



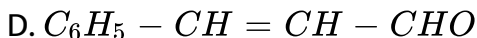
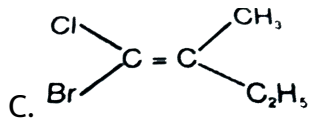
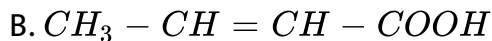
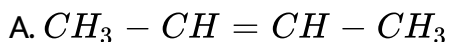
CHEMISTRY

PHYSICAL, INORGANIC, AND ORGANIC CHEMISTRY

STEREOISOMERISM

SOLVED PROBLEM

1. In which compound, Cis-Trans nomenclature cannot be used?

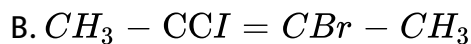


Answer: C



[View Text Solution](#)

2. Which of the following structures will show geometrical isomerism ?

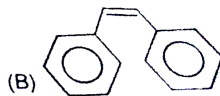
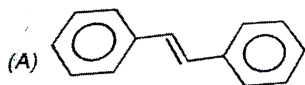


Answer: B::C::D



[View Text Solution](#)

3. Identify E and Z form of stilbene ?



 [View Text Solution](#)

4. Cholesterol, when isolated from natural sources, is obtained as a single enantiomer. The observed rotation α of a 0.3 g sample of cholesterol in 5mL of chloroform solution contained in a 10 cm polarimeter tube is -0.78° . Calculate the specific rotation of cholesterol. A sample of synthetic cholesterol was prepared consisting entirely of (+)-cholesterol. This synthetic (+)-cholesterol was mixed with some natural (-)-cholesterol. The mixture had a specific rotation $[\alpha]_D^{20}$ of -13° . What fraction of the mixture was (+)-cholesterol ?

 [View Text Solution](#)

5. (a) $CH_3 - CH = CH - CH = CH - C_2H_5$ (Molecule with dissimilar ends).

Here $n=2$, So Number of G.I = 4 [(cis, cis), (trans, trans), (cis, trans), (trans, cis)]

(b) $CH_3 - CH = CH - CH = CH - CH_3$ (Molecule with similar ends)

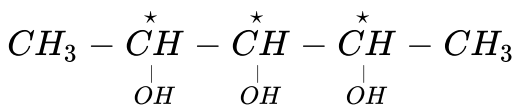
Here $n=2$, So Number of G.I = 3 [(cis, cis), (trans, cis), (cis, trans) = (trans, cis)]

(c) $CH_3 - CH = CH - CH = CH - CH = CH - CH_3$
(Molecule with similar ends)

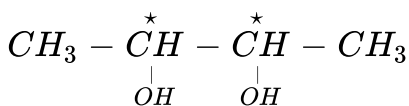
Here $n=3$, So Number of G.I = 6

[(cis, cis, trans) = (trans, cis, cis) (cis, trans, trans) = (trans, trans, cis), (cis, cis, cis) (trans, trans, trans), (cis, trans, cis, (trans, cis, trans)]

(d) Let us draw the total stereoisomers of



(e) Let us draw the total stereoisomers of

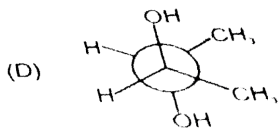
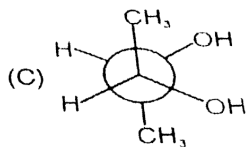
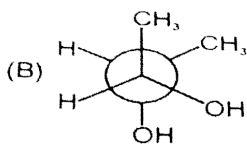
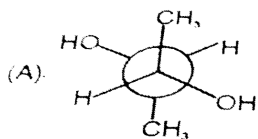


(f) Let us draw the total stereoisomers of



 [View Text Solution](#)

6. Which is the most stable & optically active conformer among the following ?





[View Text Solution](#)

7. In which of the following molecules gauche form is more stable than their anti form?

- A. 2-Aminoethanol
- B. 2-Nitroethanol
- C. 3-Hydroxypropanoic acid
- D. 3-Hydroxypropanal

Answer: A::B::C::D



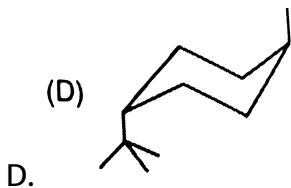
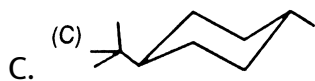
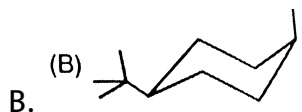
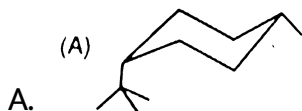
[View Text Solution](#)

8. Draw the most stable conformation of (a) 1,2-dimethylcyclohexane, (b) cyclohexane-1,3-diol



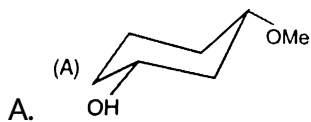
[View Text Solution](#)

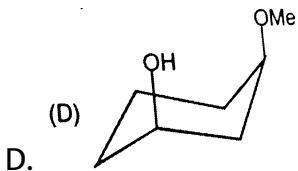
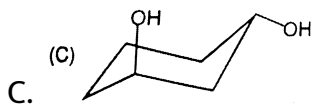
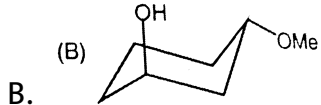
9. Which is the most stable conformer among the given conformers ?



 [View Text Solution](#)

10. Which is not stable conformer among the given conformers?

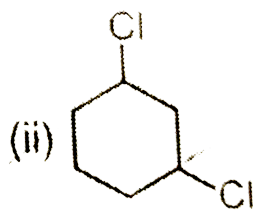
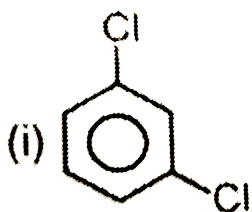




 [View Text Solution](#)

EXERCISE (PART 1 SECTION (A))

1. Which of the following compounds have restricted rotation and out of which can show geometrical isomerism?



(iii)

$\text{ClCH}=\text{CHCl}$ (iv) $\text{Ph-N}=\text{N-Ph}$

(v) $\text{CH}_3\text{CH}=\text{C}(\text{CH}_3)_2$ (vi) $\text{CH}_3\text{CH}=\text{CH}_2$ (vii)

$\text{CH}_3\text{CH}=\text{CHCH}_3$ (viii) $\text{CH}_3-\text{C}\equiv\text{C}-\text{CH}_3$

 [View Text Solution](#)

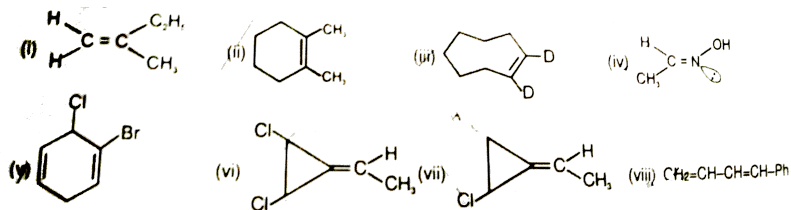
2. Write the essential conditions for geometrical isomerism.

 [View Text Solution](#)

3. Define restricted rotation and give one example each of acyclic and cyclic compound, which can show geometrical isomerism. 1

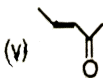
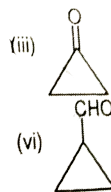
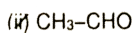
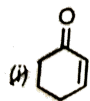
 [View Text Solution](#)

4. Which of the following can show geometrical isomerism.



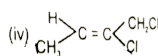
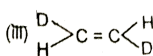
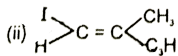
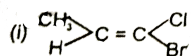
 [View Text Solution](#)

5. Which of the following carbonyl compound will give two products after reaction with NH_2OH :



 [View Text Solution](#)

1. Indicate whether each of the following compound is 'E' or 'Z'.



 [View Text Solution](#)

2. (a) $\text{BrHC}=\text{CHBr}$ exists as two diastereomers draw them and compare their dipole moment.

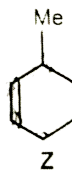
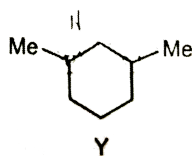
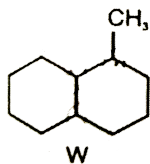
(b) trans-Butenedioic acid has higher melting point than cis-butenedioic acid. Why?

(c) Draw the cis and trans structure of hex-2-ene. Which isomer will have higher b.p. and why?

 [View Text Solution](#)

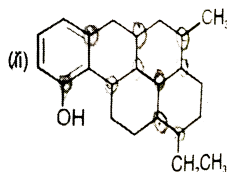
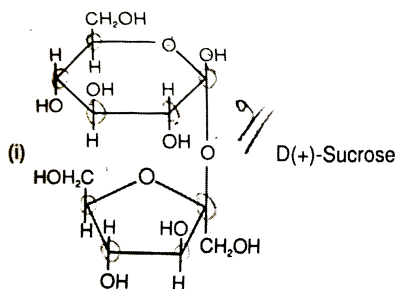
EXERCISE (PART 1 SECTION (C))

1. Number of chiral carbon atoms in the compound W, X, Y and Z respectively would be :



[View Text Solution](#)

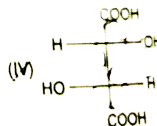
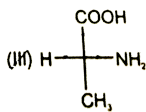
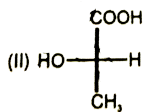
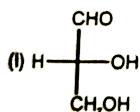
2. How many number of chiral centres present in the following compounds?



[View Text Solution](#)

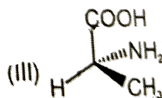
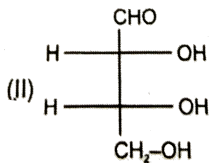
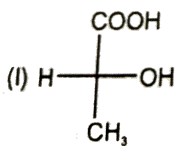
EXERCISE (PART 1 SECTION (D))

1. Find R/S configuration of following compounds.



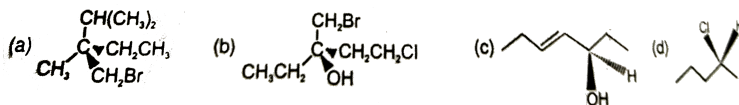
 [View Text Solution](#)

2. Find D/L configuration in the following molecules.



 [View Text Solution](#)

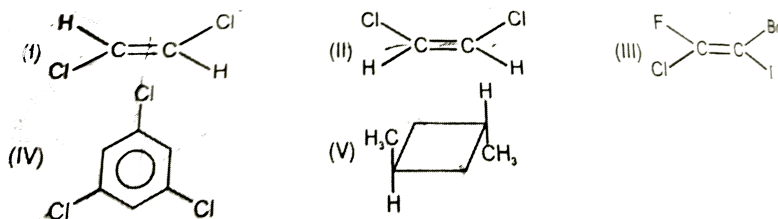
3. The R/S configuration of following compounds are:



 [Watch Video Solution](#)

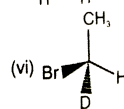
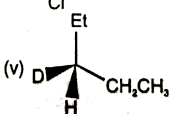
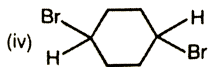
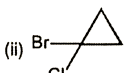
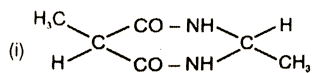
EXERCISE (PART 1 SECTION (E))

1. Find plane of symmetry and centre of symmetry (if possible) in the following compounds.



 [Watch Video Solution](#)

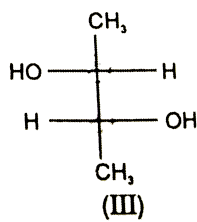
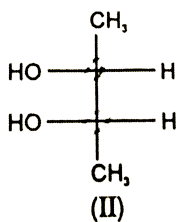
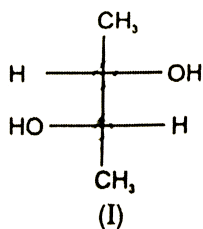
2. Find plane of symmetry, centre of symmetry and axis of symmetry (if possible) in the following molecules.



View Text Solution

EXERCISE (PART 1 SECTION (F))

1. Identify the pairs of enantiomers and diastereomers from the following compounds I, II, and III :



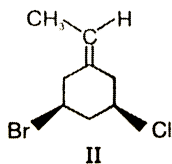
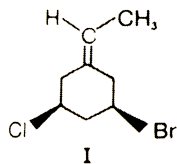
Watch Video Solution

2. Give the relationship between the following pairs of compounds.

| | Compounds | Relationship |
|-----|--|--------------|
| (a) | $\begin{array}{c} \text{CH}_3 \\ \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{H} \end{array}$ and $\begin{array}{c} \text{H} \\ \\ \text{C} = \text{C} \\ \quad \\ \text{H}_3\text{C} \quad \text{CH}_3 - \text{O} - \text{CH}_3 \end{array}$ | |
| (b) | | |
| (c) | | |
| (d) | | |

[View Text Solution](#)

3.



(i) Total

number of fractions on fractional distillation of I, II and III. (ii) Optical active compounds.

(iii) Relation between I and II. (iv) Relation between I and II.

[View Text Solution](#)

EXERCISE (PART 1 SECTION (G))

1. What does D/L & dl represent.

 [View Text Solution](#)

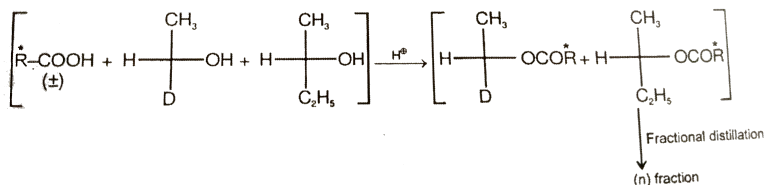
2. Write the definition of specific rotation.

 [View Text Solution](#)

3. Write the formula for optical purity & enantiomeric excess.

 [View Text Solution](#)

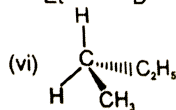
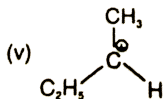
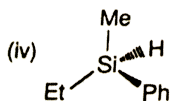
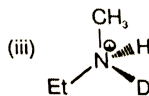
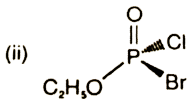
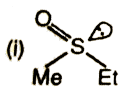
4. The total number of fractions (n) obtained in the following reaction is.....



 [View Text Solution](#)

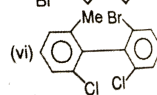
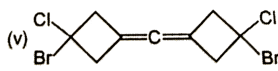
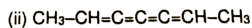
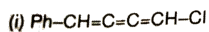
EXERCISE (PART 1 SECTION (H))

1. Which of the following are chiral compound.



 [View Text Solution](#)

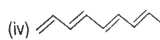
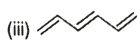
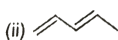
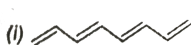
2. Which of the following are chiral molecules



 [View Text Solution](#)

EXERCISE (PART 1 SECTION (I))

1. Find the number of geometrical isomers possible of the following compounds.



 [View Text Solution](#)

2. How many n-octene can show geometrical isomerism?

 [View Text Solution](#)

3. How many geometrical isomers are possible for Hepta-2, 5-dienoic acid:

 [View Text Solution](#)

4. For the given compound $CH_3 - \underset{\substack{| \\ OH}}{CH} - CH = CH - CH_3$.

(i) Total number of stereoisomers.

(ii) Number of optically active stereoisomers.

(iii) Total number of fractions on fractional distillation of all stereoisomers.

 [View Text Solution](#)

5. The total number of possible isomers with molecular formula C_6H_{12} that contain a cyclobutane ring.

 [View Text Solution](#)

[View Text Solution](#)

6. The number of isomers for the compound with molecular formula $C_2BrClFI$ are:

[View Text Solution](#)

EXERCISE (PART 1 SECTION (J))

1. Which conformational state of n-butane lies in higher energy state when rotated along $C_2 - C_3$ bond?

[View Text Solution](#)

2. Draw the most stable conformation of meso - $CH_3CHD - CHDCH_3$

[View Text Solution](#)

3. Write the most polar and most stable conformer of 1-nitropropane.

 [View Text Solution](#)

4. Draw the most stable conformer of 3-hydroxypropanal.

 [View Text Solution](#)

5. Write the Newman projection formula of the following compounds

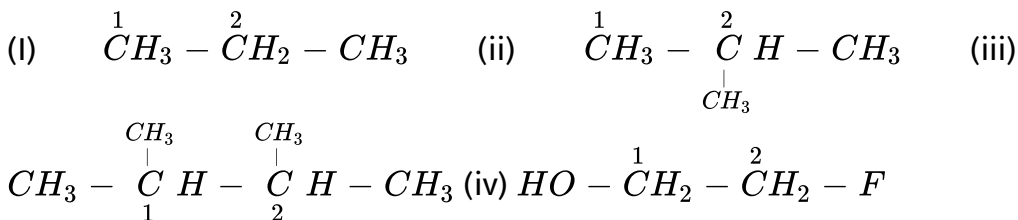
(i) $CI - CH_2 - CH_2 - CH_3$ in its most polar form.

(ii) $HO - CH_2 - CH_2 - OH$ in its most stable form.

(iii) $HOOC - CH_2 - CH_2 - COOH$ in its least stable staggered form.

 [View Text Solution](#)

6. Draw the most stable Newman projection formula along $C_1 - C_2$ bonds of following compounds.



 [View Text Solution](#)

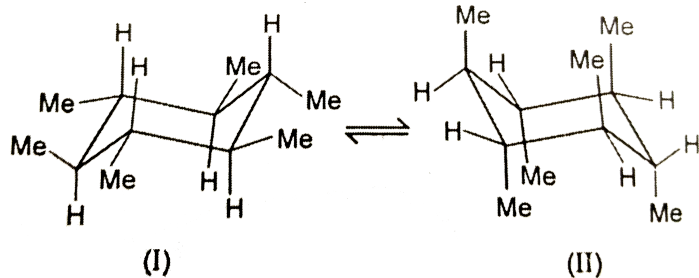
EXERCISE (PART 1 SECTION (K))

1. Which of the following combination of axial & equatorial bonds show Cis or Trans orientation in Dimethyl cyclohexane.

(i) 1e, 2e (ii) 1e, 3e (iii) 1e, 4e (iv) 1e, 2a (v) 1e, 3a (vi) 1e, 4a (vii) 1a, 3a

 [View Text Solution](#)

2. Which one is more stable and why?



 [View Text Solution](#)

EXERCISE (PART II SECTION (A))

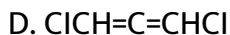
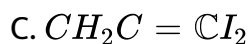
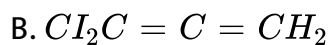
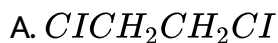
1. Stereoisomers have different:

- A. Molecular formula
- B. Structural formula
- C. Configuration
- D. Molecular mass

Answer: C

 [View Text Solution](#)

2. Which can show the cis-trans isomerism:



Answer: D

 [View Text Solution](#)

3. Which of the following compounds will not show geometrical isomerism :

A. Azomethane

B. 1-Bromo-2-chloroethene

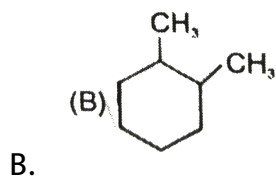
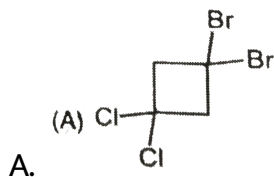
C. 1-Phenylpropene

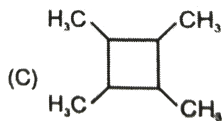
D. 2-Methyl-2-butene

Answer: D

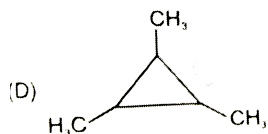
 [View Text Solution](#)

4. Which of the following compound can not show geometrical isomerism?





C.

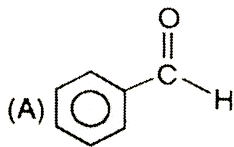


D.

