1. $CH_3CHOHCH_2CHO$ and $CH_3CH_2CH_2COOH$ constitute a pair of :-

(1) Position isomers (2) Metamers

(3) Optical isomers (4) Functional isomers

2. The minimum number of carbon atoms present in an organic compound to show chain isomerism is

(1) 2 (3) 3 (3) 5 (4) 4

3. $CH_3—NH—C_2H_5$ and $(CH_3)_3N$ show which type of isomerism :-

(1) Position (2) Functional

(3) Chain (4) None

4. $CH_3—\underset{\displaystyle Cl}{\underset{|}{CH}}—CH_2—\underset{\displaystyle H}{\underset{|}{C}}=O$ and

$CH_3—CH_2—CH_2—\underset{\displaystyle O}{\underset{\|}{C}}—Cl$

are constitute a pair of :-

(1) Position isomers

(2) Metamers

(3) Optical isomers

(4) Functional group isomers

5. Which are metamers :-

(1) $CH_3–O–CH_2CH_2CH_3$, $CH_3–CH_2–O–CH_2–CH_3$

(2) $C_2H_5–O–C_2H_5$, $CH_3CH_2CH_2CH_2OH$

(3) $CH_3–O–C_2H_5$, $CH_3–CH_2–O–CH_3$

(4) $CH_3–\underset{\displaystyle O}{\underset{\|}{C}}–CH_3$, $CH_3–CH_2–\underset{\displaystyle O}{\underset{\|}{C}}–H$

6. Which similarity is necessary for isomerism–

(1) Molecular formula

(2) Structure formula

(3) Physical formula

(4) Chemical formula

7. $HC\equiv C–CH_2–\underset{\displaystyle CH_3}{\underset{|}{CH}}–CH_3$ & $CH_3–C\equiv C–\underset{\displaystyle CH_3}{\underset{|}{CH}}–CH_3$ are

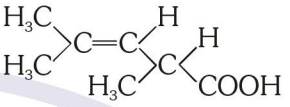
(1) Chain isomer (2) Homologous

(3) Position isomer (4) None

8. How many structural isomer are possible for C_5H_8 having one triple bond ?

(1) 4 (2) 3

(3) 5 (4) 1

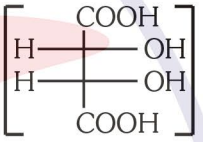
9.  Exhibits :-

(1) Tautomerism

(2) Optical isomerism

(3) Geometrical isomerism

(4) Geometrical and optical isomerism

10. Meso–tartaric acid  is optically inactive due to the presence of :-

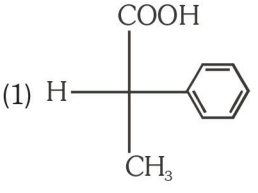
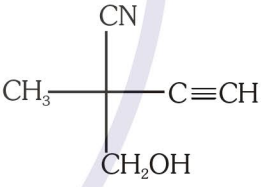
(1) Molecular symmetry

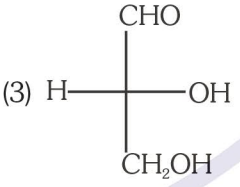
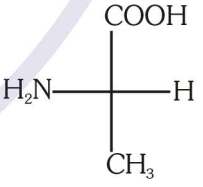
(2) Molecular asymmetry

(3) External compensation

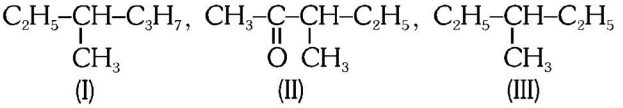
(4) Two asymmetric carbon atoms

11. Identify R configuration :

(1)  (2) 

(3)  (4) 

12. Among the following structure I to III



(I) (II) (III)

It is true that :-

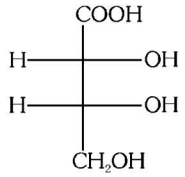
(1) All three are chiral compounds

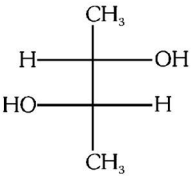
(2) Only I and II are chiral compounds

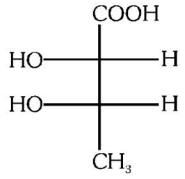
(3) Only II is chiral compound

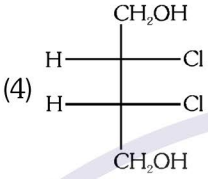
(4) Only I and III are chiral compounds

13. Which one of the following is a meso–compound.

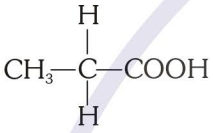
(1) 

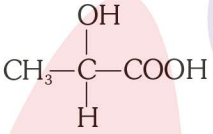
(2) 

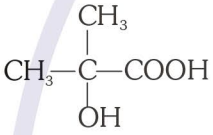
(3) 

