NEET REVISION SERIES

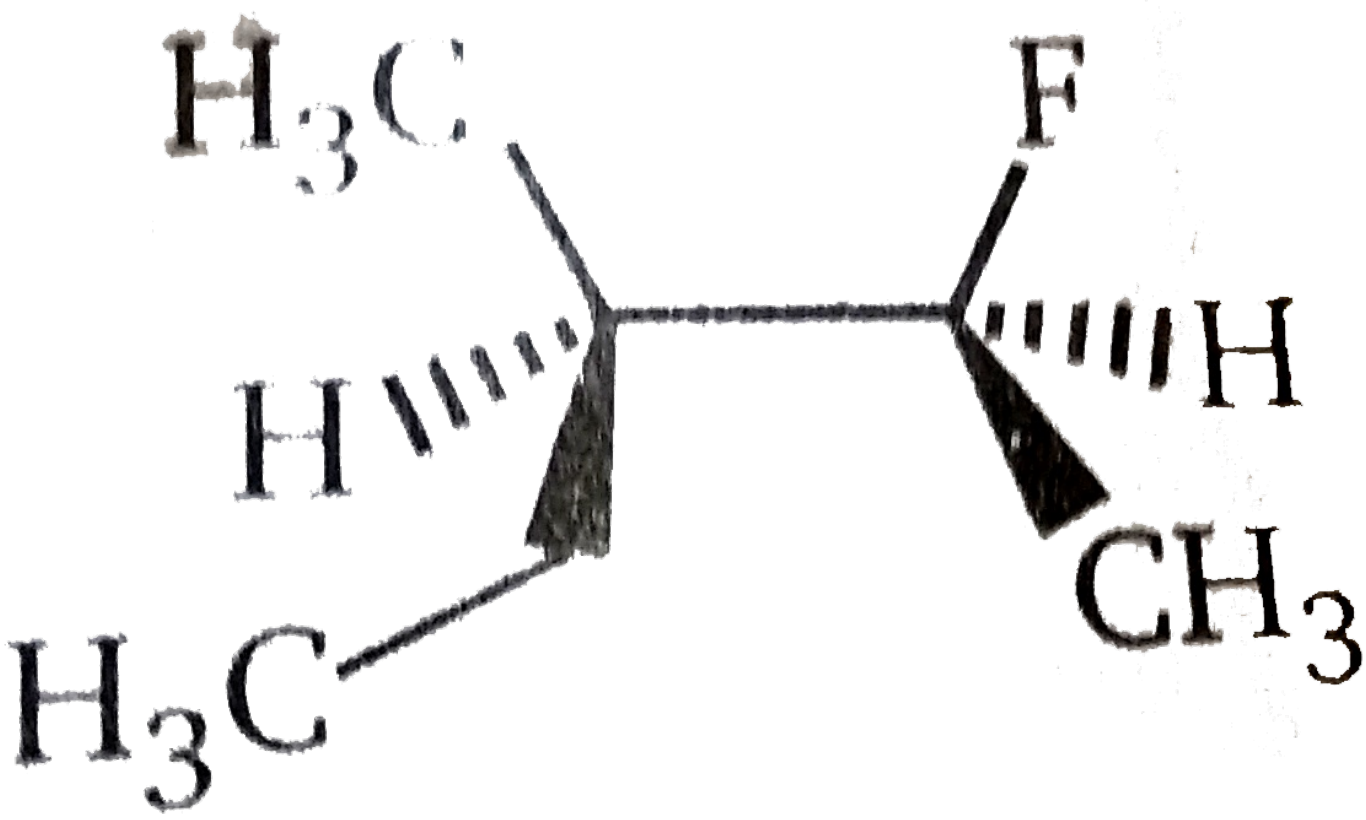
ISOMERISM

Revise Most Important Questions to Crack NEET 2020

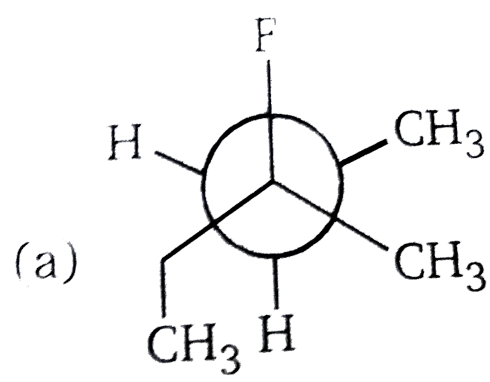
Download Doubtnut Now

Q-1 - 20594570

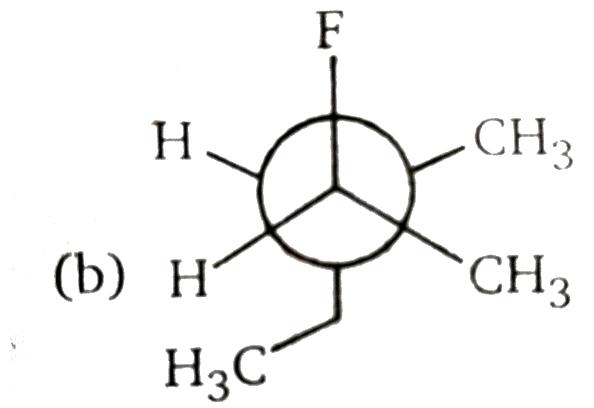
Which is the most stable conformer along the 2, 3 C-C bond axis of the compound ?



