NEET : CHAPTER WISE TEST-10

SUBJECT :- CHEMISTRY **DATE.....**

CLASS :- 11th **NAME.....**

CHAPTER :- ISOMERISM **SECTION.....**

(SECTION-A)

1. Which of the following are isomers?
(A) Ethanol and ethoxy ethane
(B) Methanol and methoxy methane
(C) Propanoic acid and ethyl acetate
(D) Propionaldehyde and acetone

2. Which of the following pairs of compounds are not isomers?
(A) Propyne and cyclopropene
(B) Propyne and propadiene
(C) Propene and cyclopropene
(D) 1-Propanol and methoxyethane

3. Which one of the following pairs are called position isomers?
(A) CH_2 (OH) CH_2COOH & CH_3CH (OH) COOH
(B) C_2H_5OH & CH_3OH
(C) $(C_2H_5)_2CO$ & $CH_3COCH_2CH_2CH_2CH_3$
(D) All the above

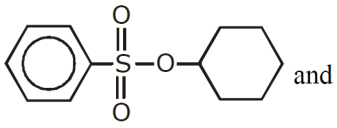
4. Possible number of disubstituted benzene isomers is –
(A) 1 (B) 2 (C) 3 (D) 4

5. The total number of cyclic compounds (neglecting stereoisomers) with the molecular formula C_5H_{10} is -
(A) 4 (B) 5 (C) 6 (D) 7

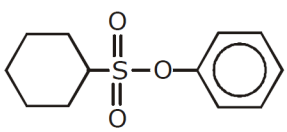
6. The number of ether metamers represented by the formula $C_4H_{10}O$ is -
(A) 4 (B) 3 (C) 2 (D) 1

7. How many primary amines are possible for the formula $C_4H_{11}N$?
(A) 2 (B) 3 (C) 4 (D) 5

8. Given compound show which type of isomerism ?



and



(A) Chain isomerism
(B) Positional isomerism
(C) Metamerism
(D) Functional group isomerism

9. Metamerism is shown by -
(A) Diethyl ether and n-propyl methyl ether
(B) Ethyl alcohol and diethyl ether
(C) Acetone and propionaldehyde
(D) Propionic acid and acetic acid

10. Which of the following compounds will show geometrical isomerism?
(A) 2-Butene (B) Propene
(C) 1-Phenylpropene (D) Both A & C

11. Compounds containing which of the following functional groups can exhibit geometrical isomerism?
(A) > C = C <
(B) > C = N –
(C) –N = N –
(D) All the above three

12. Which of the following will show geometrical isomerism ?
(A) 1-Butene
(B) 1,2-Dibromoethene
(C) Propene
(D) Isobutylene

13. Maleic acid and fumaric acid are -
(A) Position isomers
(B) Functional isomers
(C) Geometrical isomers
(D) optical isomers

14. Which of the following compounds does not have geometrical isomers?
(A) 2-Pentenoic acid
(B) 2-Butenoic acid
(C) 3-Pentenoic acid
(D) 3-Butenoic acid

15. Which of the following compounds has no geometrical isomer?
(A) 1-Phenylpropene
(B) 1, 2-Diphenylethene
(C) 1, 2-Diphenylpropene
(D) 1,1-Diphenylpropene

16. Which of the following show geometrical isomerism?
(A) 1- Pentene
(B) 1,2-Dimethylcyclo butane
(C) 1,1 Dichloroethene
(D) 1,4-Butanedioic acid

17. 2-Butene exhibits geometrical isomerism due to -
(A) Rotation about the double bond
(B) Rotation about C_3–C_4 bond
(C) Restricted rotation about the double bond
(D) Rotation about C_1–C_2 bond

18. The number of geometrical isomers in the following compound,
$CH_3 – CH = CH – CH = CH – C_2H_5$ is -
(A) 4 (B) 3 (C) 2 (D) 5

19. Which of the following statements is not correct ?
(A) Molecules that are superimposable on their mirror images are chiral
(B) Molecules that are not superimposable on their mirror images are chiral
(C) A compound whose molecules are chiral can exist as enantiomers
(D) A compound whose molecules are achiral can not exist as enantiomers

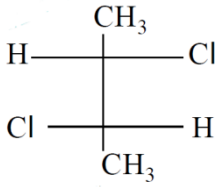
20. An organic compound will show optical isomerism if
(A) Four groups attached to C atom are different
(B) Three groups attached to C atom are different
(C) Two groups attached to C atom are different
(D) All the groups attached to C atom are same