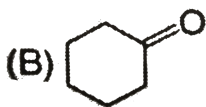
Answer: A

 [View Text Solution](#)

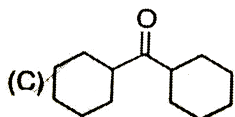
5. Which of the following will form only one oxime on reaction with NH_2OH solution ?1



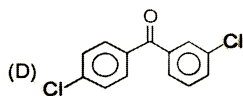
A.



B.



C.



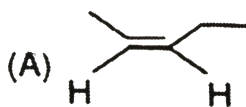
D.

Answer: B::C

 [View Text Solution](#)

EXERCISE (PART II SECTION (B))

1. Identify (Z)-2-pentene :



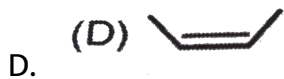
A.



B.



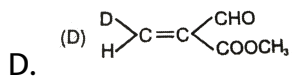
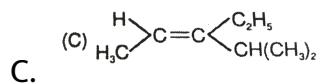
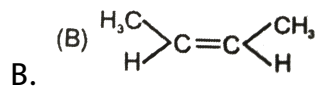
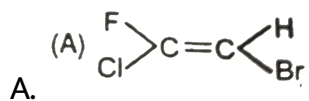
C.



Answer: A

 [View Text Solution](#)

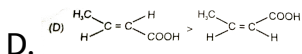
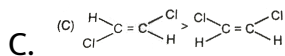
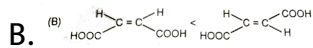
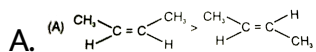
2. The 'E'-isomer is/are:



Answer: D

 [View Text Solution](#)

3. The correct order/s for the given pair of isomers is



Answer: D

 [View Text Solution](#)

EXERCISE (PART II SECTION (C))

1. Chiral molecules are :

A. Superimposable on their mirror image

B. Not superimposable on their mirror image

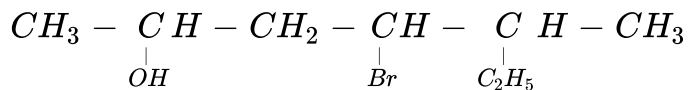
C. unstable molecules

D. capable of showing geometrical isomerism

Answer: B

 [View Text Solution](#)

2. Number of chiral carbon present in the following compound:



A. 2

B. 3

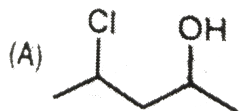
C. 4

D. 5

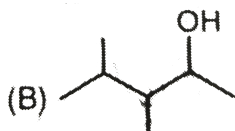
Answer: B

 [Watch Video Solution](#)

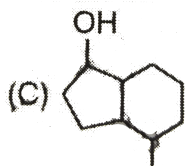
3. The compound which has maximum number of chiral centres is



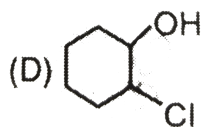
A.



B.



C.



D.

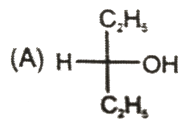
Answer: C



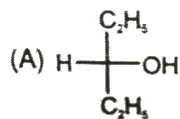
Watch Video Solution

EXERCISE (PART II SECTION (D))

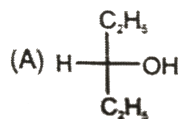
1. Which of the following is the structure of (S)-Pentan-2-ol is?



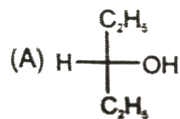
A.



B.



C.



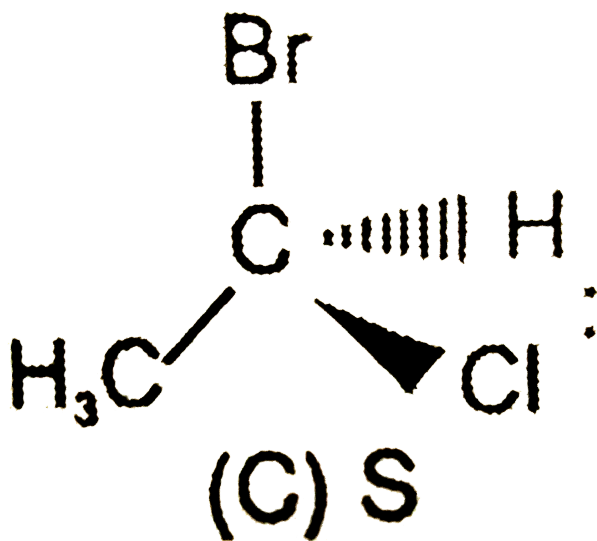
D.

Answer: C



View Text Solution

2. The configuration of the given compound is



A. E

B. R

C. S

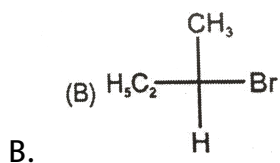
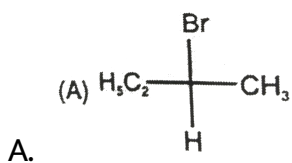
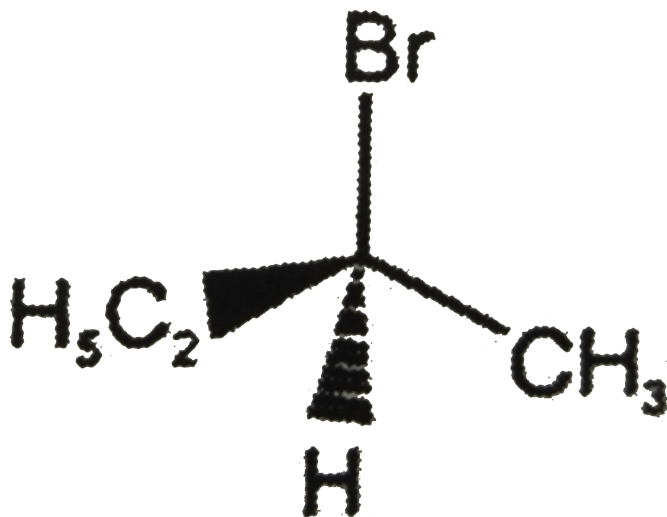
D. Z

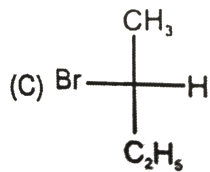
Answer: B



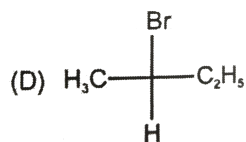
View Text Solution

3. Which Fisher projection represents the given wedge dash structure :





C.

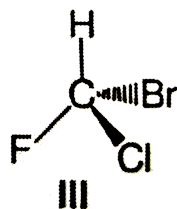
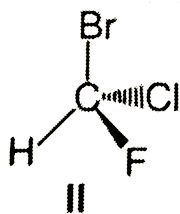
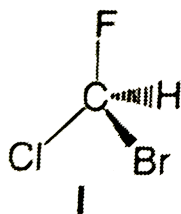


D.

Answer: A

 [View Text Solution](#)

4. Which of the following have same configuration.



A. I & II

B. II & III

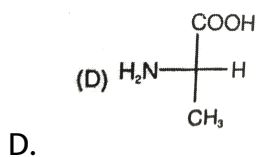
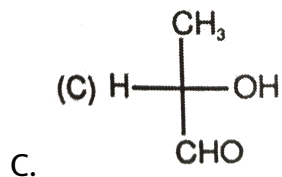
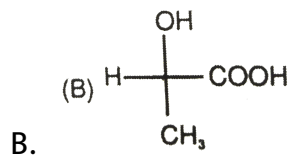
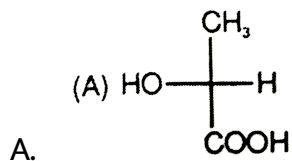
C. I & III

D. All

Answer: A

 [View Text Solution](#)

5. Which has D configuration.

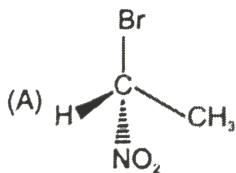


Answer: A

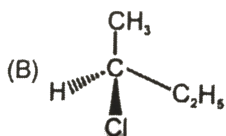
 [View Text Solution](#)

EXERCISE (PART II SECTION (E))

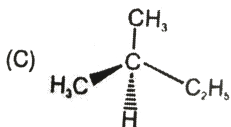
1. Which of the following compound posses plane of symmetry ?



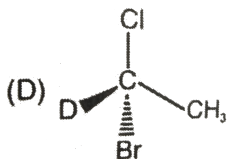
A.



B.



C.

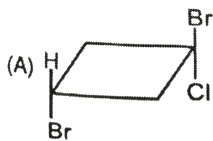


D.

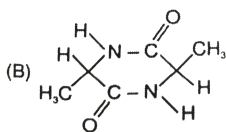
Answer: C

 [View Text Solution](#)

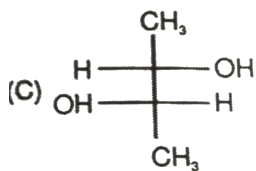
2. Which of the following compound posses centre of symmetry?



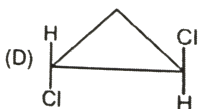
A.



B.



C.

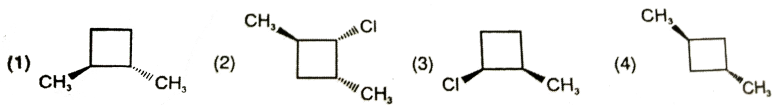


D.

Answer: B

 [View Text Solution](#)

3. Which of the following are chiral:



A. 1, 2, 3

B. 1, 2, 4

C. 2, 3, 4

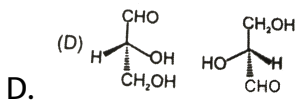
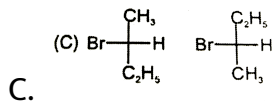
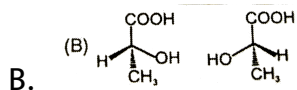
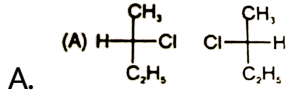
D. 1, 3, 4

Answer: A

 [View Text Solution](#)

EXERCISE (PART II SECTION (F))

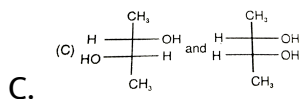
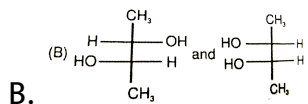
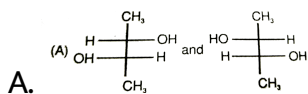
1. Which is not the pair of enantiomers ?

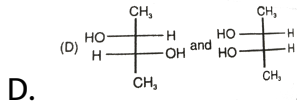


Answer: D

 [View Text Solution](#)

2. Which of the following pairs of compounds are enantiomers :





Answer: A

 [View Text Solution](#)

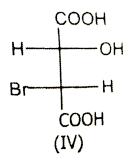
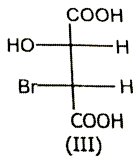
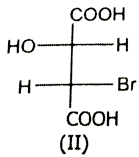
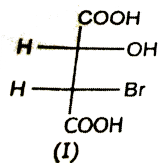
3. Stereoisomers which are not mirror image of each other, are called.:

- A. Enantiomers
- B. Tautomers
- C. Meso
- D. Diastereomers

Answer: D

 [Watch Video Solution](#)

4. Which one among the following is not diastereomeric pair.



A. I and III

B. I and II

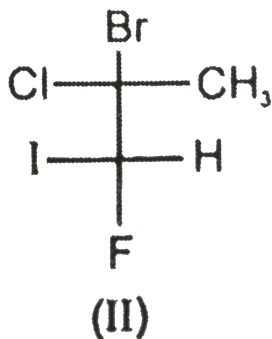
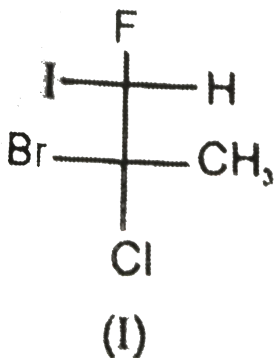
C. II and III

D. I and IV

Answer: A

 [View Text Solution](#)

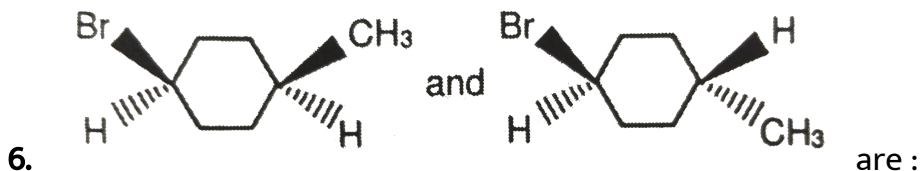
5. What is the relationship between (I) & (II)



- A. Enantiomer
- B. Diastereomers
- C. Constitutional isomer
- D. Identical molecules

Answer: B

 [View Text Solution](#)



- A. Enantiomers
- B. Optical inactive diastereomers
- C. Optical active diastereomers
- D. Identical

Answer: B

 [View Text Solution](#)

EXERCISE (PART II SECTION (G))

1. The instrument which can be used to measure optical activity, i.e., specific rotation:

A. Refractometer

B. Photometer

C. Voltmeter

D. Polarimeter

Answer: D



View Text Solution

2. (+) tartaric acid has a specific rotation of +12 unit when measured in 12cm polarimeter tube and 2g/ml concentration at given temperature and light. When it is diluted to half the concentration, length of tube and other parameters being same, then the specific rotation will be:

A. +6 unit

B. +12 unit

C. -6 unit

D. $+24$ unit

Answer: B

 [View Text Solution](#)

3. The enantiomeric excess and observed rotation of a mixture containing 6 gm of (+)-2-butanol and 4 gm of (-)-2-butanol are respectively (if the specific rotation of enantiomerically pure (+)-2-butanol is $+13.5$ unit).

A. 80%, $+ 2.7$ unit

B. 20%, -27 unit

C. 20%, $+ 2.7$ unit

D. 80%, $- 27$ unit

Answer: C

 [View Text Solution](#)

4. The racemic mixture of Alanine $\left(CH_3 - \underset{\substack{| \\ NH_2}}{C} H - COOH \right)$ can

be resolved by using,

(1) (+) -2-Butanol (2) (l)-2-Chlorobutanoic acid

(3) (±) -2 - Butanol (4) (d l mix)-2-Chlorobutanoic acid

A. 1 & 2 only

B. 1 & 3 only

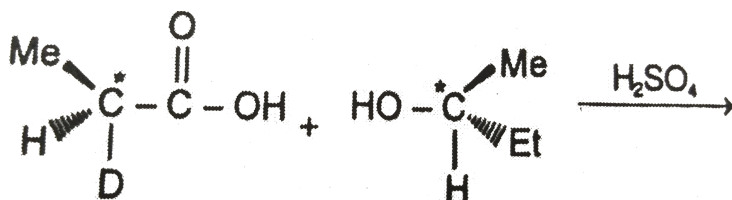
C. 2 & 4 only

D. 3 & 4 only

Answer: A

 [View Text Solution](#)

5. The major product (ester) of the following reaction is



- A. A single stereoisomer (optically active)
- B. A mixture of diastereomers (both optically active)
- C. A racemic mixture (optically inactive)
- D. A mixture of four stereoisomers (two racemic mixtures)

Answer: A

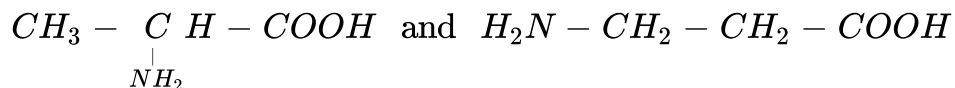
 [View Text Solution](#)

6. Which of the following pair of isomers can not be separated by fractional crystallisation or fractional distillation:

A. Maleic acid and Fumaric and

B. (+)-Tartaric acid and meso-tartaric acid

C.



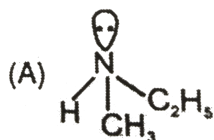
D. (+)-lactic acid and (-) -lactic acid

Answer: D

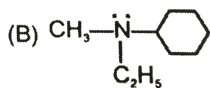
 [View Text Solution](#)

EXERCISE (PART II SECTION (H))

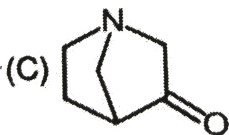
1. Which of the followin compounds will show optical activity?



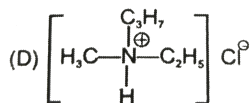
A.



B.



C.



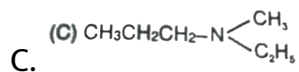
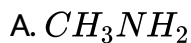
D.

Answer: C::D



View Text Solution

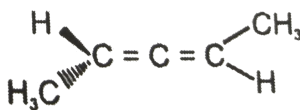
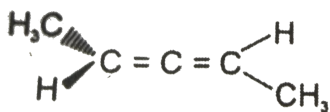
2. Which of the following amine is optically active?1



Answer: D

 [View Text Solution](#)

3. The following molecules are :

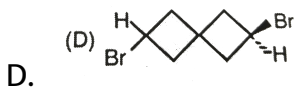
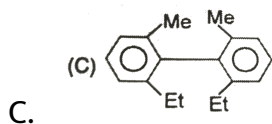
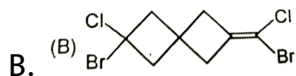


- A. Enantiomers
- B. Diastereomers
- C. Identical
- D. Conformers

Answer: A

 [View Text Solution](#)

4. Which of the following is/are chiral?



Answer: C::D



[View Text Solution](#)

EXERCISE (PART II SECTION (I))

1. How many geometrical isomers are possible for the given compound?



A. 2

B. 4

C. 6

D. 8

Answer: B



[View Text Solution](#)

2. How much geometrical isomers are possible for the given compound?



A. 2

B. 3

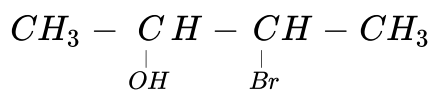
C. 4

D. 8

Answer: C

 [Watch Video Solution](#)

3. Total number of stereoisomers of compound is:



A. 2

B. 4

C. 6

D. 8

Answer: B

 [View Text Solution](#)

4. Total number of optically active stereoisomers of tartaric acid is

A. 2

B. 4

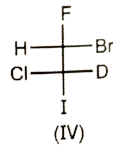
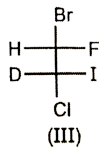
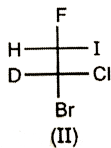
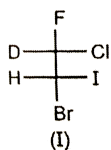
C. 3

D. 0

Answer: A

 [View Text Solution](#)

5. Numer of fractions on fractional distillation of mixture of:



A. 2

B. 3

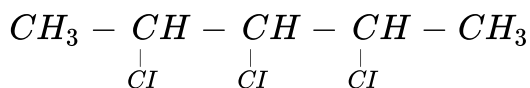
C. 4

D. 1

Answer: C

 View Text Solution

6. Total number of optically stereoisomers of



A. 2

B. 4

C. 6

D. 8

Answer: A

 View Text Solution

7. The total number of ketones (including stereo isomers) with the molecular formula $C_6H_{12}O$ is :

A. 4

B. 5

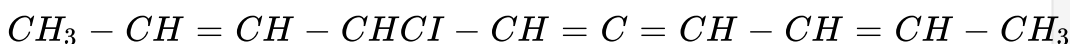
C. 6

D. 7

Answer: D

 [View Text Solution](#)

8. Total number of optical active stereoisomers of the following compound is :



A. 8

B. 6

C. 16

D. 10

Answer: C



[View Text Solution](#)

EXERCISE (PART II SECTION (J))

1. The eclipsed and staggered conformation of ethane is due to -

- A. Free rotation about C-C single bond
- B. Restricted rotation about C-C single bond
- C. Absence of rotation about C-C bond
- D. None of the above

Answer: A

 [View Text Solution](#)

2. Which of the following is associated with Torsional strain?

- A. Repulsion between bond pair of electrons
- B. Size of the groups present at adjacent atoms
- C. Bond angle strain
- D. Attraction of opposite charges

Answer: A

 [View Text Solution](#)