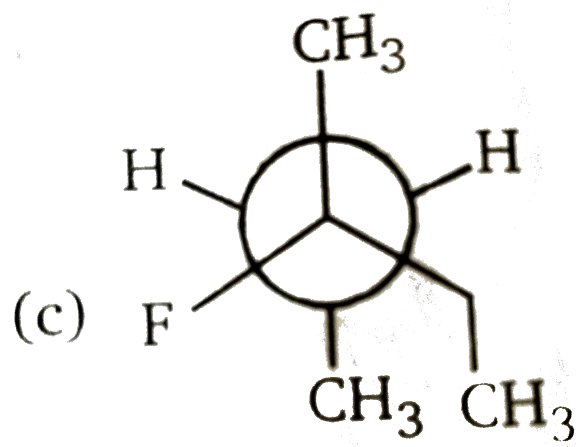
(A)



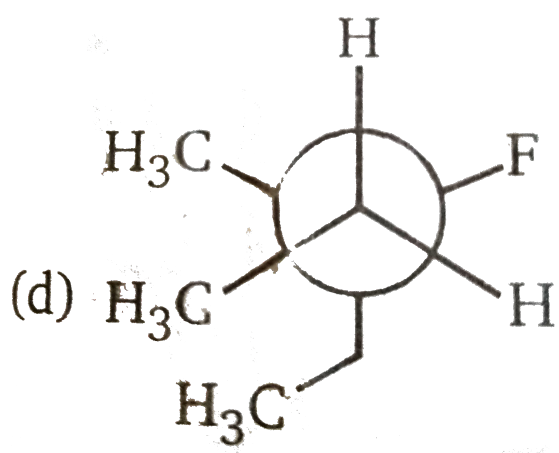
(B)



(C)

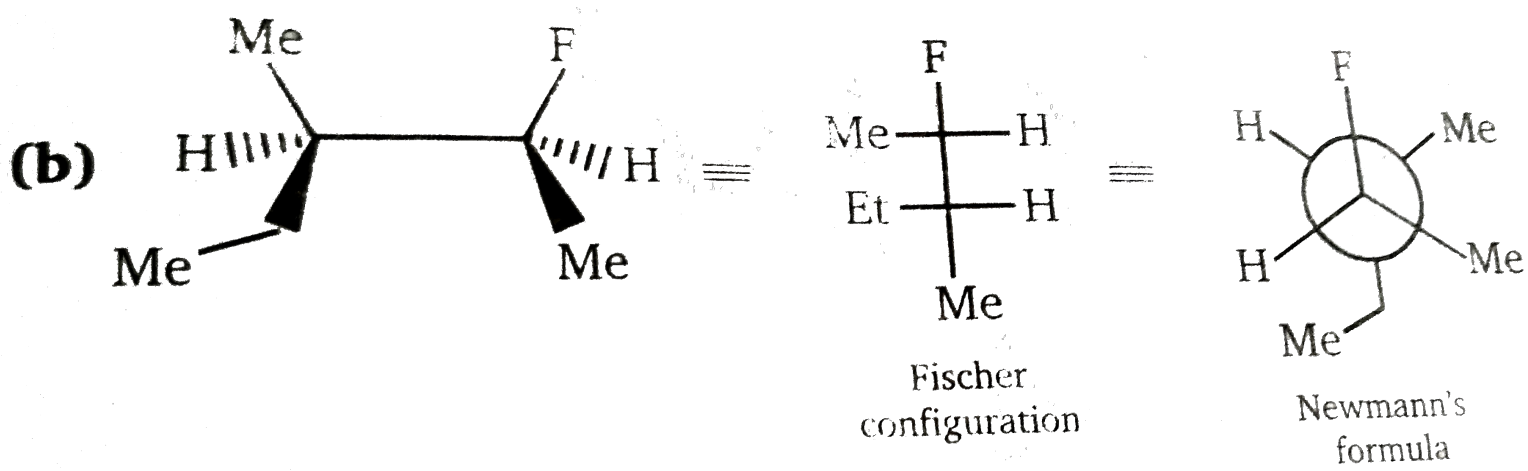


(D)



CORRECT ANSWER: B

SOLUTION:



Watch Video Solution On Doubtnut App

Q-2 - 20594573

How many meso isomers of $C_4H_8Cl_2$ will be?

