethanol & dimethyl ether (b) Acetone & acetaldehyde
(c) propanone & propanoic acid (d) methanol & dimethyl ether

24. How many isomeric ethers can be formed from $C_4H_{10}O$?
(a) 2 (b) 3 (c) 4 (d) 5

25. What is an optical isomer?
(a) A molecule that rotates the plane of polarised light
(b) A molecule that absorb certain wavelengths of light
(c) A molecule that reflects light a specific angle
(d) All ~~of~~ above three.

26. Which of the following statement is true for optical isomers?
(a) They have same physical & chemical properties
(b) They have same spatial arrangement
(c) They rotate polarised light in opposite direction
(d) They are found in organic compounds.

(4) (4)

Group B

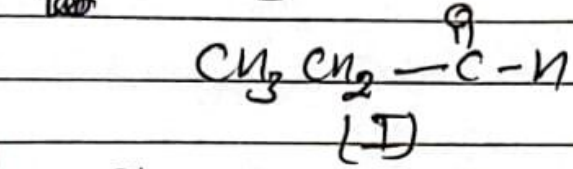
1. Give the isomers and IUPAC name for the followings.
(a) C_2H_6O (b) C_3H_6O (c) C_4H_{10} (d) C_4H_8
(e) C_4H_6 (f) $C_2H_4O_2$ (g) $CH_3-CH_2-CH_2-OH$
(h) C_3H_8O (i) $CH_3-\overset{O}{\overset{\|}{C}}-H$ (k) CH_3-CH_2-COOH
(l) C_5H_{10} (m) $C_4H_{11}N$ (n) C_3H_6 (p) $C_5H_{11}NO_2$
(q) $C_6H_{13}Br$

2. Determine the structural isomers from the following pairs with their types and their IUPAC name.
(a) $CH_3-\overset{OH}{CH}-CH_2-CH_3$ $CH_3-CH_2-\overset{OH}{CH}-CH_3$
(b) $CH_3-\overset{Cl}{CH}-CH_2-CH_3$ $CH_3-\overset{CH_3}{\overset{|}{\underset{CH_3}{|}{C}}}-Cl$
(c) $CH_3-\overset{O}{\overset{\|}{C}}-O-CH_3$ CH_3-CH_2-COOH
(d) $CH_3CH=CHCH_3$ $CH_2=CHCH_2CH_3$

3. Write the different types structural isomerism from molecular formula $C_5H_{11}OH$. mention the type of isomerism involve in the process as well as IUPAC names of each structure.
4. What are geometrical isomers? Give example of cis and trans isomers.
5. What kind of compounds show optical isomerism? Define chiral carbon? Give some example of optical isomers?
6. Define dextrorotatory & laevorotatory compound with suitable examples.

7. Following are the two organic compounds

(a)



(I) (II)

(a) write the IUPAC name of (I) & (II).
(b) What type of Isomerism is shown by (I) & (II)
(c) Do (I) & (II) show Tautomerism?

group C

1. (i) What are IS Isomerism? Give different types of structural Isomerism with example & IUPAC name.

(ii) Give the structural Isomerism of

(a) C_6H_{12} (b) C_6H_5N