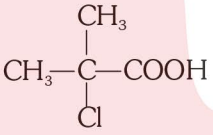
(4) 

14. Which compound is optical active –

(1) 

(2) 

(3) 

(4) 

15. Which conformation of butane will have the minimum energy :-

(1) Gauche
(2) Anti/staggered
(3) Eclipsed
(4) None

16. Which of the following are true statements.

(a) Alkanes have infinite no. of conformation

(b) The rotation is hindered due to repulsive interaction called torsional strain

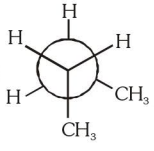
(c) The barrier is about 50 kJ/mole

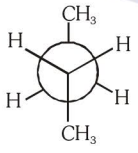
(d) The barrier is about 1-20 kJ/mole

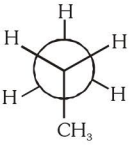
(1) a, b, d (2) a, b, c

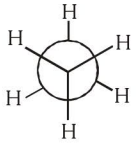
(3) only b (4) only a, d

17. Which of the following has minimum steric strain?

(1) 

(2) 

(3) 

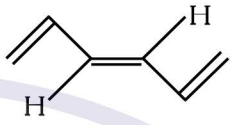
(4) 

18. Which of the following does not contain any asymmetric carbon but can show enantiomerism:-

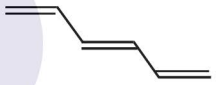
(1) Lactic acid (2) 1,3-pentadiene

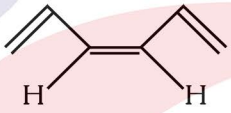
(3) Tartaric acid (4) 2,3-pentadiene

19. Which of the following represents the structure having cis arrangement around each double bond :-

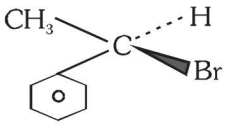
(1) 

(2) 

(3) 

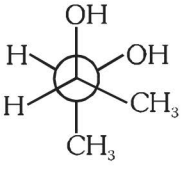
(4) 

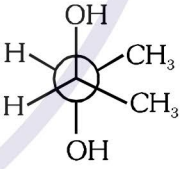
20. The complete IUPAC name of the compound :-

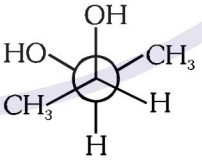


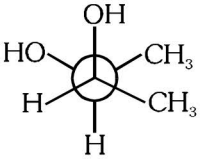
(1) (R)-1-Bromo-1-phenyl ethane
(2) (S)-1-Bromo-1-phenyl ethane
(3) (E)-1-Bromo-1-phenyl ethane
(4) (Z)-1-Bromo-1-phenyl ethane

21. Which one of the following is the most stable conformation of 2, 3–butanediol :–

(1) 

(2) 

(3) 

(4) 

22. How many isomers of $C_5H_{11}OH$ will be primary alcohols (exclude stereoisomers) :–

(1) 2 (2) 3 (3) 4 (4) 6

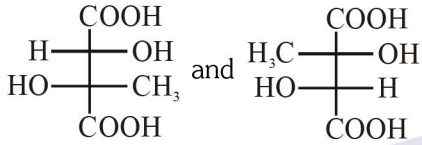
23. The minimum number of carbon atoms in ketone to show metamerism :–

(1) 3 (2) 4 (3) 5 (4) 6

24. The total number of configurational isomers of the given compound are :-

$CH_3–CH=CHCHOHCHOHCH_3$

(1) 2 (2) 4 (3) 6 (4) 8

25.  are :-

(1) Enantiomers (2) Position isomers

(3) Geometrical isomers (4) Homomers

26. Which of the following is not a metamer of $C_4H_{10}O$

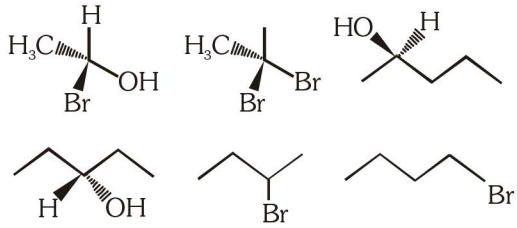
(1) Diethyl ether

(2) Methyl n-propyl ether

(3) 2–Methoxy propane

(4) Isobutyl alcohol

27. How many compounds among the following are chiral ?



(1) 1 (2) 2

(3) 3 (4) 4

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**4**	**4**	**2**	**4**	**1**	**1**	**3**	**2**	**2**	**1**	**3**	**2**	**4**	**2**	**2**
Que.	16	17	18	19	20	21	22	23	24	25	26	27			
Ans.	**1**	**4**	**4**	**2**	**1**	**3**	**3**	**3**	**4**	**4**	**4**	**3**			