3. The Baeyer's angle strain is expected to be maximum in

- A. Cyclodecane
- B. Cyclopentane
- C. Cyclobutane
- D. Cyclopropane

Answer: D

 [View Text Solution](#)

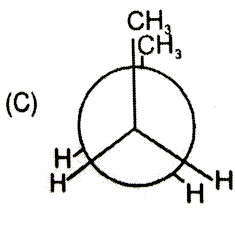
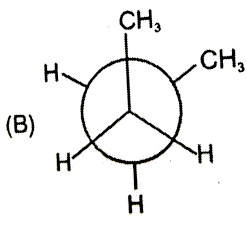
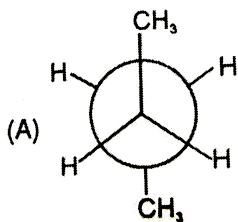
4. The minimum torsional strain developed in butane is at dihedral angle (s)

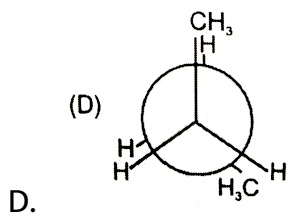
- A. 0° , 108°
- B. 120° , 240°
- C. 60° , 180° , 300°
- D. 60° , 120° , 180°

Answer: C

 [View Text Solution](#)

5. In the following the most stable conformation of n-butane is :

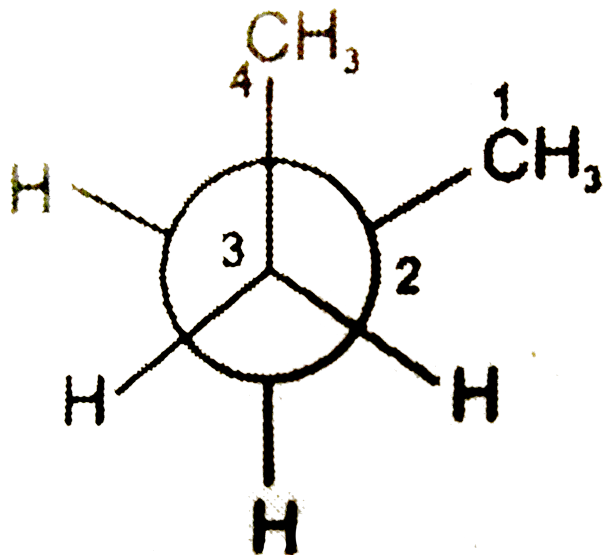




Answer: A

 [View Text Solution](#)

6. Newman projection of Butane is given, C-2 is rotated by 120° along $C_2 - C_3$ bond in anticlockwise direction, the conformation formed is



(B) fully eclipsed

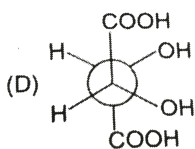
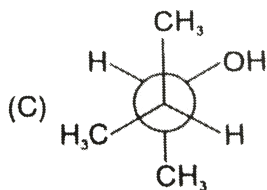
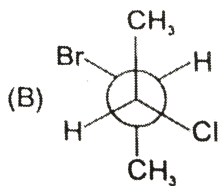
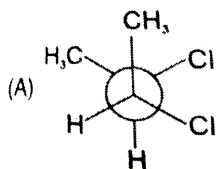
- A. anti
- B. fully eclipsed
- C. gauche
- D. partially eclipsed

Answer: C



View Text Solution

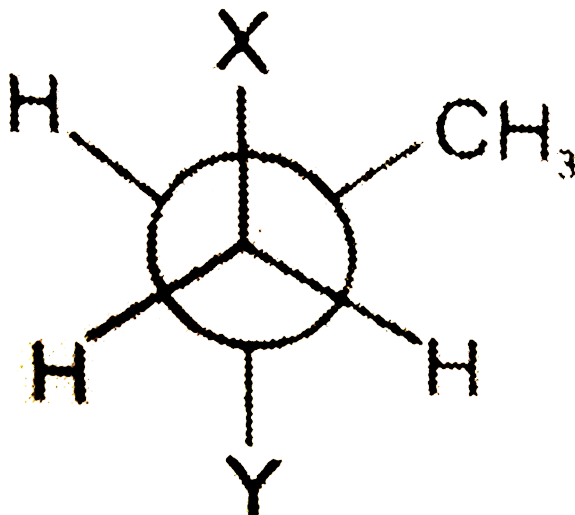
7. Which of the following is an achiral molecule?



Answer: A

 Watch Video Solution

8. The newman projection formula of 2-3, dimethylbutane is given as



X,Y respectively can be:

- A. $-CH(CH_3)_2$ and H
- B. $-CH_3$ and $-C_2H_5$
- C. $-C_2H_5$ and $-CH_3$
- D. H and $-CH(CH_3)_2$

Answer: D



View Text Solution

9. In 2 - Fluoroethanol which conformer will be most stable?

A. Eclipsed

B. Fully Eclipsed

C. gauche

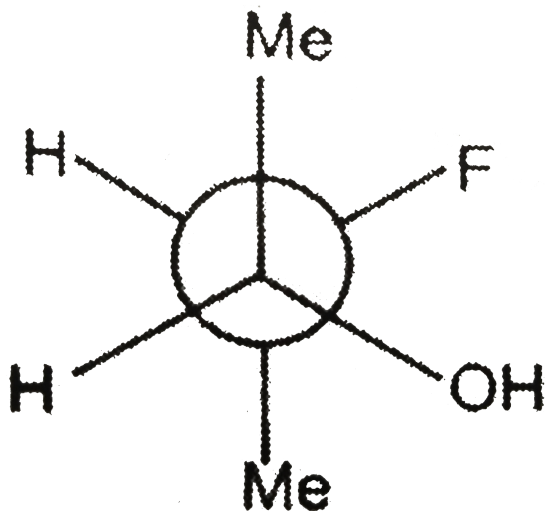
D. Staggered

Answer: C



Watch Video Solution

10. The true statement about the following conformation is :

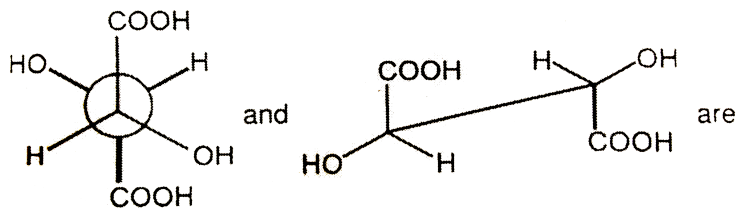


- A. It has maximum angle strain.
- B. It does not have eclipsing strain (torsional strain).
- C. It does not have any intramolecular hydrogen bonding.
- D. It has maximum Vander Waal strain.

Answer: B

 [View Text Solution](#)

11. Which statement is true



- A. Enantiomers
- B. Diastereomers
- C. identical compounds
- D. Conformers

Answer: C

 [Watch Video Solution](#)

EXERCISE (PART II SECTION (K))

1. The least stable conformation of cyclohexane is

- A. Boat
- B. Chair
- C. Twist boat
- D. Half chair

Answer: D

 [View Text Solution](#)

2. Flagpole intersection is present in:

- A. Boat form of cyclohexane
- B. Chair form of cyclohexane
- C. Anti form of n-butane
- D. Fully eclipsed form of n-butane

Answer: A



[View Text Solution](#)

3. Chair form of cyclohexane is more stable than boat form because :

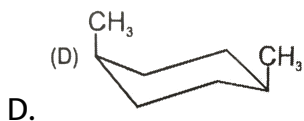
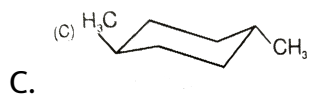
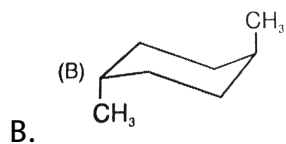
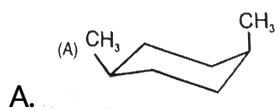
- A. In chair form carbons are in staggered form and in boat form carbons are in eclipsed form
- B. In chair form carbons are in eclipsed form and in boat form all the carbons are in eclipsed form
- C. Bond angle in chair form is 111° and bond angle in boat form is 109.5°
- D. Bond angle in chair form is 109.5° and in boat form 111°

Answer: A



[View Text Solution](#)

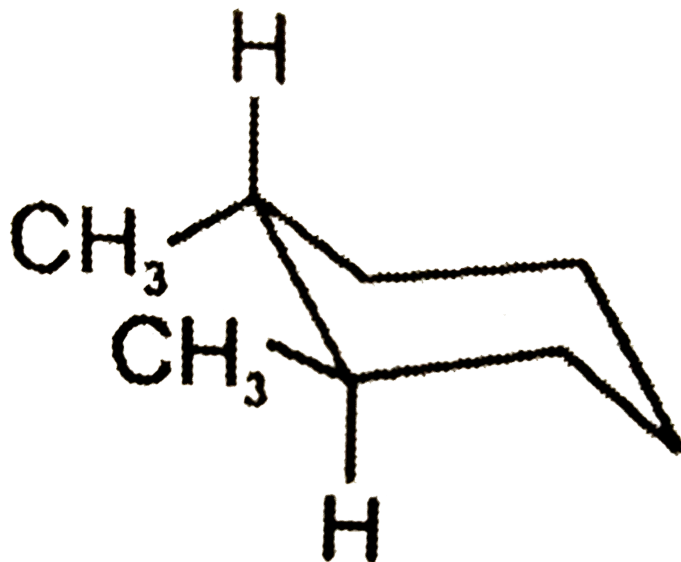
4. The stable form of trans-1,4-dimethylcyclohexane is represented as:



Answer: C

 Watch Video Solution

5. Geometry of the given compound



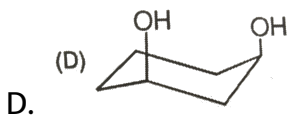
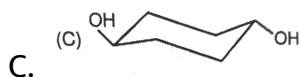
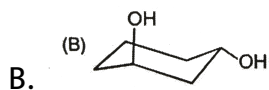
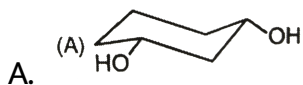
- A. Cis
- B. Trans
- C. Cis and trans both
- D. No geometrical isomerism

Answer: B

 [View Text Solution](#)

6. The most stable form of cis cyclohexane -1,3-diol is represented as

:1

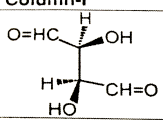
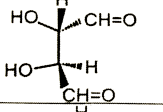
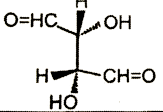
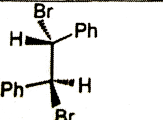


Answer: D

 [View Text Solution](#)

EXERCISE (PART III MATCH THE COLUMN)

1. Match the column -I with column-II

| | Column-I | Column-II | |
|-----|---|-----------|--|
| (A) |  | (p) | Chiral Molecule |
| (B) |  | (q) | Achiral Molecule |
| (C) |  | (r) | Plane or centre of symmetry present |
| (D) |  | (s) | Axis of symmetry present (except C ₁). |

 [View Text Solution](#)

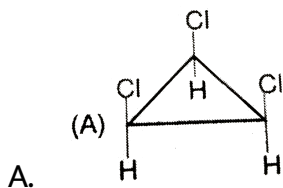
2. Match the following

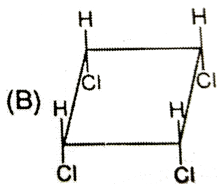
| | Column-I | | Column-II |
|-----|----------|-----|--|
| (A) | | (p) | Conformation with minimum vander-waal strain |
| (B) | | (q) | Conformation with maximum vander waal strain |
| (C) | | (r) | Conformation of maximum torsional strain |
| (D) | | (s) | Conformation with minimum torsional strain |

 [View Text Solution](#)

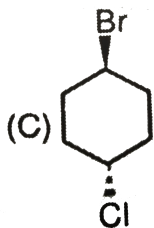
EXERCISE (PART I ONLY ONE OPTION CORRECT TYPE)

1. Which of the following molecule is chiral.

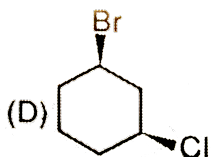




B.



C.

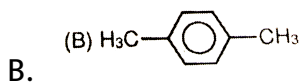
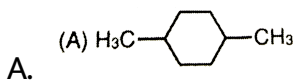


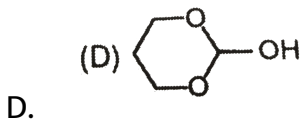
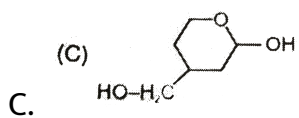
D.

Answer: D

 [View Text Solution](#)

2. Which one of the following compounds will show enantiomerism ?

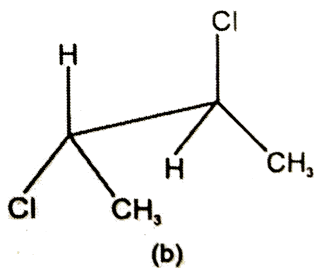
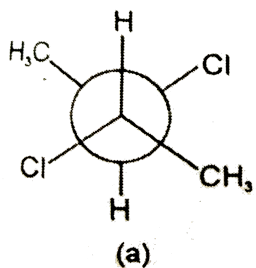




Answer: C

 [View Text Solution](#)

3. Which of the following statement regarding the projections shown below is true ?



A. a' and 'b' both represent the same configuration

B. Both 'a' and 'b' are optically active

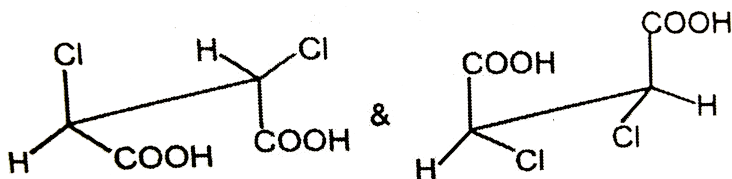
C. b' alone is optically active

D. a' alone is optically active

Answer: C

 [View Text Solution](#)

4. The structures represent



A. geometrical isomers

B. positional isomers

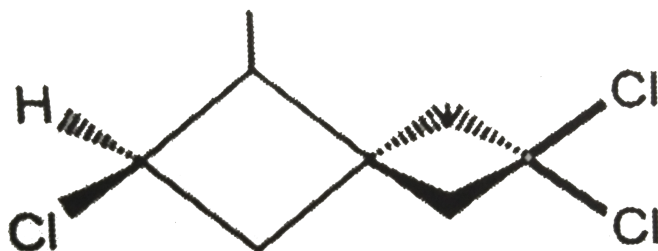
C. conformational isomers

D. configurational isomers

Answer: D

 [View Text Solution](#)

5. The given compound (X) has:



A. chirality

B. superimposability on its mirror image isomer

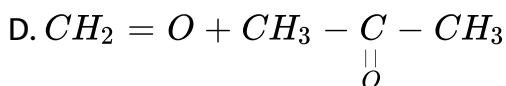
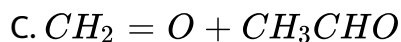
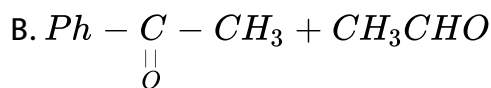
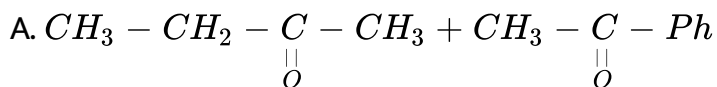
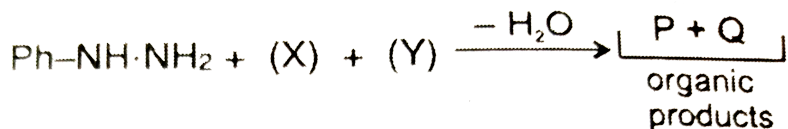
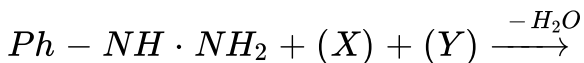
C. plane of symmetry

D. C_2 axis of symmetry

Answer: A

 [View Text Solution](#)

6. The compound X and Y in below reaction can be

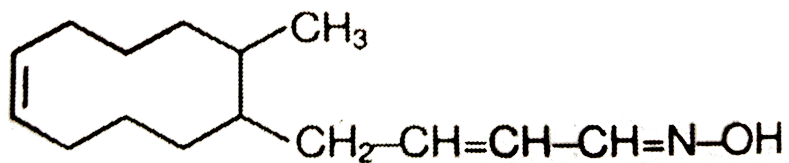


Answer: D



View Text Solution

7. No. of Geometrical isomers for following compound is :



A. 8

B. 16

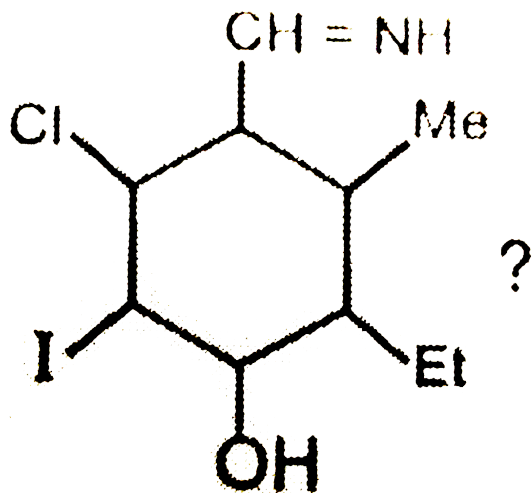
C. 32

D. 10

Answer: B

 [View Text Solution](#)

8. How many stereoisomers are possible for



A. 128

B. 64

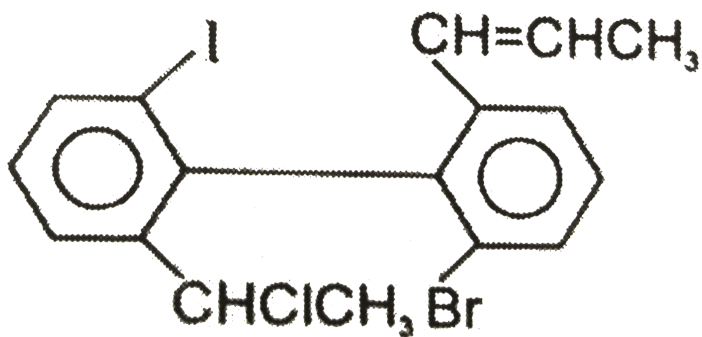
C. 32

D. 16

Answer: A

 [View Text Solution](#)

9. How many spatial orientations are possible in the following compound?



A. 2

B. 8

C. 6

D. 4

Answer: B



[View Text Solution](#)

10. Number of conformational isomers of ethane.

A. 7

B. 3

C. 4

D. Infinite

Answer: B

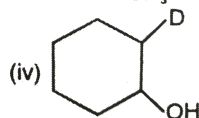
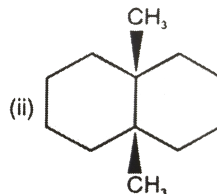
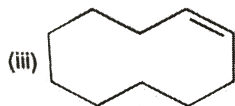
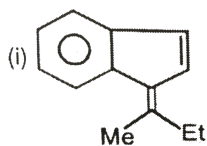
 [Watch Video Solution](#)

EXERCISE (PART II : SINGLE AND DOUBLE VALUE INTEGER TYPE)

1. How many cyclic isomers isomers (structural and geometrical only) exist for C_5H_{10} ?

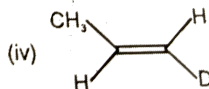
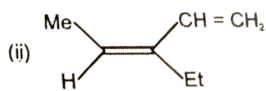
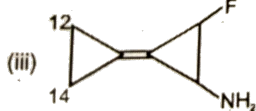
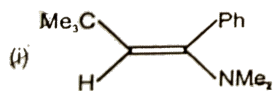
 [Watch Video Solution](#)