21. The compound having asymmetric carbon atom is
(A) $CH_3CHOHCH_3$
(B) $(CH_3)_2C(C_2H_5)_2$
(C) $C_2H_5CHClCH_3$
(D) $C_2H_5CH(CH_3)CH_2CH_3$

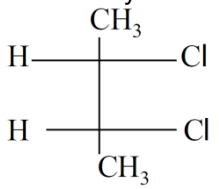
22. The terms stereoisomers, enantiomers and diastereomers will refer
(A) Only to configurational isomers including geometric isomers
(B) Only to conformational isomers
(C) To both configurational as well as conformational isomers
(D) To neither configurational as well as conformational isomers

23. Optically active isomers but not mirror images are called
(A) Enantiomers (B) Mesomers
(C) Tautomers (D) Diastereomers

24. If optical rotation is produced by



is + 36° then that produced by

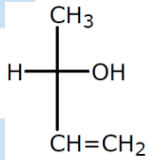


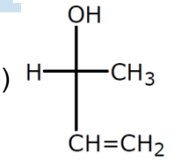
is -

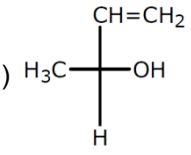
(A) - 36° (B) 0°
(C) + 36° (D) Unpredictable

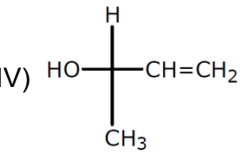
25. The process of separation of racemic modifications into d and l enantiomer is called–
(A) Resolution
(B) Dehydration
(C) Revolution
(D) Dehydrohalogenation

26. Which of the following combinations amongst the four Fischer projections represents the same absolute configurations ?

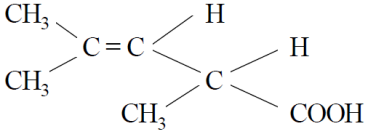
(I) 

(II) 

(III) 

(IV) 

27. The following compound can exhibit –

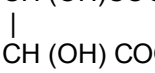


(A) Geometrical isomerism
(B) Geometrical and optical isomerisms
(C) Optical isomerism
(D) Tautomerism

28. Which of the following compounds can exist both as a cis pair of enantiomers and a trans pair of enantiomers?
(A) $CH_3CHClCH = CH_2$
(B) $CH_3CHClCH = CHCH_3$
(C) $CH_2 = CH - CHOHCH = CH_2$
(D) $CH_2 = CH - CHClCH = C(CH_3)_2$

29. Which of the following statements is not correct?
(A) Enantiomers are essentially chiral and optically active
(B) Diastereomers are not necessarily chiral and optically active
(C) All geometrical isomers are diastereomers
(D) All diastereomers are chiral and optically active

30. Number of optically active isomers of tartaric acid is –

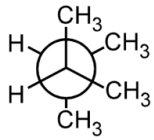
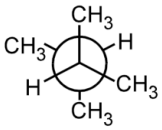
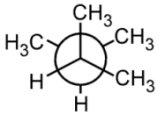
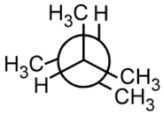


(A) 2 (B) 3 (C) 4 (D) 5

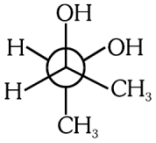
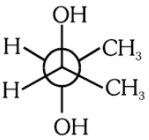
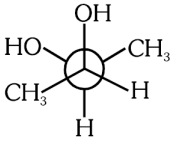
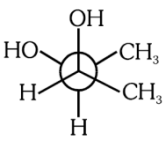
31. How many meso steroisomers are possible for 2, 3, 4-pentanetriol?
(A) 1 (B) 2
(C) 3 (D) None

32. Isomers which can be interconverted through rotation around a single bond are –
(A) Conformers
(B) Diastereomers
(C) Enantiomers
(D) Positional isomers

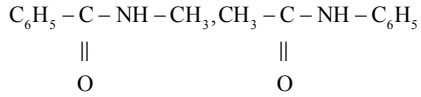
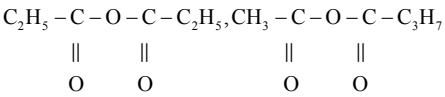
33. The most stable conformation of 2, 3-Dimethylbutane is –

(A) 
(B) 
(C) 
(D) 