(A) 0

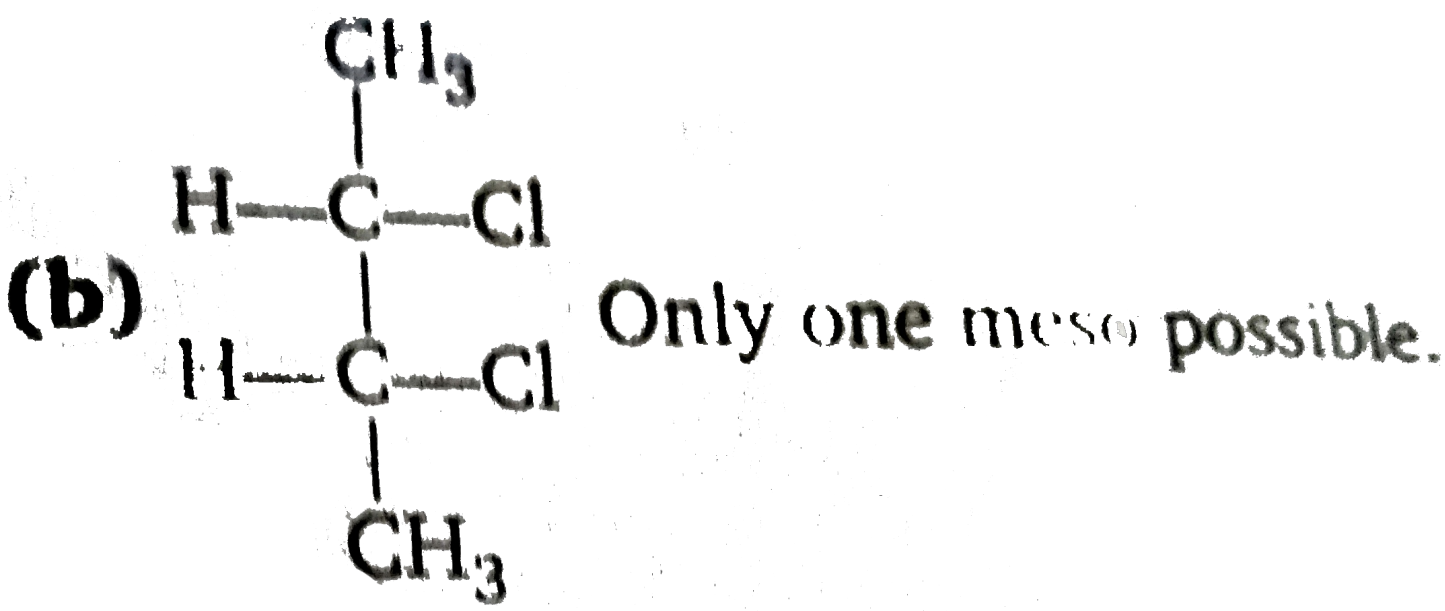
(B) 1

(C) 2

(D) 3

CORRECT ANSWER: B

SOLUTION:



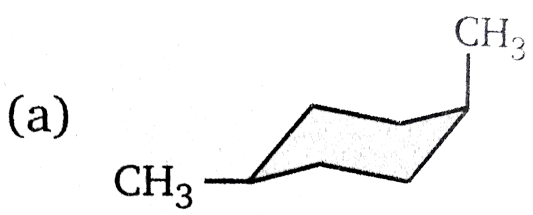
Only one meso possible.

Watch Video Solution On Doubtnut App

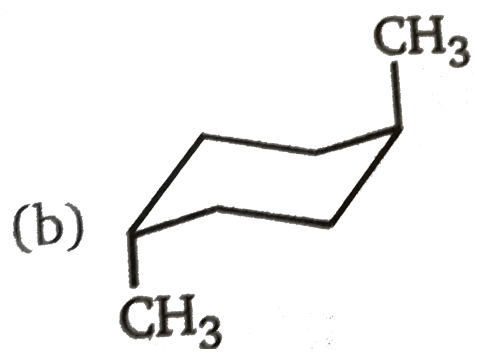
Q-3 - 20594575

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

(A)

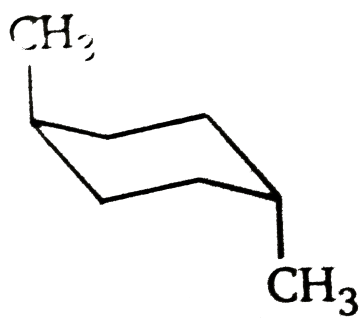


(B)



(C)

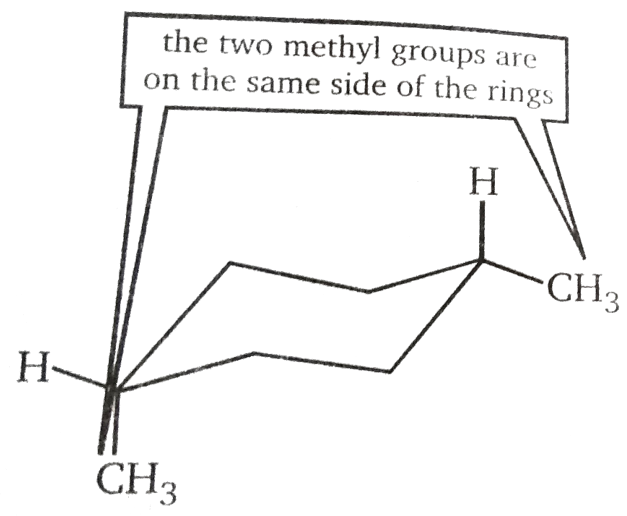
(D)