2. In given compounds how many can show geometrical isomerism :

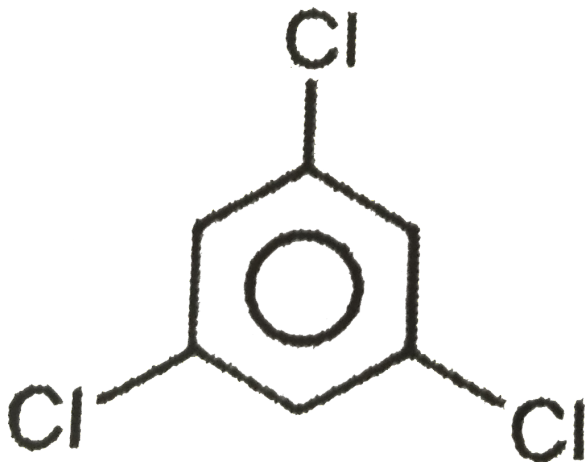


 [View Text Solution](#)

3. In given compounds how many have Z configuration along double bond ?



 [View Text Solution](#)



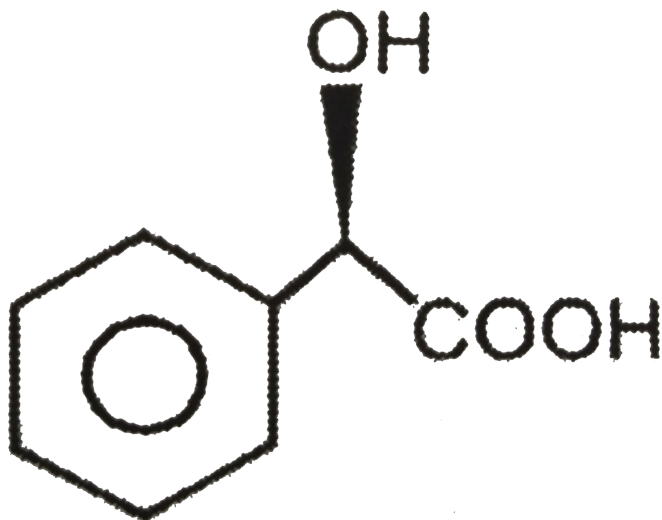
4. Sum of C_2 & C_3 axis of symmetry is

[▶ Watch Video Solution](#)

5. Pure cholesterol has a specific rotation of -32 . A sample of cholesterol prepared in the lab has a specific rotation of -8 . The enantiomeric excess of the sample of cholesterol is $x\%$. X is :

[▶ Watch Video Solution](#)

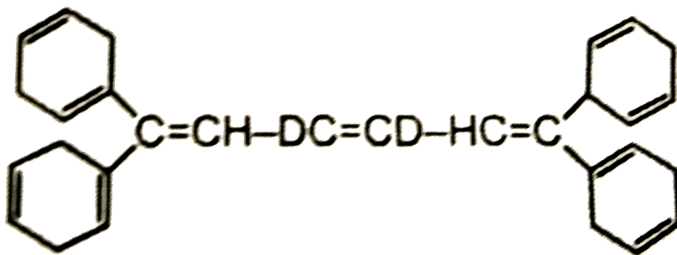
6. Pure (R) Mandelic acid



has specific rotation of 150 . If a sample contains 60% of the R and 40% of its enantiomer, the $[\alpha]$ of his solution is.

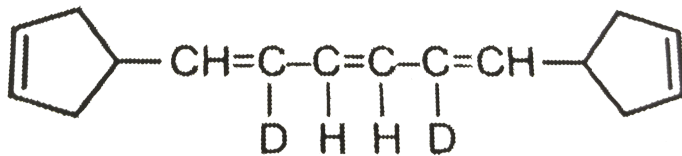
 [View Text Solution](#)

7. Total number of geometrical isomers in the given compound are



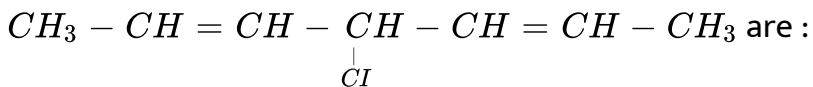
[View Text Solution](#)

8. Total number of geometrical isomers in the given compound are :



[Watch Video Solution](#)

9. Total number of stereoisomers of compound



 [Watch Video Solution](#)

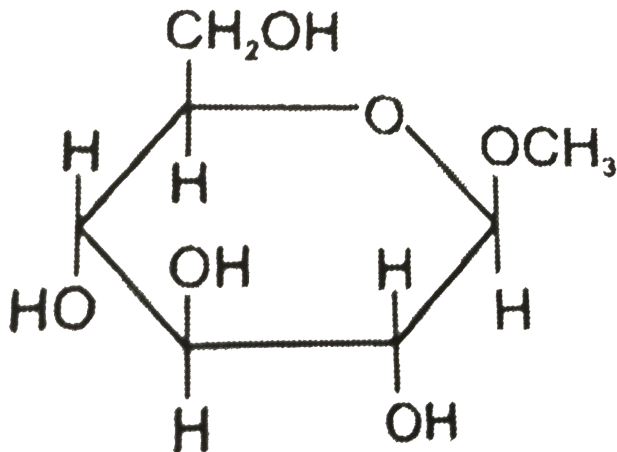
10. Total number of optically active stereoisomers of $CH_3 - \underset{\underset{Cl}{|}}{CH} - CH = CH - \underset{\underset{Cl}{|}}{CH} - CH_3$ are :

 [Watch Video Solution](#)

11. For the compound $A - CH_2 - CH_{27} - A$ draw the newman projection formula of all the stable conformational it $\mu_{obs} = 2D$ and $X_{anti} = 0.75$ then find μ_{gauche} . (If $A = NO_2$)

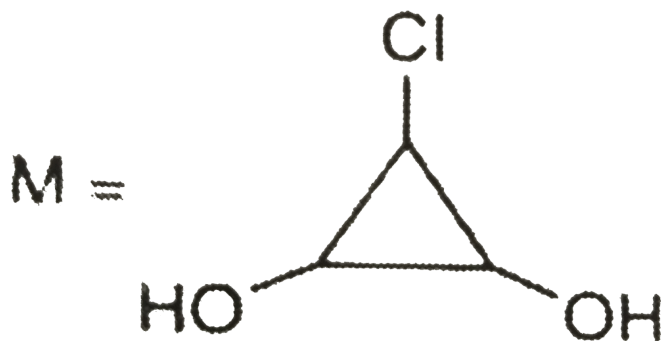
 [View Text Solution](#)

12. Total number of stereoisomers possible for the given structure excluding the configuration mentioned is :



 [View Text Solution](#)

13. Observe the compound 'M'



If in this compound

X = Total number of asymmetric C^* atoms

Y = Number of similar asymmetric C^* atoms

Z= Number of optically active stereoisomers

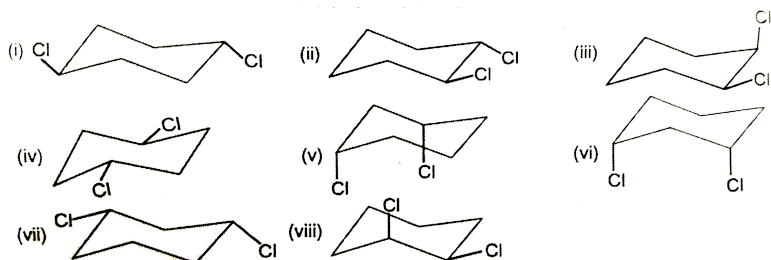
W= Number of optically inactive isomers

R= Number of geometrical orientations in space

Report your answer as : X +Y +Z+ W+ R

 [View Text Solution](#)

14. How many of the following are cis dichlorocyclohexane.



 [View Text Solution](#)

EXERCISE (PART III : ONE OR MORE THAN ONE OPTIONS CORRECT TYPE)

1. What should be the minimum conditions to show geometrical isomerism ?

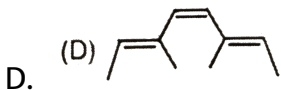
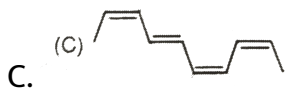
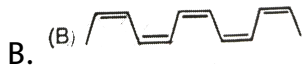
- A. Restricted rotation about double bond or ring.
- B. Groups which are responsible to show geometrical isomerism differ in their relative distance.
- C. Free rotation about single bond.
- D. Two different groups at both restricted atoms.

Answer: A::B::D

 [View Text Solution](#)

2. Which of the following compounds has cis configuration at each double bond ?





Answer: B::D

 [View Text Solution](#)

3. Which of the following carbonyl compounds can give two oximes on reaction with hydroxyl amine ?

A. HCNO

B. CH_3CHO

C. PhCHO

D. CH_3COPh

Answer: B::C::D



[View Text Solution](#)

4. Which of the following is not true for maleic acid and fumaric acids?

- A. Configurational isomers
- B. Stereo isomers
- C. Z and E isomers
- D. Constitutional isomers

Answer: A::B::C



[Watch Video Solution](#)

5. Which of the following is correct statement :

- A. Geometrical isomers are not mirror image isomer.

B. A compound having double bond (restricted bond) always show geometrical isomerism.

C. Acyclic compound having only single bond does not show geometrical isomerism.

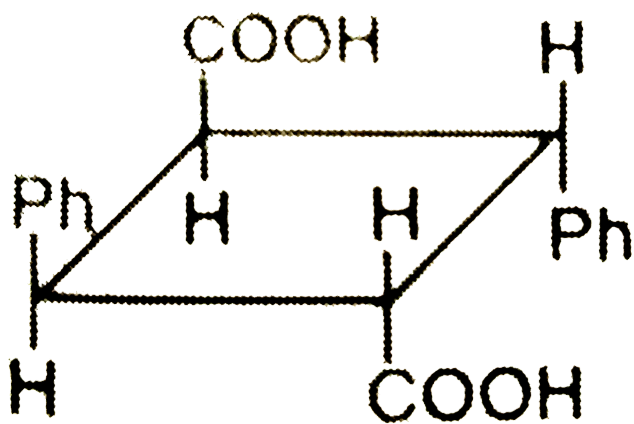
D. Cyclodecene can show cis & trans form.

Answer: A::C::D



View Text Solution

6. Which of the following statement(s) is/are correct for given compound :



α -truxillic acid

- A. It is a optically active compound
- B. It can show geometrical isomerism
- C. It posses centre of symmetry but not plane of symmetry
- D. It is a meso compound

Answer: B::C

 [View Text Solution](#)

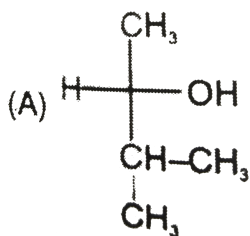
7. Find out correct statement/s.

- A. All chiral centers are stereogenic centers.
- B. All stereogenic centers are not chiral center.
- C. A compound may be chiral without chiral center.
- D. A compound will be chiral only if it has at least one chiral center.

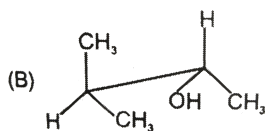
Answer: A::B::C

 [View Text Solution](#)

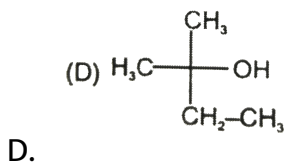
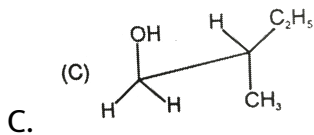
8. Which is/are not the structure of 3-Methyl butan -2-ol.



A.



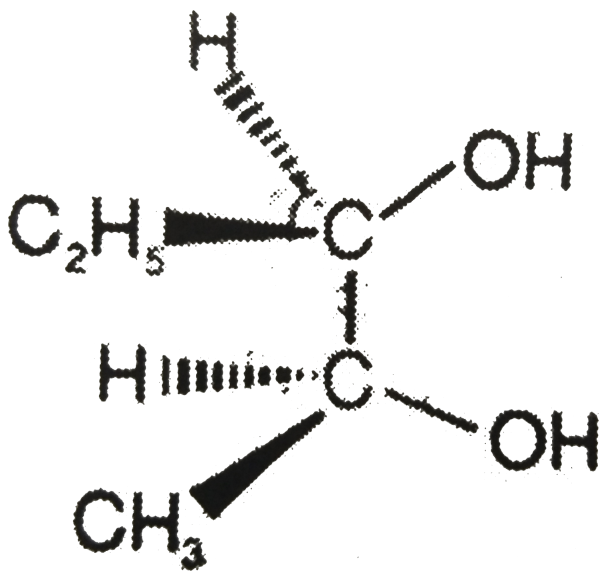
B.



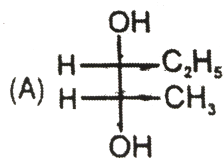
Answer: C::D

View Text Solution

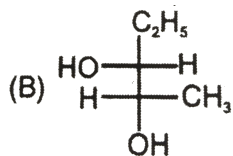
9.



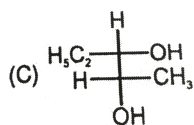
Fischer projection formula of this compound can be represented as :



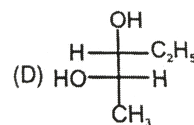
A.



B.



C.

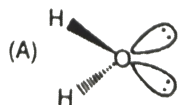


D.

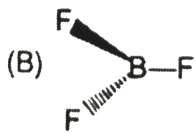
Answer: A::B::C::D

 View Text Solution

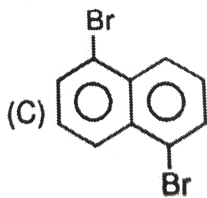
10. Which of the following compounds will have C_2 axis of symmetry?



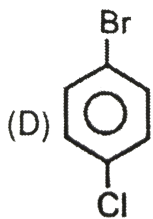
A.



B.



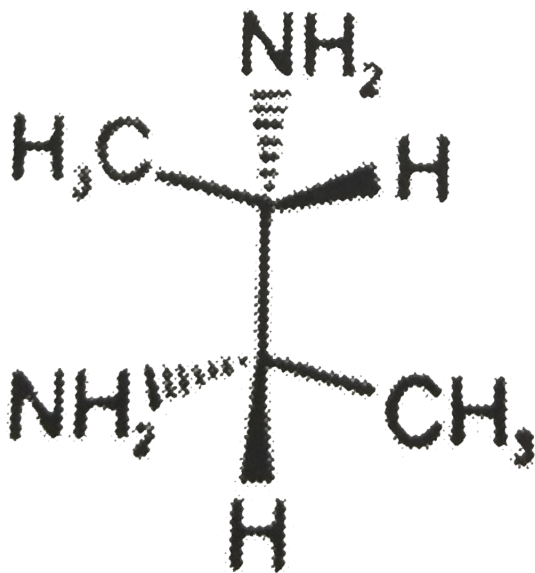
C.



D.

Answer: A::B::C::D

 [View Text Solution](#)



11.

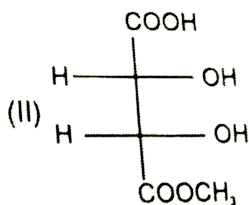
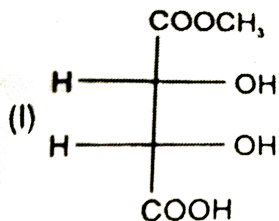
- A. optically active molecule.
- B. having plane of symmetry
- C. having axis of symmetry
- D. having centre of symmetry

Answer: A::C



View Text Solution

12. The correct relation between compound(s) I and II is/are



- A. identical.
- B. Diastereomers
- C. enantiomers
- D. configurational isomers

Answer: C::D

 [View Text Solution](#)

13. Enantiomers have:

- A. Similar physical properties (generally).

B. Similar chemical properties with optical active compounds.

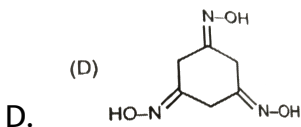
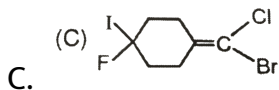
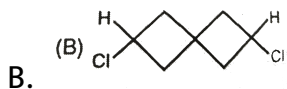
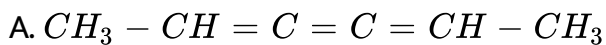
C. Same absolute value of specific rotation.

D. Different configurations.

Answer: A::C::D

 **Watch Video Solution**

14. Which of the following will show geometrical isomerism?



Answer: A::D

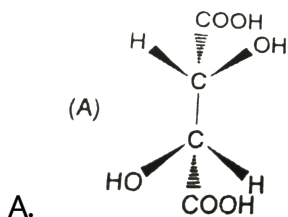
EXERCISE (PART IV : COMPREHENSION)

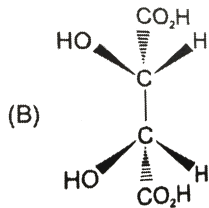
1. Tartaric acid $[HO_2CH(OH)CH(OH)CO_2H]$ was an important compound in history of stereochemistry.

Two naturally occurring forms of tartaric acid are optically inactive.

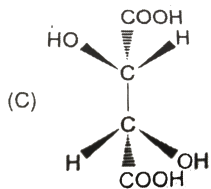
One optically inactive form (P) has a melting point of $210-212^\circ\text{C}$ and can be separated into two optically active forms, whereas other optically inactive form (Q) cannot be resolved further.

Optically inactive form Q is





B.



C.

D. none of these

Answer: B

 [View Text Solution](#)

2. Tartaric acid $[HO_2CH(OH)CH(OH)CO_2H]$ was an important compound in history of stereochemistry.

Two naturally occurring forms of tartaric acid are optically inactive.

One optically inactive form (P) has a melting point of 210-212°C and can be separated into two optically active forms, whereas other

optically inactive form (Q) cannot be resolved further.

A optically inactive form P is :

- A. Optically inactive due to internal compensation.
- B. Optically inactive due to presence of plane of symmetry.
- C. Optically inactive due to external compensation.
- D. Optically inactive due to intramolecular hydrogen bonding.

Answer: C

 [View Text Solution](#)

3. appropriately matching the information given in the three columns of the following table.

Column 1 & 2 contain projection formula of some molecules & column-3 contains their properties.

| Column 1 | Column 2 | Column 3 |
|----------|----------|--|
| (I) | (i) | (P) Compounds having same boiling or melting points. |
| (II) | (ii) | (Q) Compounds can be separated by fractional distillation. |
| (III) | (iii) | (R) Compounds having different boiling or melting points. |
| (IV) | (iv) | (S) Compounds which are optical resolvable. |

The correct combination that represents enantiomers with their correct properties.

- A. (III) (iv) (S)
- B. (I) (ii) (P)
- C. (II) (i) (S)
- D. (IV) (iii) (P)

Answer: C

4. appropriately matching the information given in the three columns of the following table.

Column 1 & 2 contain projection formula of some molecules & column 3 contains their properties.

| Column 1 | Column 2 | Column 3 |
|----------|----------|--|
| (I) | (i) | (P) Compounds having same boiling or melting points. |
| (II) | (ii) | (Q) Compounds can be separated by fractional distillation. |
| (III) | (iii) | (R) Compounds having different boiling or melting points. |
| (IV) | (iv) | (S) Compounds which are optical resolvable. |

The correct combination that represents diastereomers with their correct properties.

A. (I) (i) Q

B. (II) (ii) (P)

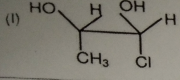
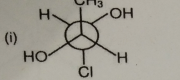
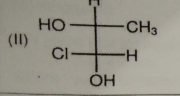
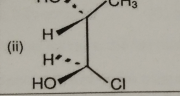
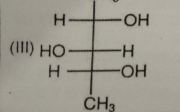
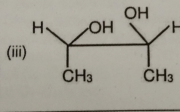
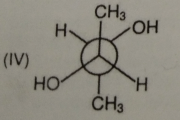
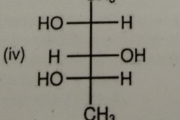
C. (IV) (ii) (R)

D. (IV) (iii) (Q)

Answer: D

 [View Text Solution](#)

5. appropriately matching the information given in the three columns of the following table.

| Column 1 | Column 2 | Column 3 |
|---|---|--|
| (I)  | (i)  | (P) Compounds having same boiling or melting points. |
| (II)  | (ii)  | (Q) Compounds can be separated by fractional distillation. |
| (III)  | (iii)  | (R) Compounds having different boiling or melting points. |
| (IV)  | (iv)  | (S) Compounds which are optical resolvable. |

Which of the following combination gives correct information.