34. Which one of the following is the most stable conformation of 2, 3–butanediol?

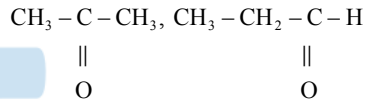
(A) 
(B) 
(C) 
(D) 

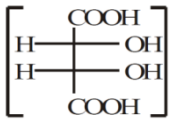
35. The pair of metamers is :-

(A) 
(B) 
(C) Both the above
(D) None of the above

(SECTION-B)

36. The minimum number of carbon atoms in ketone to show metamerism :–
(A) 3 (B) 4 (C) 5 (D) 6

37. Which are metamers ?
(A) $CH_3CH_2–O–CH_2CH_3$, $CH_3–O–CH(CH_3)_2$
(B) $C_2H_5–O–C_2H_5$, $CH_3CH_2CH_2CH_2OH$
(C) $CH_3–O–C_2H5$, $CH_3–CH_2–O–CH_3$
(D) 

38. Meso–tartaric acid  is optically inactive due to the presence of :-
(A) Molecular symmetry
(B) Molecular asymmetry
(C) External compensation
(D) Two asymmetric carbon atoms

39. **Assertion :** Trihydroxyglutaric acid (HCOO– CHOH–CHOH–CHOH–COOH) exists in four stereoisomeric forms, two of which are optically active while the other two are mesoforms.
Reason : It contains two asymmetric and one pseudo–asymmetric carbon atom.
(A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
(B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(C) If Assertion is True but the Reason is False.
(D) If both Assertion & Reasons are false.

40. **Assertion :** All the hydrogen atoms in $CH_2=C=CH_2$ lie in one plane.
Reason : All the carbon atoms in it are sp^{2-} hybridized.
(A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
(B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(C) If Assertion is True but the Reason is False.
(D) If both Assertion & Reasons are false.

41. **Assertion :** The boiling point of cis-1,2-Dichloro ethene is higher than that of corresponding trans isomer.
Reason : cis-1,2-Dichloro ethene has higher dipole moment as compared to that of the trans isomer.
(A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
(B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(C) If Assertion is True but the Reason is False.
(D) If both Assertion & Reasons are false.

42. **Assertion :** $CH_3–CH_2–Br$ and $CH_3–CH_2–I$ are functional isomers.
Reason : The above compounds are homologues.
(A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
(B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(C) If Assertion is True but the Reason is False.
(D) If both Assertion & Reasons are false.

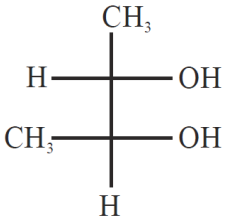
43. **Assertion :** Neopentyl bromide and 2-Bromo-2- methyl butane are enantiomers.
Reason : Both have same molecular formula as well as structural formula.
(A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
(B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(C) If Assertion is True but the Reason is False.
(D) If both Assertion & Reasons are false.

44. Functional isomerism is shown by
(A) o–Nitrophenol and p–Nitrophenol
(B) Dimethyl ether and ethanol
(C) 2–Pentenoic acid and 3–Pentenoic acid
(D) Acetaldehyde and acetone

45. Which of the following ether show metamerism ?
(A) $CH_3-\overset{\overset{O}{\|}}{C}-C_3H_7$ (B) $C_2H_5—O—C_2H_5$
(C) $CH_3—O—CH_3$ (D) $CH_3—O—C_2H_5$

46. Which of the following compounds is not chiral?
(A) $DCH_2CH_2CH_2Cl$
(B) CH_3CH_2CHDCl
(C) CH_3CHDCH_2Cl
(D) $CH_3CHClCH_2D$

47. Correct configuration of the following is :-



(A) 2S, 3S (B) 2S, 3R
(C) 2R, 3S (D) 2R, 3R

48. **Assertion :** diastereoisomers have different physical properties.
Reason : They are non-superimposable mirror images.
(A) Both A and R are correct and the R is the correct explanation of the A
(B) Both A and R are correct but R is not the correct explanation of the A
(C) A is correct but R is incorrect
(D) Both A and R are incorrect

49. Among the following the most stable compound is
(A) cis-1,2-Cyclohexanediol
(B) trans-1,2-Cyclohexanediol
(C) cis-1,3-Cyclohexanediol
(D) trans-1,3-Cyclohexanediol

50. With respect to the conformers of ethane, which of the following statements is true?
(A) Bond angle remains same but bond length changes
(B) Bond angle changes but bond length remains same
(C) Both bond angle and bond length changes
(D) Both bond angles and bond length remains same