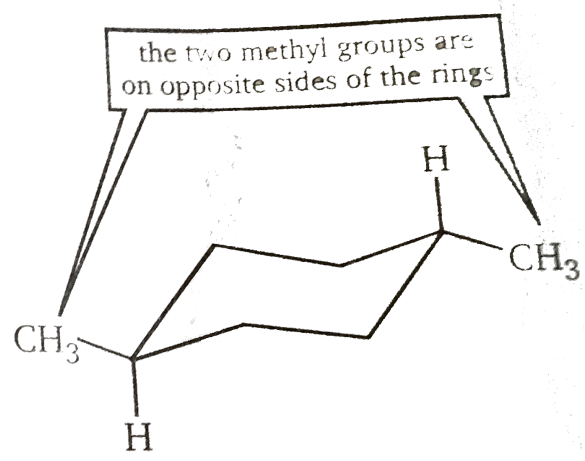
CORRECT ANSWER: C

SOLUTION:

First of all, there are two different dimethylcyclohexanes. One has both methyl substituents one the same side of the cyclohexane ring, it is the cis isomer (cis is Latin for "on this side") The other has two methyl substituents on opposite side of the ring, it is the tran s isomer (trans is Latin for "across"). cis-,4-dimethylclohexane and trans-1, 4-dimethylcyclohexane are called geometric isomers of cis-1,4-dimethycyclohexane and trans-1, 4-dimethycyclohexane are called geometric isomers of cis-trans stereoisomers-they have the same atoms, and the atoms are linked in the same order, but they differ in the spartial (stereo) arrangement of the atoms.



cis-1, 4-dimethylcyclohexane



trans-1, 4-dimethylcyclohexane

First we will determine which of the two chair conforms

of cis- 1,4-dimethyl-cyclohexane is more stable. One chair conformer has one methyl group in an equatorial position and one methyl group in an axial position. The other chair conformer also has one Therefore, both chair conformers are equally stable.

Watch Video Solution On Doubtnut App

Q-4 - 20594578

$$HO - \underset{(2)}{C}H_2 - \underset{(3)}{C}H_2 - F$$

Which conformer of above compound is most stable across

$C_2 - C_3$?

(A) staggered

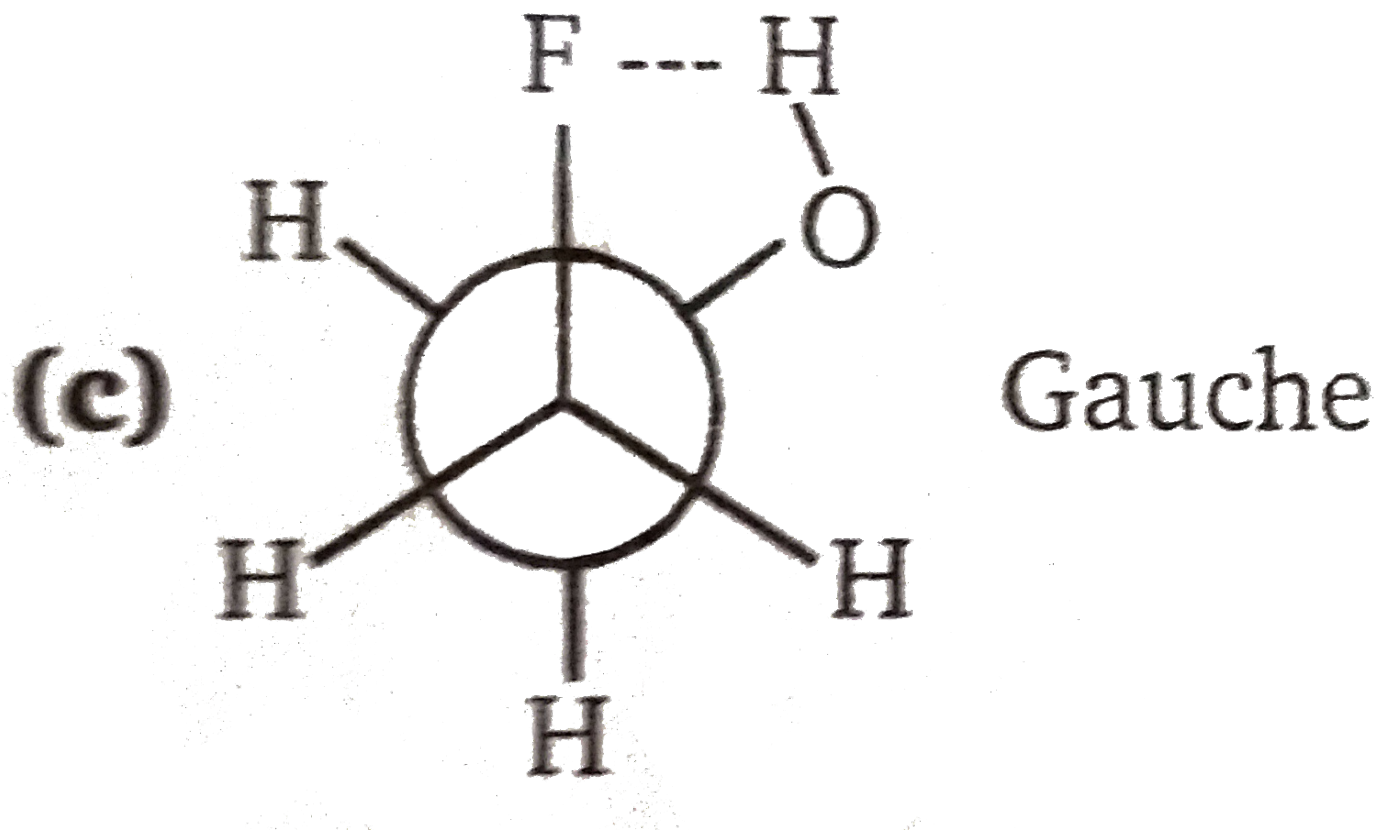
(B) eclipsed (partially)