A. (I) (ii) (Q)

B. (II) (iii) (P)

C. (III) (iv) (P)

D. (IV) (iii) (P)

Answer: A::C



[View Text Solution](#)

EXERCISE (PART -1 JEE (ADVANCED))

1. An enantiomerically pure acid is treated with racemic mixture of an alcohol having one chiral carbon. The ester formed will be :

A. Optically active mixture

B. Pure enantiomer

C. Meso compound

D. Racemic mixture

Answer: A

 [Watch Video Solution](#)

2. A racemic mixture of (\pm) 2-phenylpropanoic acid on esterification with (+) 2-butanol gives two ester.

Mention the stereochemistry of the two esters produced.

 [View Text Solution](#)

3. In the Newman projection formula of the most stable staggered form of *n*-butane, which of the following reasons is the cause of its instability?

A. Vander-Waal's strain

B. Torsional strain

C. Combination of both

D. N/A

Answer: A::B::C::D

 [Watch Video Solution](#)

4. In the given conformation, if C_2 is rotate about $C_2 - C_3$ bond anticlockwise by an angle of 120° then the conformation obtained is



A. staggered

B. fully eclipsed

C. gauche

D. partially eclipsed

Answer: C

 [Watch Video Solution](#)

5. It is given that for conformational isomers, the net dipole moment

$$\mu_{obs} = \sum \mu_i x_i$$

Where μ_{obs} = observed dipole moment of the compound

μ_i = dipole moment of the stable conformational isomers

X_1 = mole fraction of stable conformers

of the compound $Z - CH_2 - CH_2 - Z$ draw the Newman

projection formula of all stable conformational isomers, if

$\mu_{obs} = 1D$, and $X_{anti} = 0.82$, find μ_{gauche} . Now draw the

Newman projection formula of the most stable conformation of

meso Y-CHD-CHD-Y.

(a) If Y is CH_3 (rotation about $C_2 - C_3$ bond)

(b) If Y is OH (rotation about $C_1 - C_2$ bond)



[View Text Solution](#)

6. Statement I: Molecules that are non-superimposable on their mirror images are chiral.

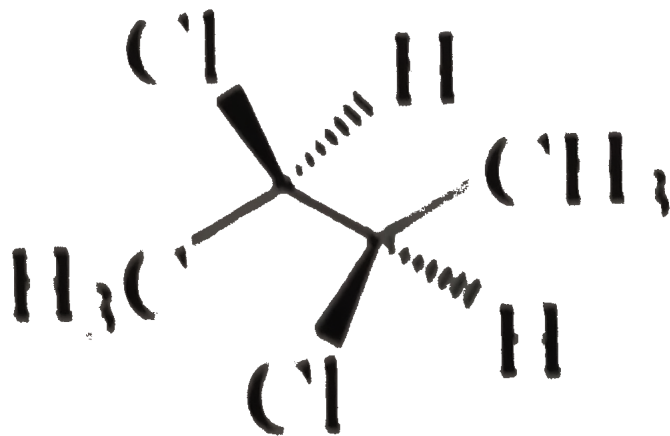
Statement II: All chiral molecules have chiral centres.

- A. Statement -1 is true, statement-2 is true, statement-2 is a correct explanation for statement -1.
- B. Statement-1 is true, statement-2 is true, statement-2 is NOT a correct explanation for statement-1.
- C. Statement -1 is true, statement-2 is false.
- D. Statement-1 is false, statement-2 is true.

Answer: C

 [Watch Video Solution](#)

7. The correct statements (*s*) about the compound given below is/are:



- A. The compound is optically active
- B. The compound possesses centre of symmetry
- C. The compound possesses plane of symmetry
- D. The compound possesses axis of symmetry

Answer: A::D

 [Watch Video Solution](#)

8. The correct statement(s) about the compound

$H_3C(OH)HC - CH = CH - CH(OH)CH_3(X)$ is/are

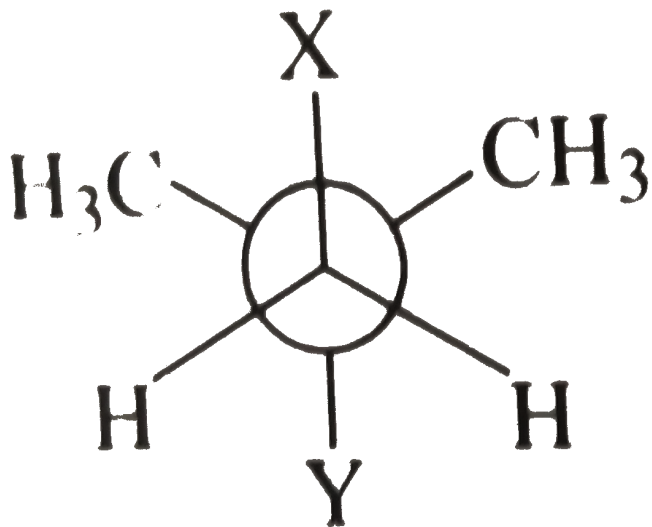
- A. The total number of stereoisomers possible for X is 6.
- B. The total number of diastereomers possible for X is 3.
- C. If the stereochemistry about the double bond in X is trans, the number of enantiomers possible for X is 4.
- D. If the stereochemistry about the double bond in X is cis, the number of enantiomers possible for X is 2.

Answer: A::D

 [Watch Video Solution](#)

9. The total number of cyclic structure as well as stereoisomers possible for a compound with the molecular formula C_5H_{10} is:

10. In the Newman projection for 2, 2- dimethylbutane



X and Y can, respectively, be

A. H and H

B. H and C_2H_5

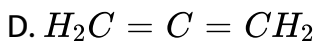
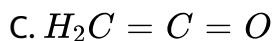
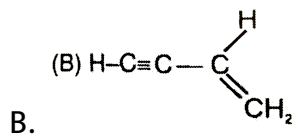
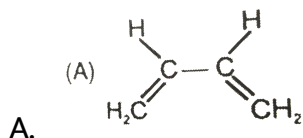
C. C_2H_5 and H

D. CH_3 and CH_3

Answer: A

 Watch Video Solution

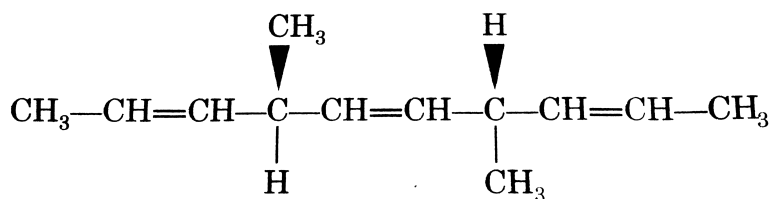
11. Amongst the given option, the compound(s) in which all the atoms are in one plane in all the possible conformations (if any), is/are



Answer: B::C

 Watch Video Solution

12. The number of optically active products obtained from the complete ozonolysis of the given compound



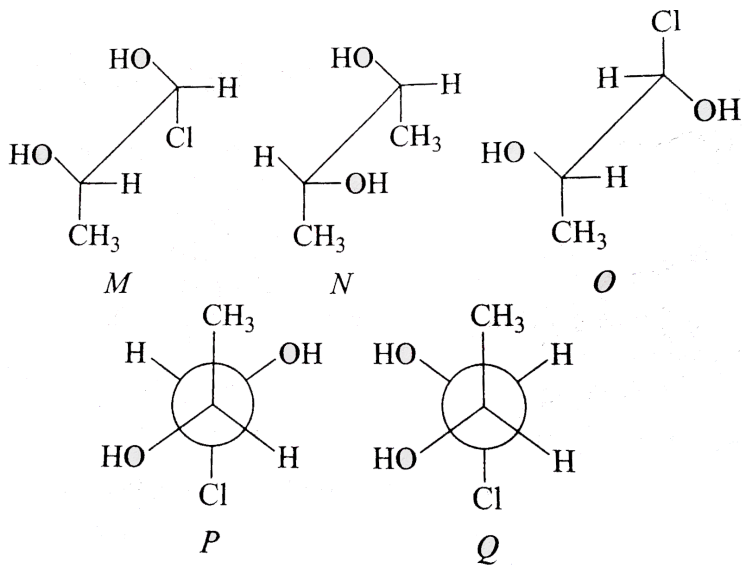
is :

- A. 0
- B. 1
- C. 2
- D. 4

Answer: A

 [Watch Video Solution](#)

13. Which of the given statement(s) about N, O, P and Q with respect to M is/are correct?

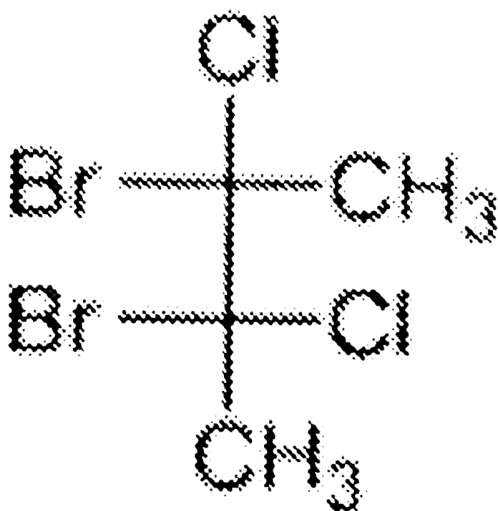


- A. M and N are no-mirror image stereoisomers
- B. M and O are identical
- C. M and P are enantiomers
- D. M and Q are identical

Answer: A::B::C

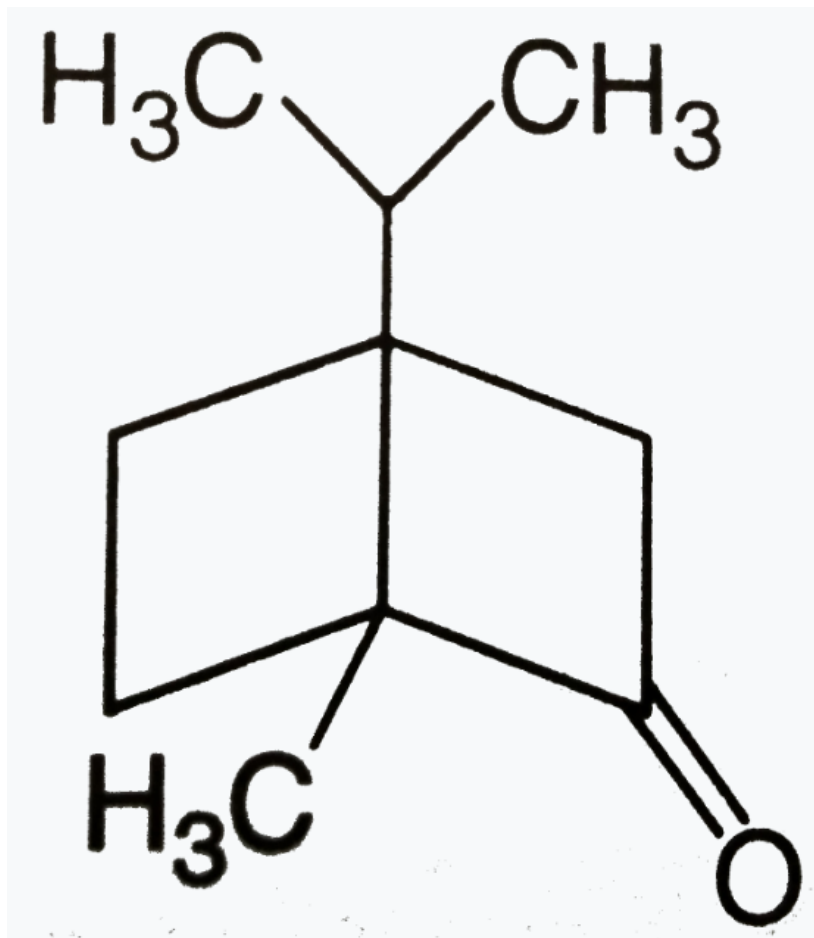
 Watch Video Solution

14. The total number(s) of stable conformers with non-zero dipole moment for the following compound is (are) .



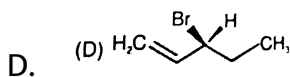
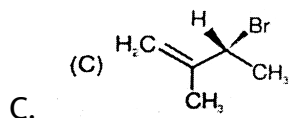
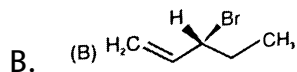
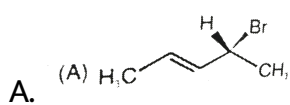
 Watch Video Solution

15. The total number of stereoisomers that can exist for M is:



[▶ Watch Video Solution](#)

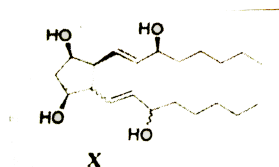
16. Compound (S) that on hydrogenation product (S) optically inactive compound (s) is/are



Answer: B::D

Watch Video Solution

17. For the given compound X, the total number of optically active stereoisomers is.....



- This type of bond indicates that the configuration at the specific carbon and the geometry of the double bond is fixed
- This type of bond indicates that the configuration at the specific carbon and the geometry of the double bond is NOT fixed

View Text Solution

1. Racemic mixture is formed by mixing two:

- A. Isomeric compounds
- B. Chiral compounds
- C. Meso compound
- D. Optical isomers

Answer: D

 [Watch Video Solution](#)

2. Which of the following does not show geometrical isomerism?

- A. 1, 2-Dichloro-1-pentene
- B. 1, 3-Dichloro-2-pentene

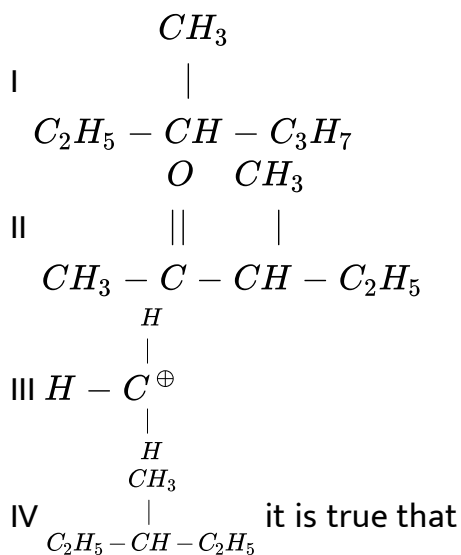
C. 1, 1-Dichloro-1-pentene

D. 1, 4-Dichloro-2-pentene

Answer: C

 Watch Video Solution

3. Among the following four structures I to IV



A. all four are chiral compounds

B. only I and II are chiral compounds

C. only III is a chiral compound

D. only II and IV are chiral compounds

Answer: B

 [Watch Video Solution](#)

4. Which of the following compounds will show meso isomer ?

A. 2-Chlorobutane

B. 2, 3-Dichlorobutane

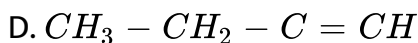
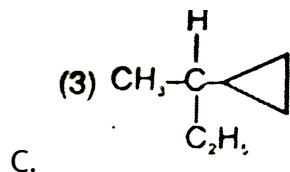
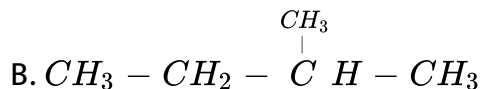
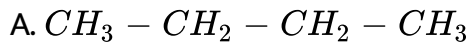
C. 2, 3-Dichloropentane

D. 2-Hydroxypropanoic acid

Answer: B

 [Watch Video Solution](#)

5. Amongst the following compounds, the optically active alkane having lowest molecular mass is:



Answer: C

 Watch Video Solution

6. Which of the following compounds is not chiral?

A. 1-Chloropentane

B. 2-Chloropentane

C. 1-Chloro-2-methylpentane

D. 3-Chloro-2-methylepentane

Answer: A

 [Watch Video Solution](#)

7. The compound 2,3-dichlorobutane exhibits

A. diastereomerism

B. optical-isomerism

C. geometric-isomerism

D. structural-isomerism

Answer: B

 [Watch Video Solution](#)

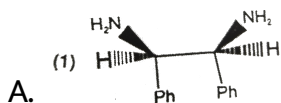
8. Increasing order of stability among the three main conformations (i.e, eclipse, anti, gauche) of 2-fluoroethanol is

- A. eclipse, gauche, anti
- B. gauche, eclipse, anti
- C. eclipse, anti, gauche
- D. anti, gauche, esclipse

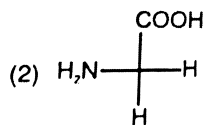
Answer: C

 [View Text Solution](#)

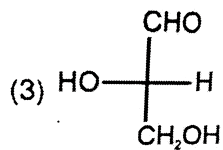
9. Which of the following molecules is expected to rotate the plane polarized light?



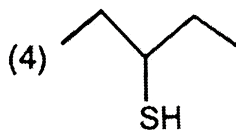
B.



C.



D.



Answer: C

 [Watch Video Solution](#)

10. Which one of the following conformations of cyclohexane is chiral?

A. Chair

B. Boat

C. Twist boat

D. Rigid

Answer: C

 [Watch Video Solution](#)

11. The absolute configuration of



A. R,R

B. R, S

C. S, R

D. S, S

Answer: A

 [Watch Video Solution](#)

12. The alkene that exhibits geometrical isomerism is

A. 2-methyl propene

B. 2-butene

C. 2-methyl-2-butene

D. propene

Answer: B

 [Watch Video Solution](#)

13. 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

Answer: B

 [Watch Video Solution](#)

14. Out of the following the alkene that exhibits optical isomerism is

A. 3-methyl-2-pentene

B. 4-methyl-1-pentene

C. 3-methyl-1-pentene

D. 2-methyl-2-pentene

Answer: C

 [Watch Video Solution](#)

15. Which of the following compounds will exhibit geometrical isomerism?

A. 1-Phenyl-2-butene

B. 3-Phenyl-1-butene

C. 2-Phenyl-1-butene

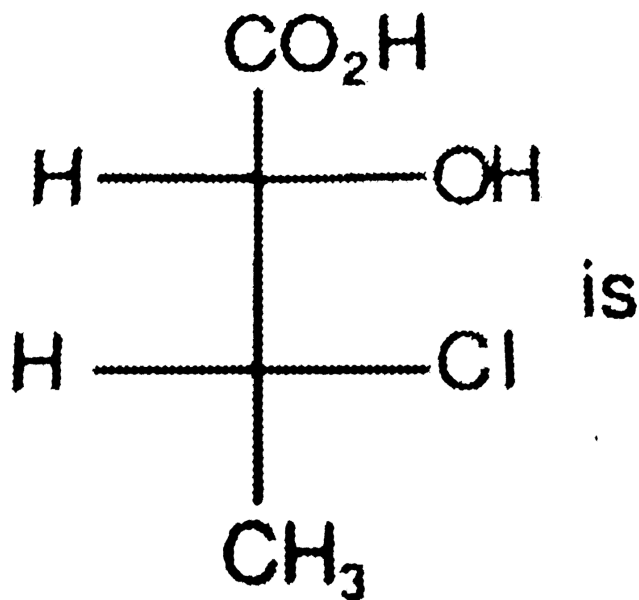
D. 1, 1-Diphenyl-1-propene

Answer: A



Watch Video Solution

16. The absolute configuration of



A. (2S, 3R)

B. (2S, 3S)

C. (2R, 3R)

D. (2R, 3S)

Answer: A

 View Text Solution

EXERCISE (PART -II ONLINE JEE MAIN)

1. Which of the following acids does not exhibit optical isomerism?

- A. Lactic acid
- B. Tartaric acid
- C. Maleic acid
- D. α -amino acid

Answer: C

 [Watch Video Solution](#)

2. The optically inactive compound from the following is :-

- A. 2-chloropentane

B. 2-chloropropanal

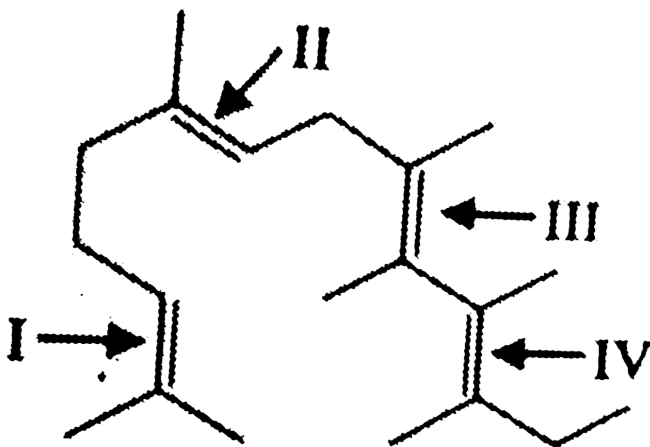
C. 2-chloro-2-methylbutane

D. 2-chlorobutane

Answer: C

 Watch Video Solution

3. In the following structure, the double bonds are marked as I, II, III and IV



Geometrical isomerism is not possible at site (s):

A. I

B. III

C. I and III

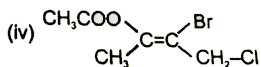
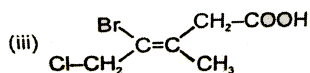
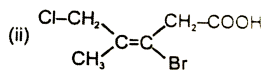
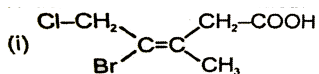
D. I and IV

Answer: A

 [View Text Solution](#)

EXERCISE (ADDITIONAL PROBLEMS FOR SELF PRACTICE (APSP)) PART 1

1. Which is the pair of geometrical isomers :



A. I & ii

B. i & iii

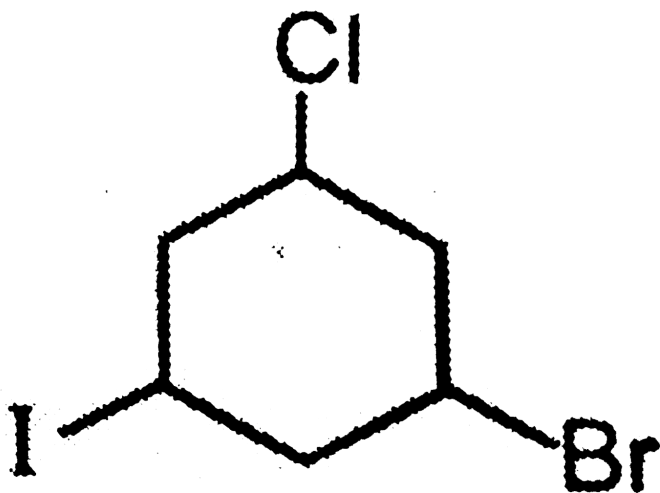
C. iii & iv

D. i & iv

Answer: B

 [View Text Solution](#)

2. How many geometrical isomers are possible for



A. 2

B. 3

C. 4

D. 8

Answer: C



[View Text Solution](#)

3. Which will not show geometrical isomerism ?

A. Maleic acid

B. Fumaric acid

C. Cinnamic acid

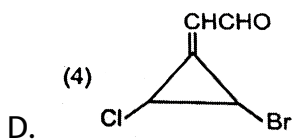
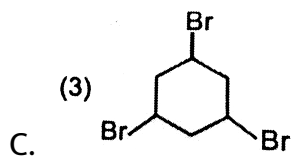
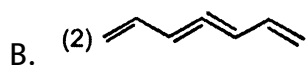
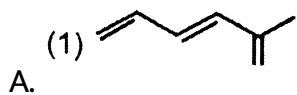
D. Salicylic acid

Answer: D



[View Text Solution](#)

4. Which of the following has highest number of geometrical isomers.



Answer: D

 [View Text Solution](#)

5. How many position isomers are possible of trichlorocyclohexane which can show geometrical isomerism.

A. 2

B. 3

C. 4

D. 6

Answer: B



[Watch Video Solution](#)

6. The total number of stereoisomers of 2, 3-pentanediol are

A. four

B. two

C. six

D. three

Answer: A

 [Watch Video Solution](#)

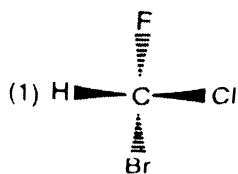
7. The most stable form of meso-tartaric acid is

- A. Gauche form
- B. Anti form
- C. Fully eclipsed form
- D. Partially eclipsed

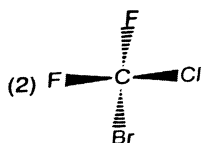
Answer: B

 [View Text Solution](#)

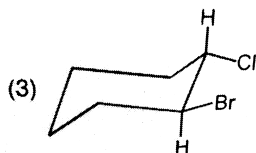
8. Which of the following molecules possess a plane of symmetry?



A.



B.



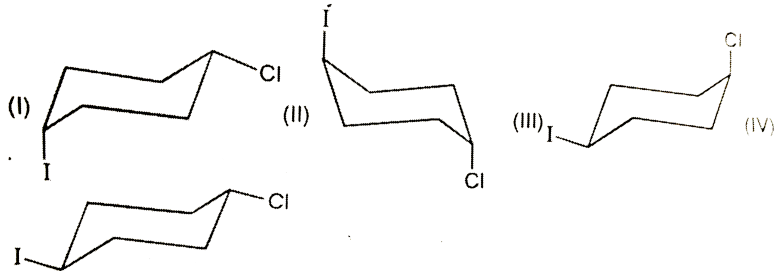
C.

D. More than one of these

Answer: B

 [View Text Solution](#)

9. Select correct order of stability of different forms of 1-Chloro-4-iodo cyclohexane.



A. $IV > III > I > II$

B. $IV > I > III > II$

C. $III > II > I > IV$

D. $II > I > III > IV$

Answer: A

 [View Text Solution](#)

10. Which of the following statement is incorrect ?

A. Diastereomers can be chiral.

B. Diastereomers can be achiral.

- C. Enantiomers have similar physical and chemical properties always.
- D. Presence of plane of symmetry confirms optical inactivity.

Answer: C

 [View Text Solution](#)

11. Which type of isomerism is shown by 2, 3-Dichlorobutane ?

- A. Tautomerism
- B. Optical
- C. Geometrical
- D. Functional isomerism

Answer: B

 [Watch Video Solution](#)

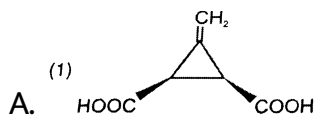
12. Increasing order of stability among the three main conformations of 2-Fluoroethanol is :

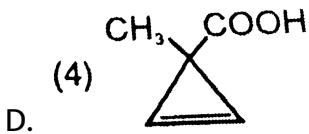
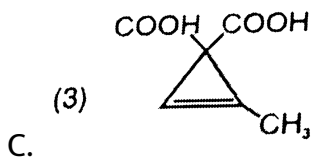
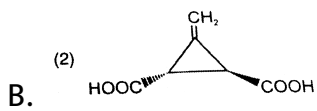
- A. eclipse, gauche, anti
- B. gauche, eclipse, anti
- C. eclipse, anti, gauche
- D. anti, gauche, esclipse

Answer: C

 [View Text Solution](#)

13. The unusually stable three membered unsaturated compound, Feist acid was found to be chiral in nature. Its structure is

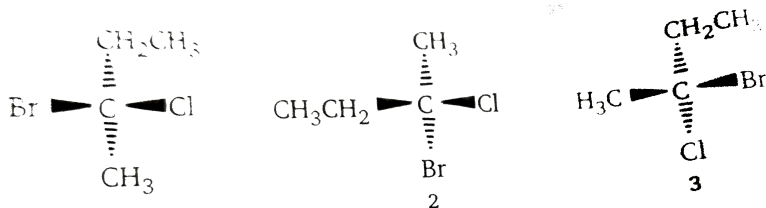




Answer: B

Watch Video Solution

14. Which of the following depict the same ?



A. I and II

B. I and III

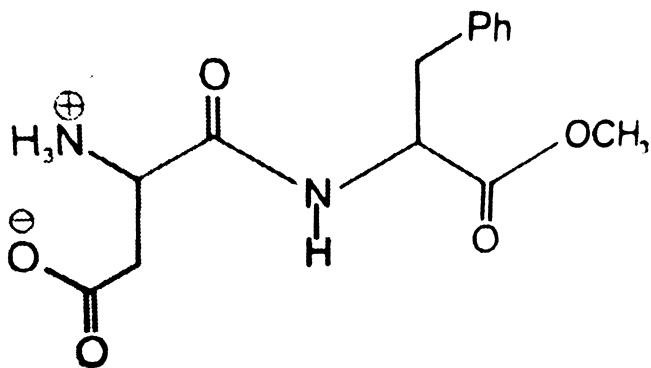
C. II and III

D. I, II and III

Answer: D

 Watch Video Solution

15. The total number of chiral centres present in the artificial sweetener Aspartam are



A. 1

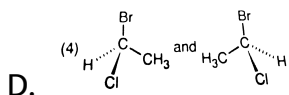
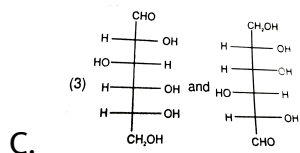
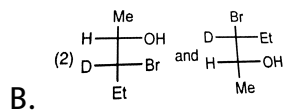
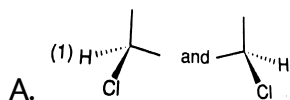
B. 2

C. 3

Answer: B



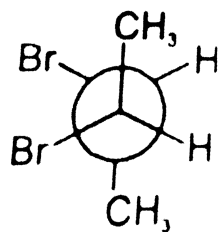
16. Which pair is identical ?1



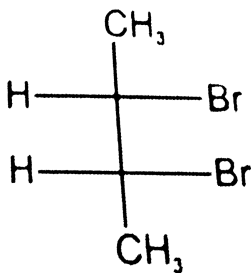
Answer: A



17. Identify the relation between molecules given in Newman and Fischer projections.



II



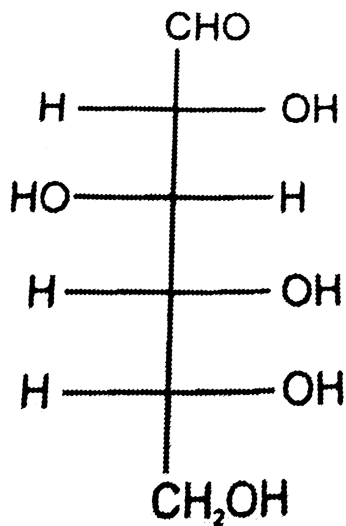
III

- A. identical.
- B. Enantiomers
- C. Diastereomers
- D. Conformers

Answer: C

 [View Text Solution](#)

18. The correct IUPAC name of D-Glucose is :



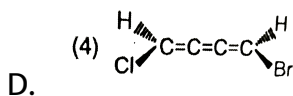
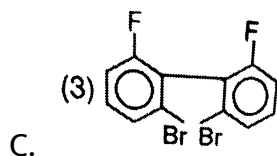
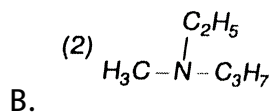
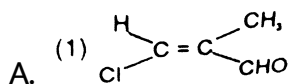
(D-Glucose)

- A. (2D, 3D, 4L, 5D)-2, 3, 4, 5, 6-pentahydroxyhexanal
- B. D-2, 3, 4, 5, 6-pentahydroxyhexanal
- C. 6-oxo-(2D, 3L, 4D, 5D)-2, 3, 4, 5, 6-pentahydroxohexane
- D. (2D, 3L, 4D, 5D)-2, 3, 4, 5, 6-pentahydroxyhexanal

Answer: D

 [View Text Solution](#)

19. Which of the following species will be optically active ?



Answer: C

 [View Text Solution](#)

20. Which of the following compounds exhibits stereoisomerism?

A. 2-methylbutene-1

B. 3-methylbutyne-1

C. 3-methylbutanoic acid

D. 2-methylbutanoic acid

Answer: D

 [Watch Video Solution](#)

21. The isomeric alcohol which has a chiral carbon atom is :

A. n-pentyl alcohol

B. neopentyl alcohol

C. pentan-3-ol

D. pentan-2-ol

Answer: D

 [Watch Video Solution](#)

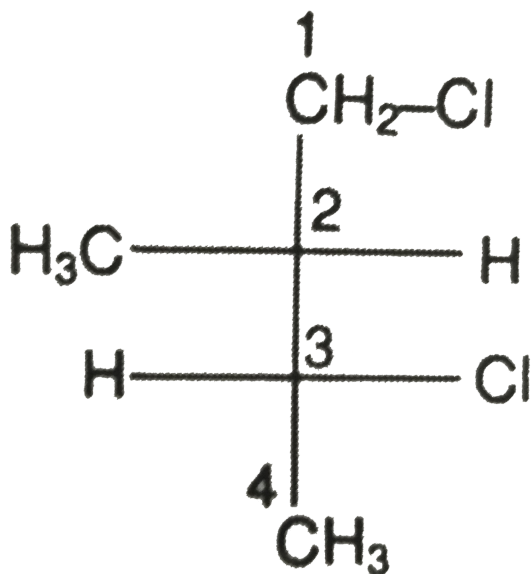
22. Which of the following conformer of n-Butane is associated with maximum potential energy.

- A. Gauch
- B. partially eclipsed
- C. Anti
- D. Fully eclipsed

Answer: D

 [View Text Solution](#)

23. The R/S designation for the following stereoisomers of 1,3-dichloro-2-methylbutane is :

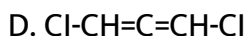
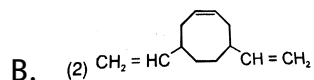


- A. 2S, 3R
- B. 2S, 3S
- C. 2R, 3S
- D. 2R, 3R

Answer: D

 [Watch Video Solution](#)

24. Which of the following will not show geometrical isomerism?



Answer: D



[View Text Solution](#)

25. The racemic mixture in liquid/gaseous state will have

A. Same boiling point as that of its pure enantiomer

B. Same refractive index as that of its pure enantiomer.

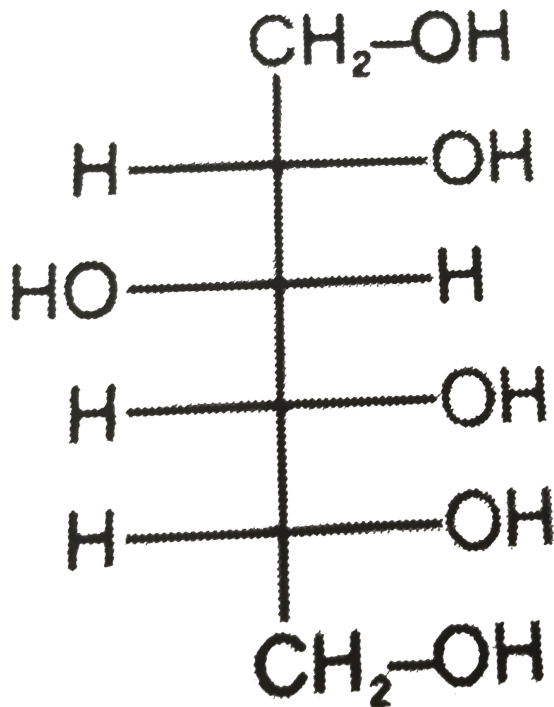
C. Same density as that of its pure enantiomer

D. All of the above

Answer: D

 [View Text Solution](#)

26. True statement(s) regarding the given molecule is/are



A. This is optically inactive

- B. If the last chiral carbon configuration is changed then it is converted from dextro to laevo.
- C. By changing the configuration at C_3 or C_4 carbon, it is converted into meso compound.
- D. Its all diastereomers have zero optical rotation.

Answer: C



View Text Solution

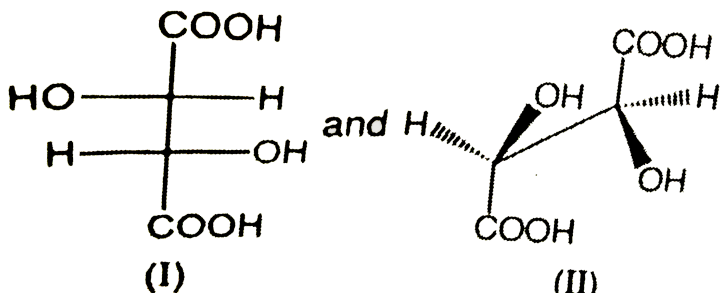
27. The most stable conformation of cyclohexane is :

- A. Chair
- B. Boat
- C. Half chair
- D. Twist boat

Answer: A

 Watch Video Solution

28. The two compounds (I) and (II) are related as :

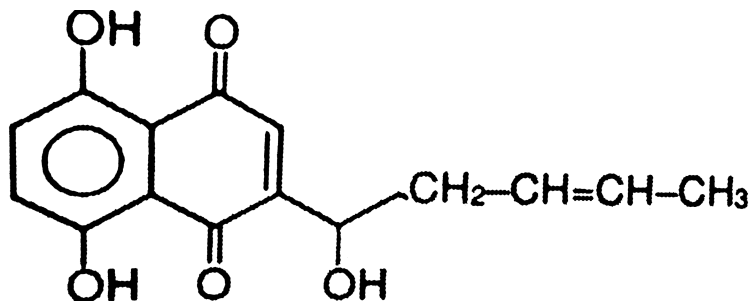


- A. Enantiomers
- B. Anomers
- C. Diastereomers
- D. Identical

Answer: D

 View Text Solution

29. How many stereoisomers of a drug for healing the wounds are possible & how many of them are optically active ?



A. 4, 2

B. 4, 4

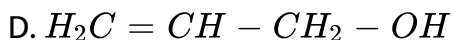
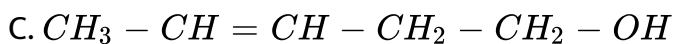
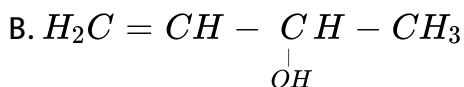
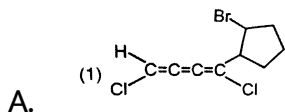
C. 8, 4

D. 16, 4

Answer: B

 [Watch Video Solution](#)

30. Which of the following compounds is capable of showing geometrical, optical and conformational isomerism.



Answer: A



View Text Solution

EXERCISE (PART II : NATIONAL STANDARD EXAMINATION IN CHEMISTRY
(NSEC) STAGE-1)

1. Which of the following is a chiral molecule ?

A. 2,4-dimethyl-1, 3-hexadiene

B. 2,4-octadiene

C. 2,3-octadiene

D. None of these

Answer: C

 [Watch Video Solution](#)

2. Which of the following has the highest potential energy for pentane?

A. anti conformation

B. eclipsed conformation

C. gauche conformation

D. all have same potential energy

Answer: B



[View Text Solution](#)

3. Which of the following does not exist as geometric isomers ?

A. 3-bromo-2-methyl-2-butene

B. cyclodecene

C. 3-bromo-1-Chloro-1-pentene

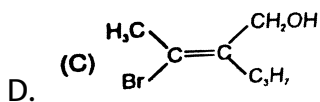
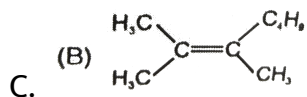
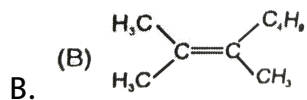
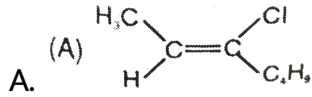
D. 3-methyl-2-pentene

Answer: A



[View Text Solution](#)

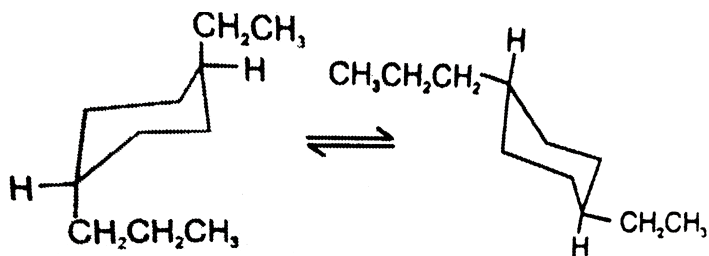
4. Which of the following is an E isomer ?