(C) gauche

(D) fully eclipsed

CORRECT ANSWER: C

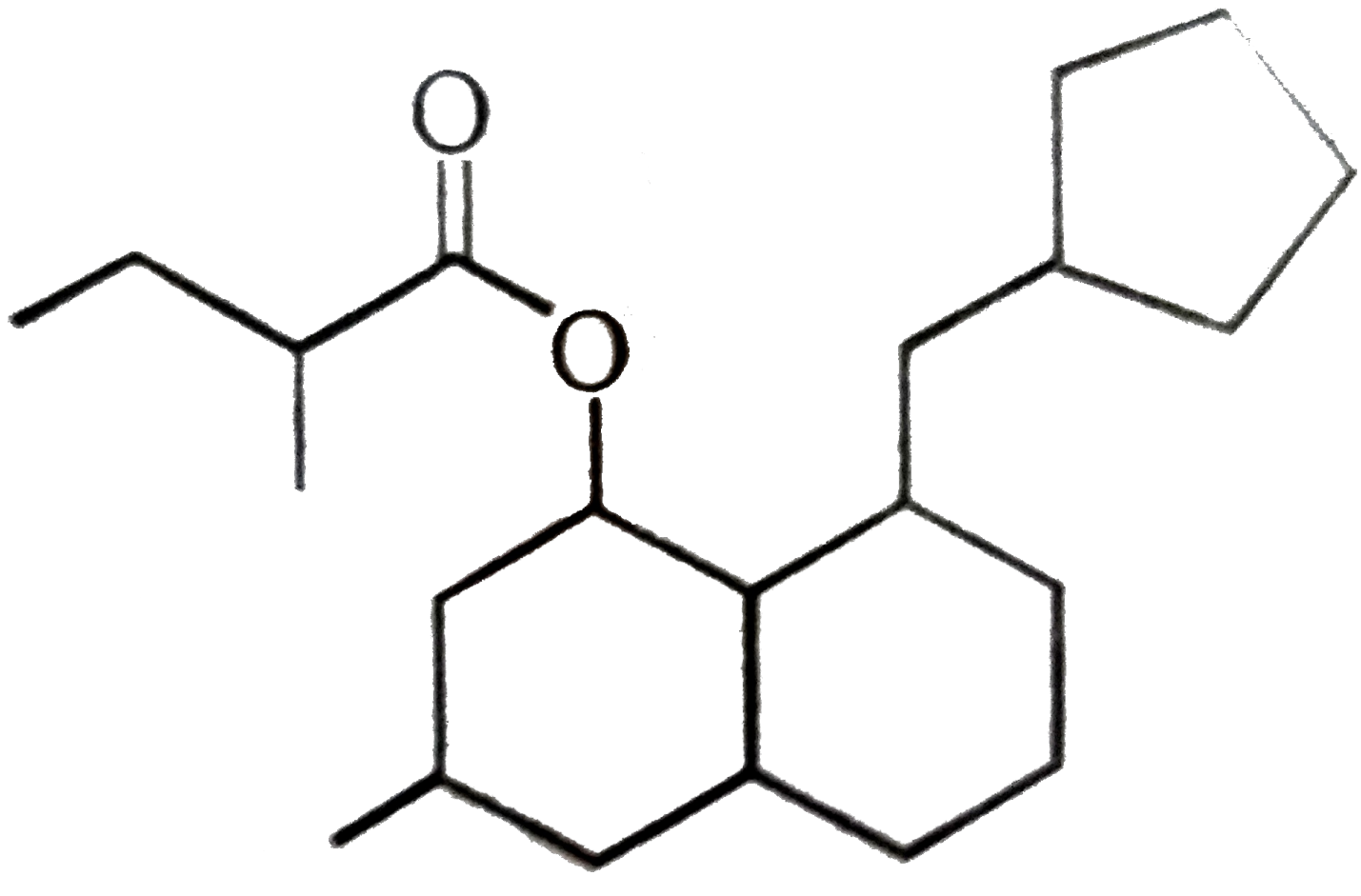
SOLUTION:



Watch Video Solution On Doubtnut App

Q-5 - 20594582

How many chiral centers are in the following compound ?



(A) 4

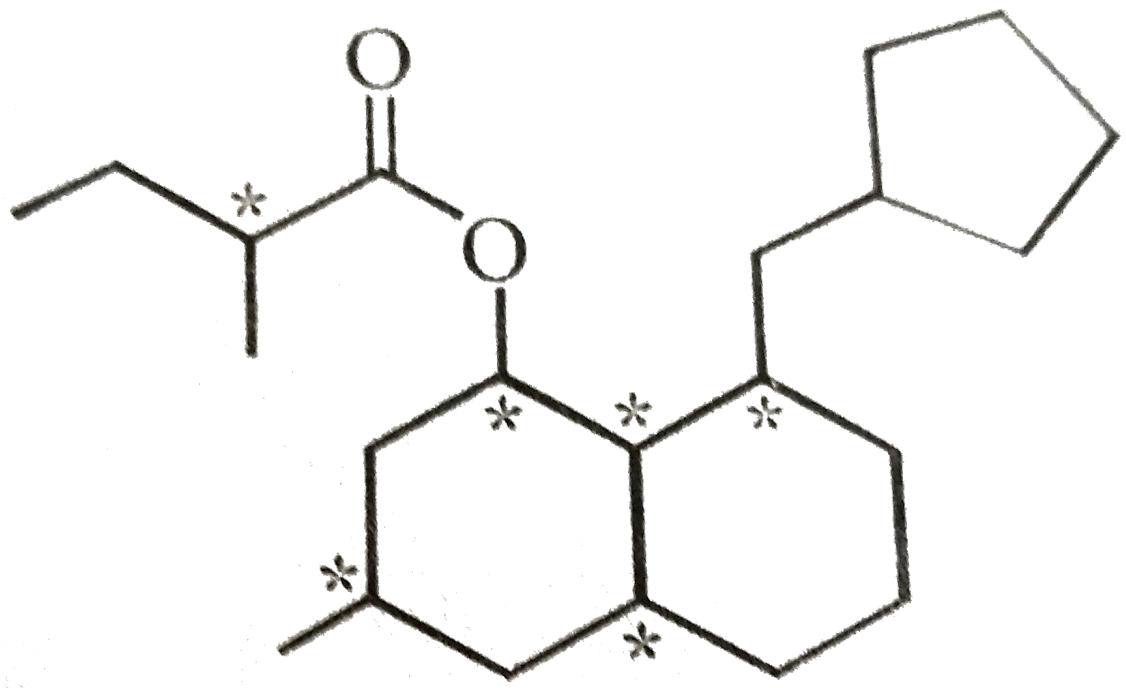
(B) 5

(C) 6

(D) 7

CORRECT ANSWER: C

SOLUTION:

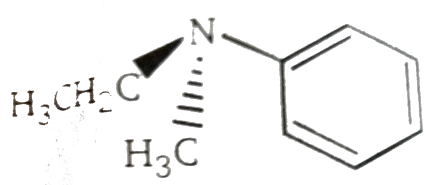
(c) 

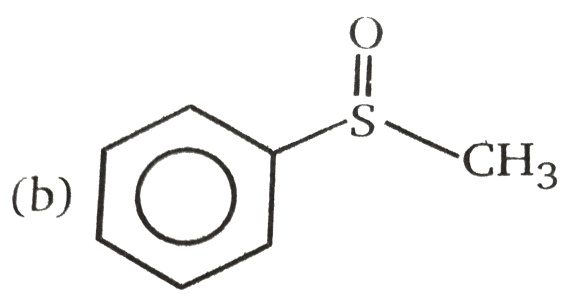
6 Chiral centres

Watch Video Solution On Doubtnut App

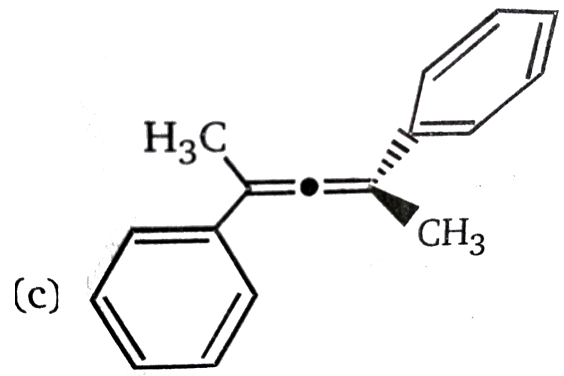
Q-6 - 20594583

Among the following the optically inactive compound is :

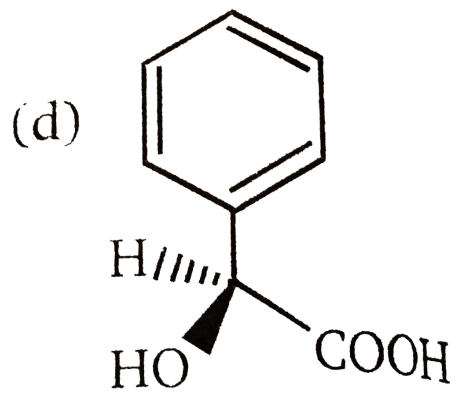
(A) 

(B) 

(C)

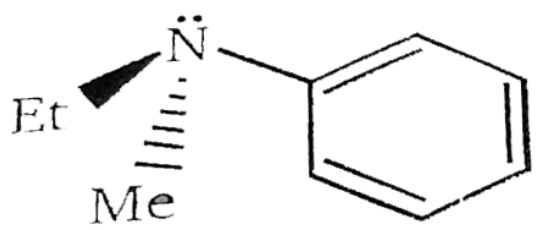


(D)