Answer: C

 [View Text Solution](#)

5. Consider the following equilibrium,



Which of the following best describes the equilibrium constant K of this interconversion ?

A. $K < 1$

B. $K > 1$

C. $K = 1$

D. K cannot be deduced from this information

Answer: B

 [View Text Solution](#)

6. Which of the following best describes the stability of the cis and trans isomers of 1, 1, 3, 5 tetraethylcyclohexan ?

A. The trans isomer is more stable than the cis.

B. The cis isomer is more stable than the trans.

C. Both have the same stability

D. The information given is not sufficient to deduce the stability of the isomers.

Answer: B

 [View Text Solution](#)

7. Which of the following has the greatest angle strain ?

- A. methyl cyclobutane
- B. methyl cyclopentane
- C. methyl cyclohexane
- D. methyl cyclopropane

Answer: D

 [View Text Solution](#)

8. Which would be the most stable conformation of trans-1-ethyl-3-methylcyclohexane ?

- A. equatorial (methyl) -equatorial (ethyl)
- B. axial (methyl) -equatorial (ethyl)
- C. axial (methyl)-axial (ethyl)
- D. axial (ethyl)-equatorial (methyl)

Answer: B



[View Text Solution](#)

9. The method used to distinguish optical isomers is

- A. polarimetry
- B. spectroscopy
- C. chemical analysis

D. boiling point determination

Answer: A

 [View Text Solution](#)

10. Isomers which can be interconverted through rotation around a single bond are

A. Enantiomers

B. diastereomers

C. conformers

D. positional isomers

Answer: C

 [Watch Video Solution](#)

11. Which of the following will have least hindered rotation about carbon-carbon bond?

A. ethylene

B. hexachloroethane

C. ethane

D. acetylene

Answer: C



[Watch Video Solution](#)

12. In cis- trans isomerism, the compound generally

A. contains a triple bond

B. contains a double bond

C. possesses an asymmetric carbon atom

D. rotates the plane of polarized light.

Answer: B

 [View Text Solution](#)

13. The number of optical isomers for a compound having two similar asymmetric carbon atoms in the molecule is given as

A. 2

B. 2^2

C. $> 2^2$

D. $< 2^2$

Answer: D

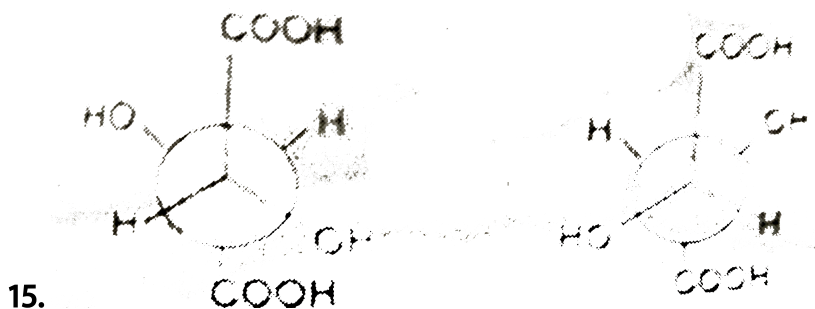
 [View Text Solution](#)

14. Optical activity of a substance is due to

- A. presence of aldehyde group
- B. high molecular weight
- C. chemical reactivity
- D. presence of an asymmetric carbon atom

Answer: D

 [View Text Solution](#)



The above pair represents

- A. Enantiomers

B. diastereomers

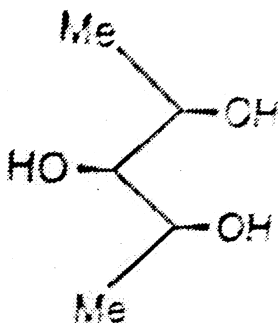
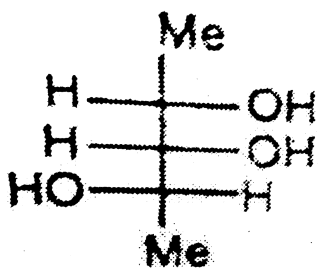
C. identical compounds

D. positional isomers

Answer: C

 [View Text Solution](#)

16. The following stereoisomers are



A. Enantiomers

B. epimers

C. Diastereomers

D. None of these

Answer: C

 [View Text Solution](#)

17. The compound that has the highest dipole moment is

A. cis-1, 2-dichloroethene

B. trans-1, 2-dichloroethene

C. cis-1-bromo-2-chloroethene

D. trans-1-bromo-2-chloroethene

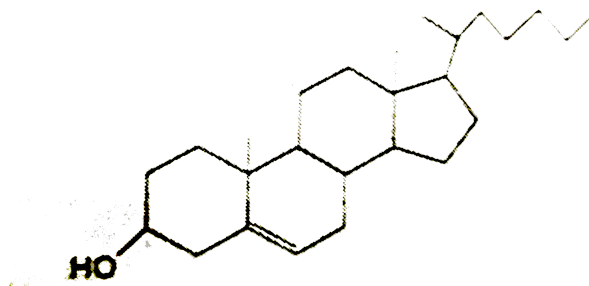
Answer: A

 [View Text Solution](#)

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

 Watch Video Solution

19. The number of theoretically possible stereoisomers in the following steroid is



A. 256

B. 64

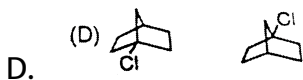
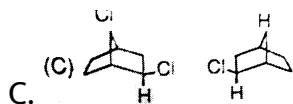
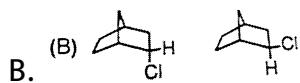
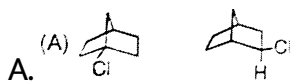
C. 8

D. 16

Answer: A

 [View Text Solution](#)

20. The diastereomeric pair in the following four pairs of compounds is



Answer: B

 [View Text Solution](#)

21. The compound that will not be stable to exhibit stereoisomerism is :

A. 1,2-Dibromocyclopropane

B. Lactic acid

C. 1-Bromopropene

D. 1-Methylcyclopropane.

Answer: D



[View Text Solution](#)

22. The number of stereoisomers of butane -2, 3-diol is

A. four

B. two

C. six

D. three

Answer: D

 [Watch Video Solution](#)

23. A compound is chiral even if

A. a mirror plane is present

B. a centre of inversion exists

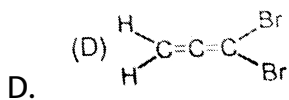
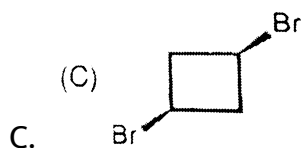
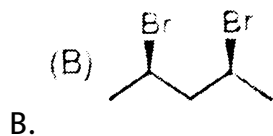
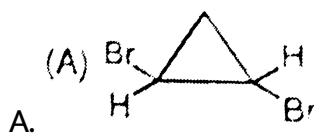
C. a rotation axis exists

D. an improper rotation axis is present

Answer: C

 [View Text Solution](#)

24. Identify the chiral species among the following :1



Answer: A

 [View Text Solution](#)

25. The achiral species among the following is :

A. a car

B. a screw driver

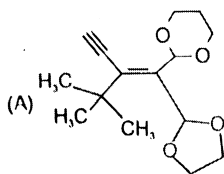
C. a screw

D. a hand

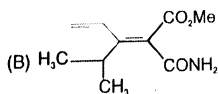
Answer: B

 **Watch Video Solution**

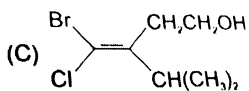
26. Which one of the following compounds has (Z) configuration about the C-C double bond ?



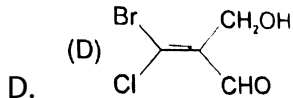
A.



B.



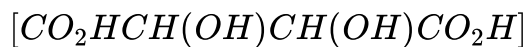
C.



Answer: B

 [View Text Solution](#)

27. The following symmetry element is present in the 'd' as well as the 'l' form of Tartaric acid



- A. centre of symmetry
- B. axis of symmetry (C_2)
- C. plane of symmetry
- D. None

Answer: B

 [View Text Solution](#)

28. Conformational changes in ethane molecule leads the change in:

A. torsional angle

B. bond angle

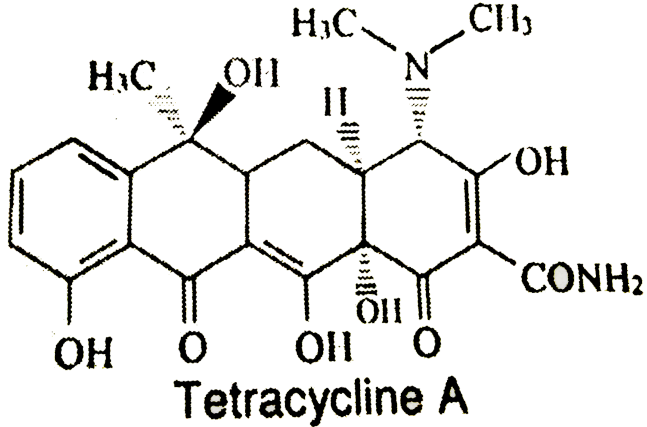
C. bond length

D. All of the above

Answer: A

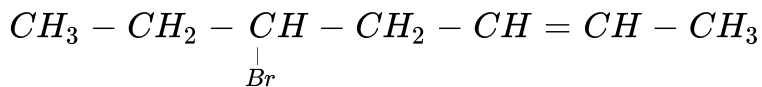
 [Watch Video Solution](#)

29. How many chiral carbon atoms does Tetracycline A (a broad spectrum antibiotic) have ?



 [View Text Solution](#)

30. How many stereoisomers does the following compound have ?



- A. None
- B. 2
- C. 4
- D. 6

Answer: C



[View Text Solution](#)

31. For cyclohexane, which of the following factors does not make the boat conformation less stable than the chair conformation

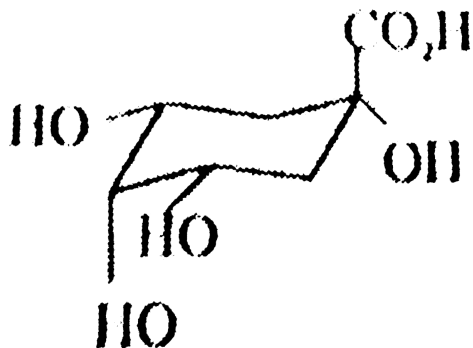
- A. 1,3-diaxial interactions
- B. flag pole interactions
- C. angle strain
- D. torsional strain

Answer: A



[View Text Solution](#)

32. The following molecule has a



A. centre of symmetry

B. plane of symmetry

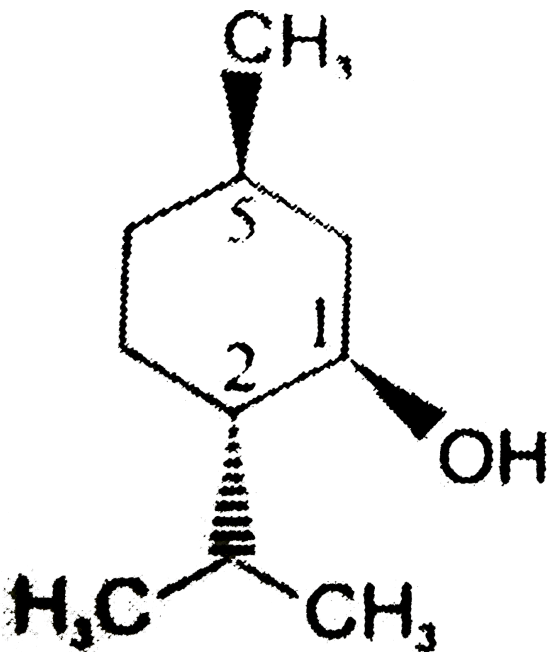
C. axis of symmetry

D. None of the above

Answer: B

 [View Text Solution](#)

33. The absolute configurations of the chiral centres 1, 2 and 5 in the following molecule are



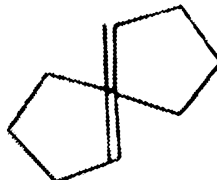
- A. 1R, 2R, 5R
- B. 1S, 2S, 5S
- C. 1R, 2S, 5R
- D. 1S, 2R, 5S

Answer: C

34. The following structures are



(A) enantiomers



(B) identical

A. Enantiomers

B. identical

C. Diastereomers

D. rotarmers

Answer: C

35. The isomeric alcohol which has a chiral carbon atom is :

- A. n-butyl alcohol
- B. iso-butyl alcohol
- C. sec-butyl alcohol
- D. tert-butyl alcohol

Answer: C

 [Watch Video Solution](#)

36. Geometrical isomerism results because molecule has

- A. rotates the plane of polarized light
- B. has a plane of symmetry
- C. has a centre of symmetry
- D. has two dissimilar groups attached to both ends of double bond

Answer: D

 [Watch Video Solution](#)

37. The pair of enantiomers among the following compound is:



 [Watch Video Solution](#)

38. The number of all type of isomers of chlorobutane is :

A. 2

B. 4

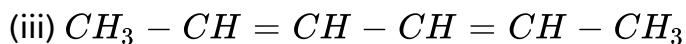
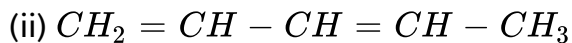
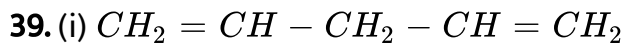
C. 6

D. 5

Answer: D



Watch Video Solution



The numbers of possible geometrical isomers for the above compounds are

A. 0, 2, 4

B. 2, 2, 4

C. 0, 3, 3

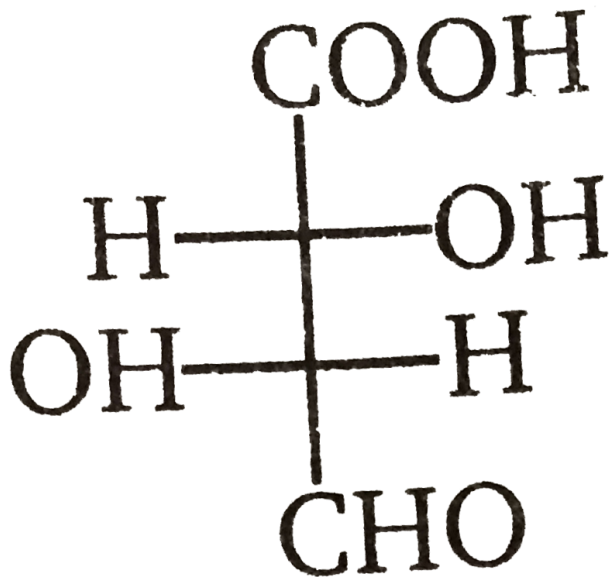
D. 0, 2, 3

Answer: D



View Text Solution

40. The configurations of the carbon atoms C_2 and C_3 in the following compound respectively



A. R, R

B. S, S

C. R, S

D. S, R

Answer: A

 [Watch Video Solution](#)

41. The compound that is chiral

- A. 3-Methyl-3-hexane
- B. 1-Chloro-4-methylcyclohexane
- C. 2-Phenylpentane
- D. 1,3-Diisopropylbenzene

Answer: C

 [View Text Solution](#)

42. The number of stereoisomers of compound $CH_3 - CH = CH - CH(Br)CH_3$ is :

- A. 2

B. 3

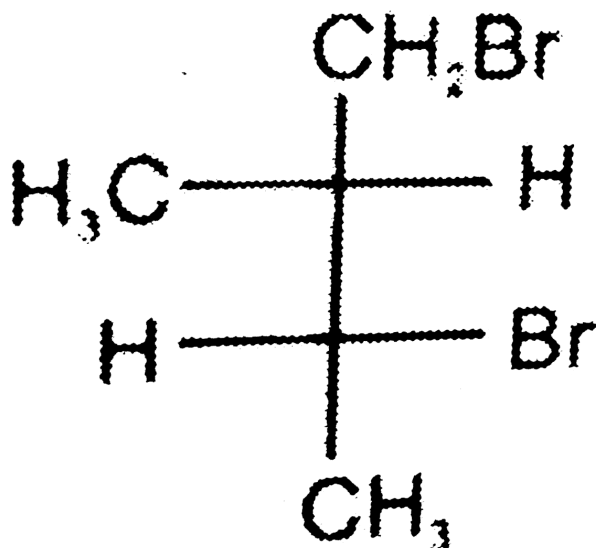
C. 4

D. 6

Answer: C

 [View Text Solution](#)

43. The R/S designation for the following stereoisomers of 1,3-Dibromo-2-methylbutane is :



A. 2R, 3R

B. 2R, 3S

C. 2S, 3R

D. 2S, 3S

Answer: A



[View Text Solution](#)

44. Among the isomers of Dimethylcyclohexanes, the chiral ones are

A. 1, 2-trans and 1,3-cis

B. 1, 2-cis and 1,3-trans

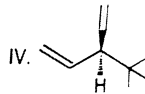
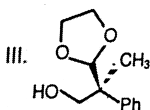
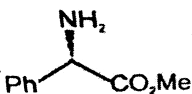
C. 1, 3-trans and 1, 4-tans

D. 1, 2-trans and 1, 3-trans

Answer: D

 [View Text Solution](#)

45. Which one of the following compound has R configuration ?



A. I

B. II

C. III

D. IV

Answer: D

 [View Text Solution](#)

46. The number of optically active stereoisomers of tartaric acid, (HOOC.CHOH.CHOH.COOH) is

A. 4

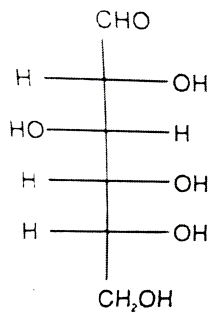
B. 2

C. 1

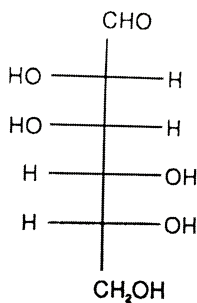
D. 3

Answer: B

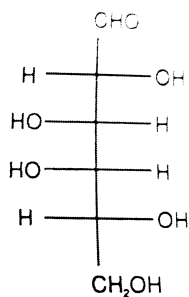
 [View Text Solution](#)



D-Glucose



D-Mannose



D-Galactose

47.

The above structures are related to each other as

A. identical substance

B. diastereomers

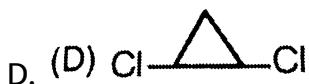
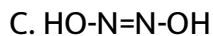
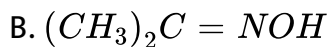
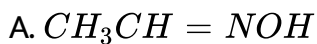
C. enantiomers

D. epimers

Answer: B

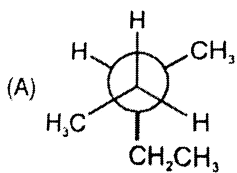
 [View Text Solution](#)

48. Which of the following molecules cannot show geometric isomerism ?

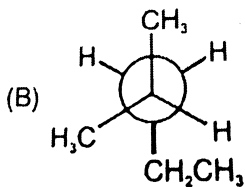


Answer: B

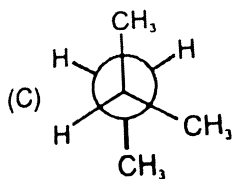
49. 2-methylpentane is :



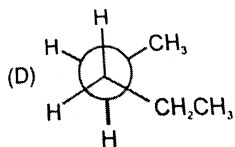
A.



B.



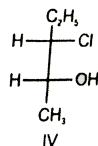
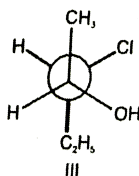
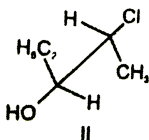
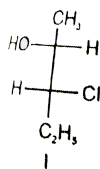
C.



D.