CORRECT ANSWER: A

SOLUTION:

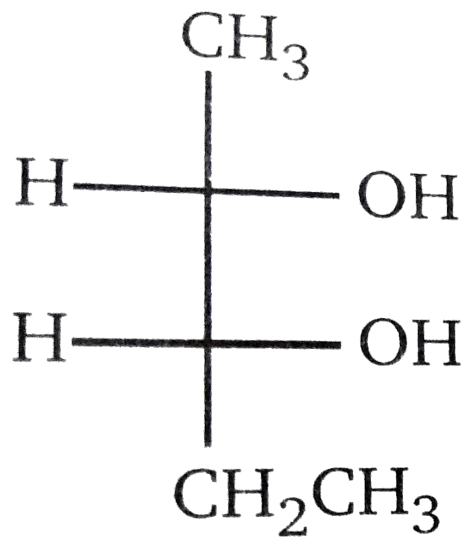


→ optically inactive due to resonance.
(N is sp^2-hybridised)

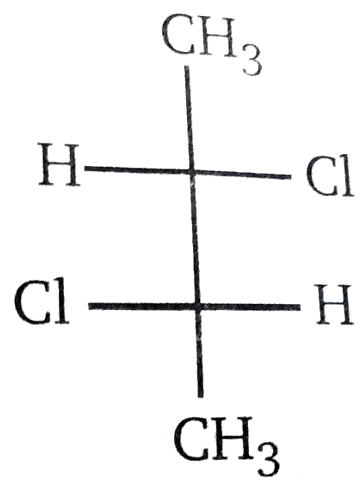
Watch Video Solution On Doubtnut App

Q-7 - 20594611

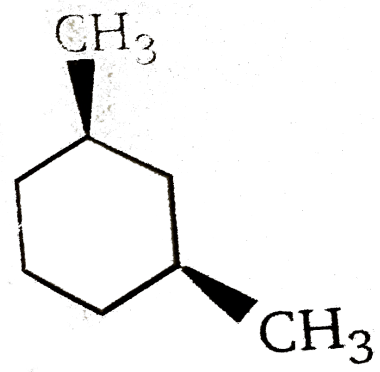
Which of the following compounds are meso forms ?



1



2



3

(A) 1 only

(B) 3 only

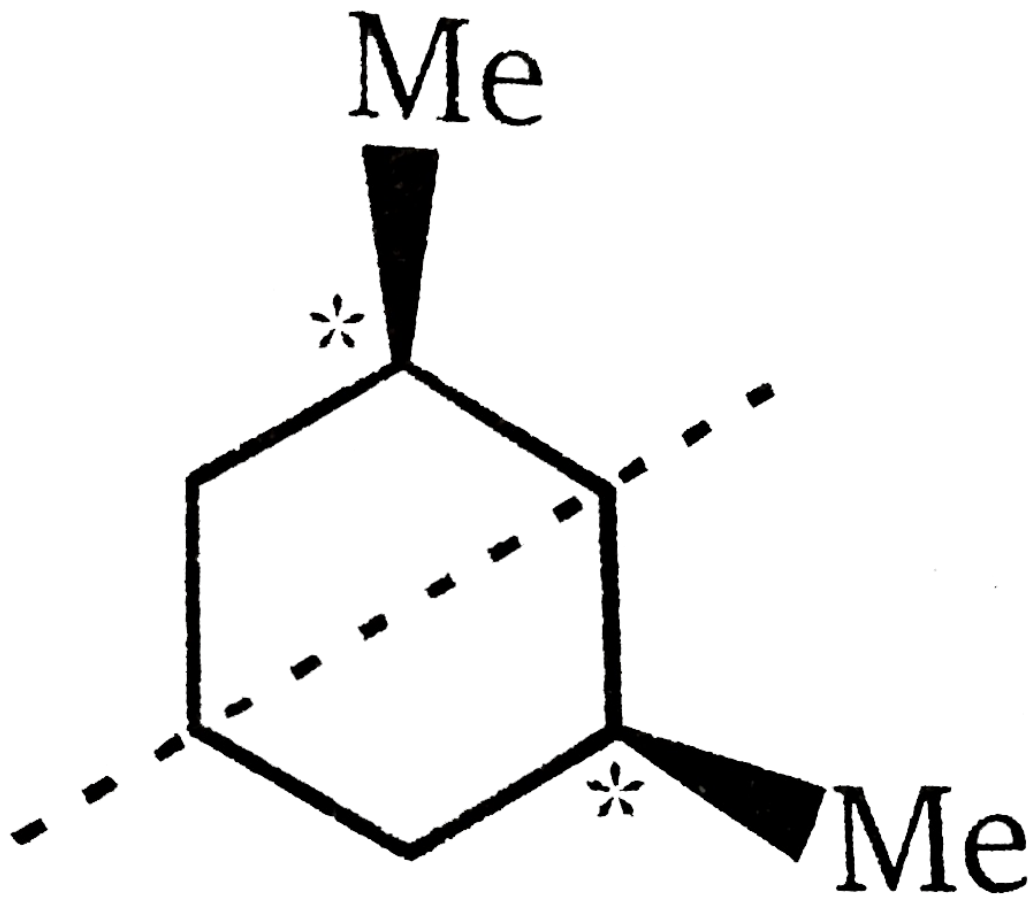
(C) 1 and 2

(D) 2 and 3

CORRECT ANSWER: B

SOLUTION:

(b)

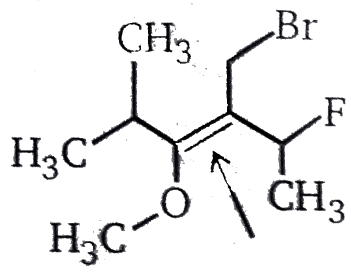


Meso $\rightarrow$ Compounds having chirla centers and have plane or centre of symmetry are known as meso compound.