Answer: B

50. The two projection formulae that represent a pair of enantiomers are.



A. I and II

B. III and IV

C. I and III

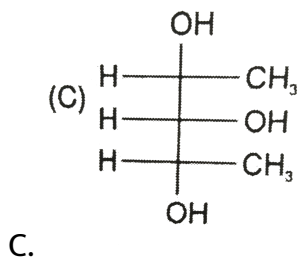
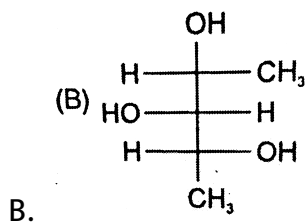
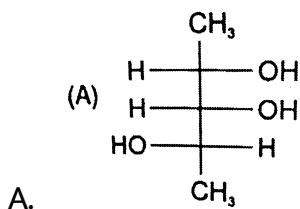
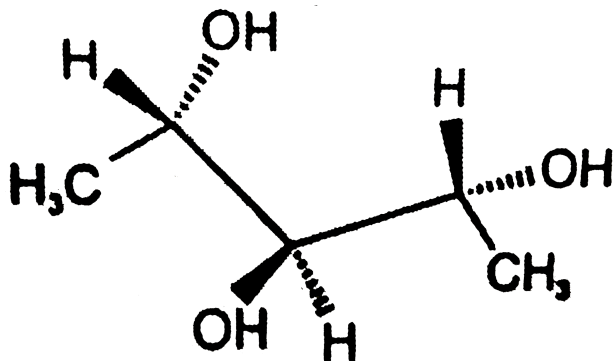
D. II and IV

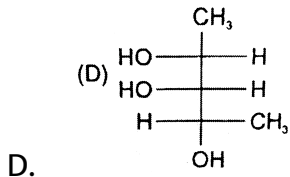
Answer: C



View Text Solution

51. The Fischer projection formula that represents the following compounds is

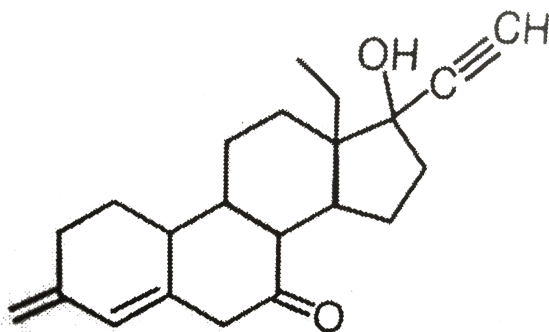




Answer: D

[View Text Solution](#)

52. Levonorgestrel is a commonly used contraceptive. The number of chiral centres present in this molecule is:



Levonorgestrel

A. 4

B. 5

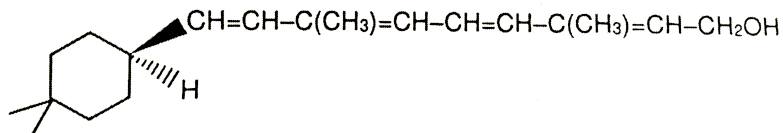
C. 6

D. 7

Answer: C

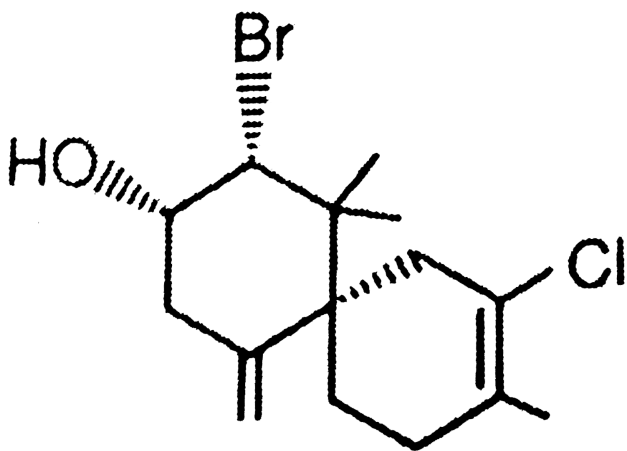
 [View Text Solution](#)

53. The number of stereoisomers possible for the following compound.



 [View Text Solution](#)

54. The number of quaternary and chiral carbon atoms present in elatol, isolated from an algae are respectively



Elatol

A. 2, 3

B. 4, 2

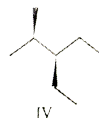
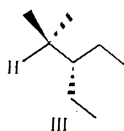
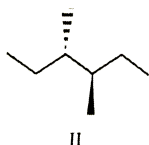
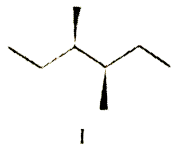
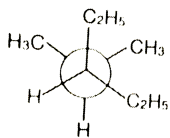
C. 3, 2

D. 1, 3

Answer: A

 [View Text Solution](#)

55. The Newman projection shown is the same as



A. I and IV

B. II and III

C. III and IV

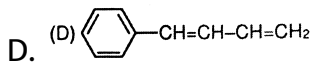
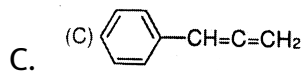
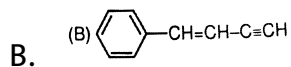
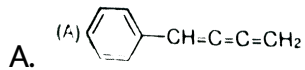
D. I and II

Answer: C



View Text Solution

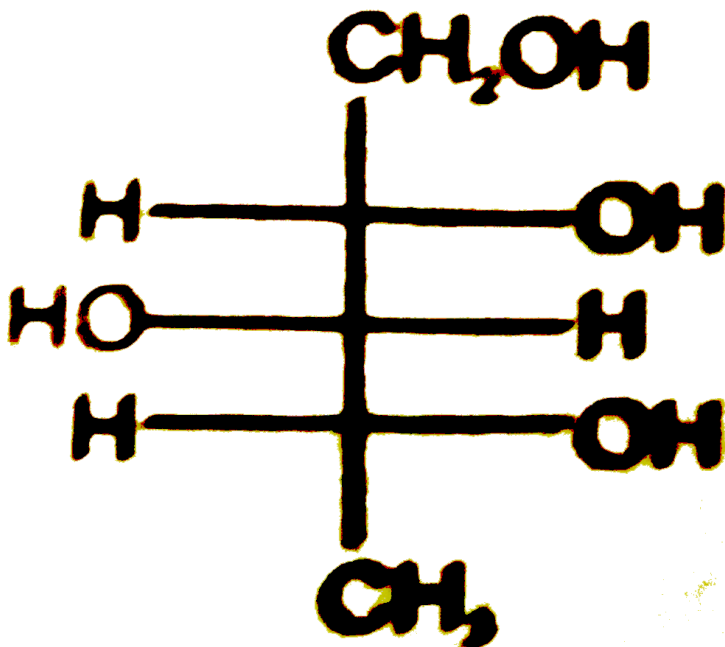
56. The molecule in which all atoms are not coplanar is



Answer: C

 [View Text Solution](#)

EXERCISE (PART III : PRACTICE TEST-2 (IIT-JEE (ADVANCED PATTERN)))



1. _____ is a Fischer projection of one of _____ stereoisomers ?

A. 2

B. 4

C. 8

D. 12

Answer: C

 [View Text Solution](#)

2. Which of the following has maximum number of two-fold axis of symmetry.

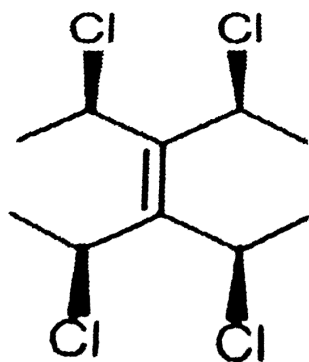
- A. Ethylene
- B. Cyclopropane
- C. Cyclobutane
- D. Benzene

Answer: D

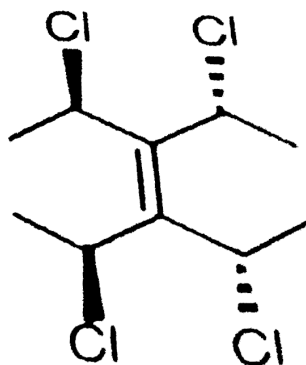


[View Text Solution](#)

3. The following compounds are :



(I)



(II)

- A. Enantiomer
- B. identical
- C. Diastereomers
- D. Geometrical isomer

Answer: C

 [View Text Solution](#)

4. Which conformation of Bicyclo [2, 2, 2]-octane is more stable?

A. Chair

B. Half Boat

C. Boat

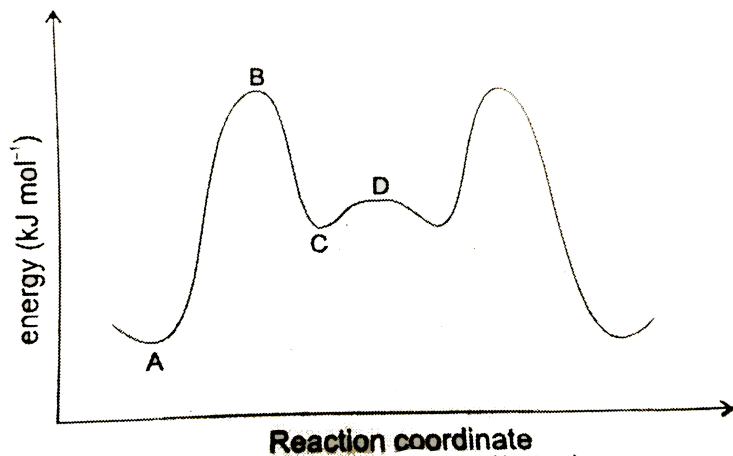
D. Twisted boat

Answer: C



[View Text Solution](#)

5. In the given energy graph for cyclohexane, the point "B" represent.



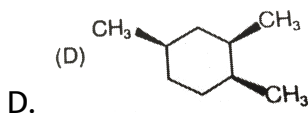
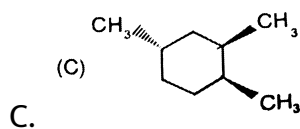
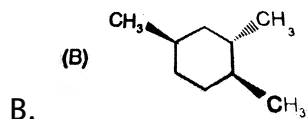
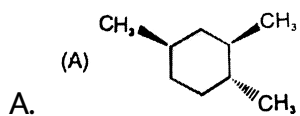
- A. Chair conformation
- B. Half chair conformation
- C. Twist boat conformation
- D. Boat conformation

Answer: B



[View Text Solution](#)

6. Identify the most stable stereoisomer :

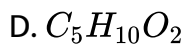
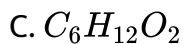
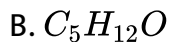


Answer: A

 [View Text Solution](#)

7. Molecular formula of smallest ester which contain one chiral carbon is :

A. $C_4H_8O_2$



Answer: D

 [View Text Solution](#)

8. Which of the following has/have potential energy diagram for conformations closely resembling to ethane.

(i) 2, 2-Dimethylpropane (II) 2, 3-Dimethylbutane

(III) 2,2,3-Trimethylbutane (IV) 2,2-Dimethylbutane

A. I, III, IV

B. I, II, IV

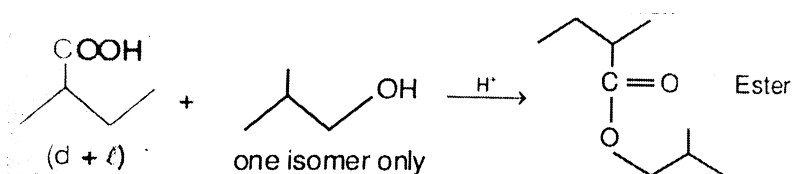
C. I, II, III

D. II, III, IV

Answer: A

 [View Text Solution](#)

9. Which statement(s) is/are correct for the given reaction and compounds.



- A. Two esters are formed.
- B. All the esters are chiral.
- C. Both esters are diastereomers.
- D. Racemic mixture is formed as a product.

Answer: A::B::D

 [View Text Solution](#)

10. Intra-molecular H-bonding is possible in which of the following.

- A. cis-cyclohexane-1,2-diol
- B. trans-cyclohexane-1,2-diol
- C. cis-cyclohexane-1,3-diol
- D. cis-cyclohexane-1,4-diol

Answer: A::B::C::D

 [View Text Solution](#)

11. Which of the following statement(s) is/are correct ?

- A. Anti conformation of $H_2N - CH_2 - CH_2 - NH_2$ is more stable than its Gauche conformation.

B. Gauche conformation of $HO - CH_2 - CH_2F$ is more stable than its anti conformation temperature.

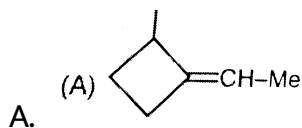
C. On increasing temperature, dipole moment of pure $F - CH_2 - CH_2 - F$ increases.

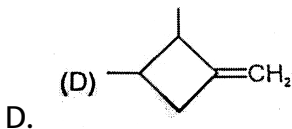
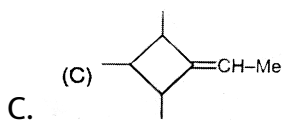
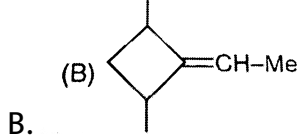
D. In case of 1,4-Dihydroxycyclohexane chair conformer is most stable.

Answer: B::C

 [View Text Solution](#)

12. Which of the following compounds can show Optical isomerism as well as geometrical isomerism?

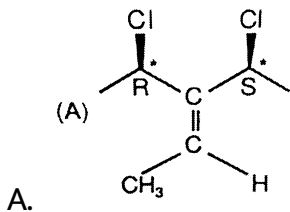


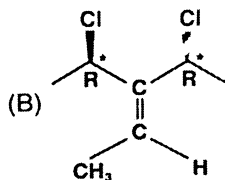


Answer: A::B::C::D

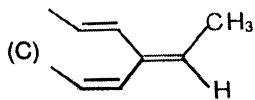
 [View Text Solution](#)

13. Which of the following compounds can show geometrical isomerism.

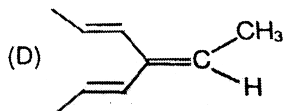




B.



C.

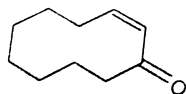


D.

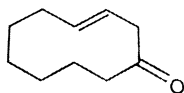
Answer: A::C::D

 [View Text Solution](#)

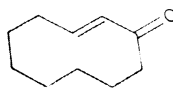
14. Which of the following statement(s) is/are true about the following compounds?



(I)



(II)



(III)

A. (I) and (III) are identical

B. (I) and (III) are geometrical diastereomers

C. (I) and (II) are structural isomers.

D. (II) and (III) structural isomers.

Answer: B::C::D

 [View Text Solution](#)

15. An organic compound P exists in two enantiomeric forms, which have specific optical rotation values $[\alpha] = \pm 100^\circ$. The optical rotation of a mixture of these two enantiomers is -50° . Calculate the percentage of that enantiomer which is in lower concentration in the mixture.

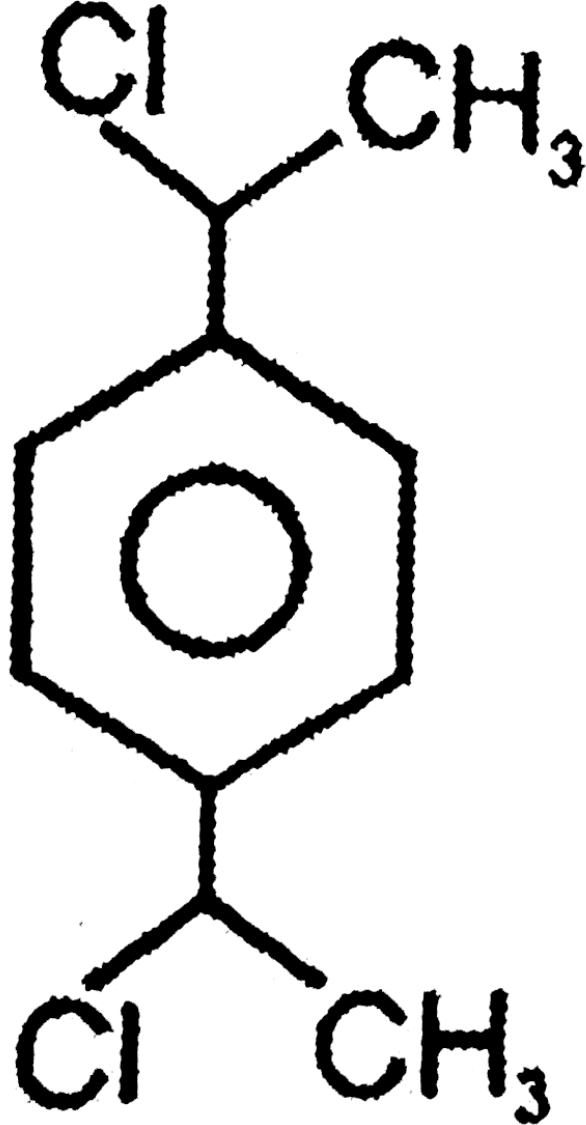
 [View Text Solution](#)

16. Total number of meso forms possible for 1,2,3,4 - Tetrachlorocyclobutane.



[Watch Video Solution](#)

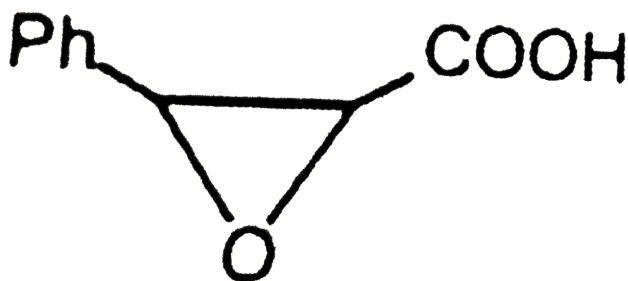
17. If "A" is total number of meso compounds and "B" is total number of optically active isomers, then find (A+B) for



 [View Text Solution](#)

18. Sum of total no. of stereoisomers (A) and total no. of fractions (B)

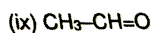
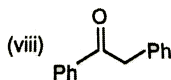
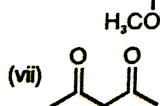
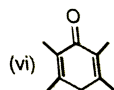
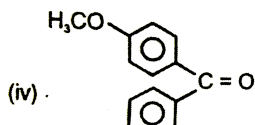
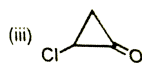
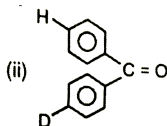
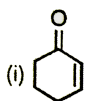
for the compound



is.

 [View Text Solution](#)

19. How many of the following carbonyl compound will give two products after reaction with NH_2OH :



 [View Text Solution](#)

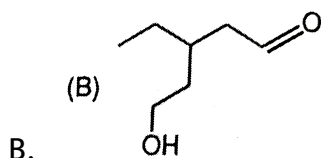
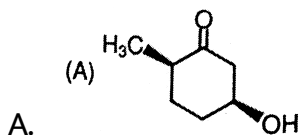
20. Total number of stereoisomers of truxillic acid are :

 [View Text Solution](#)

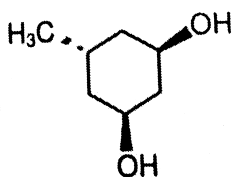
21. An unknown substance (P) shows optical activity. This optical activity disappears on treatment of (P) with acidified $KMnO_4$ (which produces Q), or with heated copper (which produces R). (P) Produces silver mirror with Tollen's reagent, thereby producing (S). (S) is chiral.

Based on this information, answer the following questions :

(P) may be-

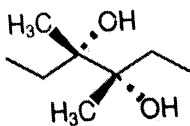


(C)



C.

(D)



D.

Answer: B

 [View Text Solution](#)

22. An unknown substance (P) shows optical activity. This optical activity disappears on treatment of (P) with acidified $KMnO_4$ (which produces Q), or with heated copper (which produces R). (P) Produces silver mirror with Tollen's reagent, thereby producing (S). (S) is chiral.

Based on this information, answer the following questions :

Number of stereoisomers possible for (P) is-

A. 2

B. 3

C. 4

D. 8

Answer: A



View Text Solution