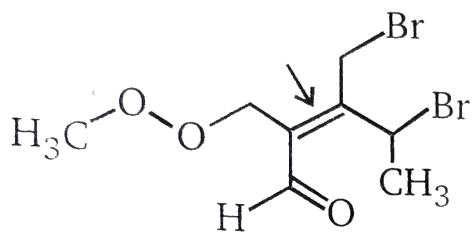
Watch Video Solution On Doubtnut App

Q-8 - 20594615

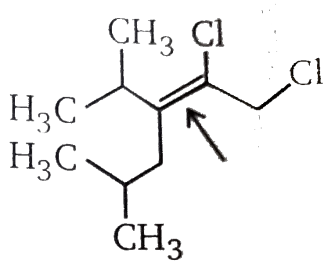
Among the folowing structures, select E isomers (arrows indicate the bonds to be considered) ?



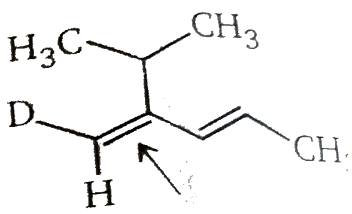
(1)



(2)



(3)



(4)

(A) 1 and 2

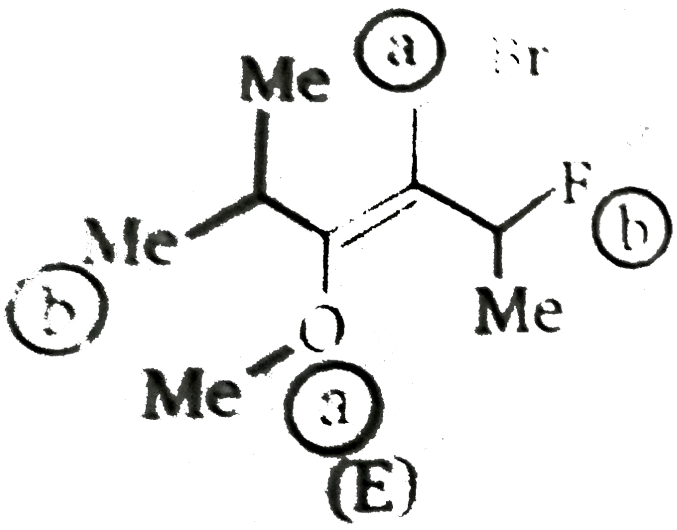
(B) 1 and 3

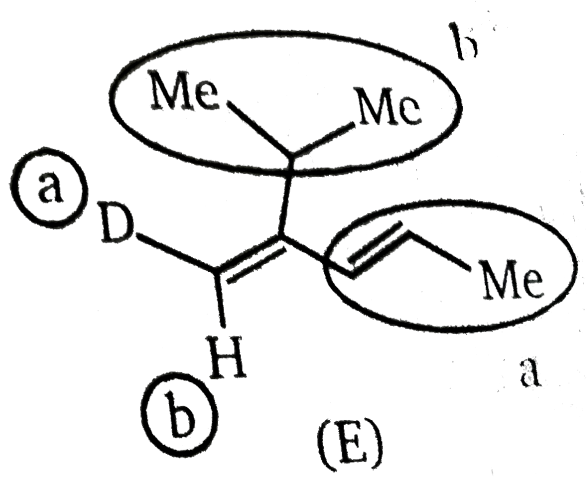
(C) 1 and 4

(D) 2 and 3

CORRECT ANSWER: C

SOLUTION:





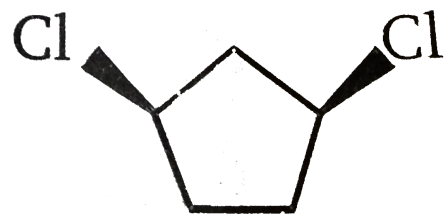
a=I^{st} priority , b=IInd priority

Watch Video Solution On Doubtnut App

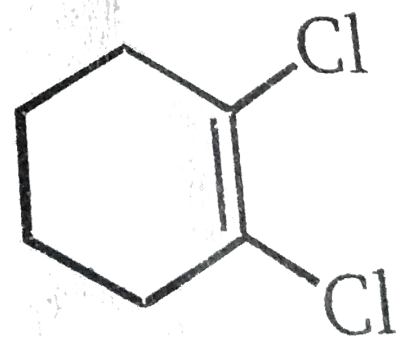
Q-9 - 20594616

Which of the following compounds has a zero dipole moment ?

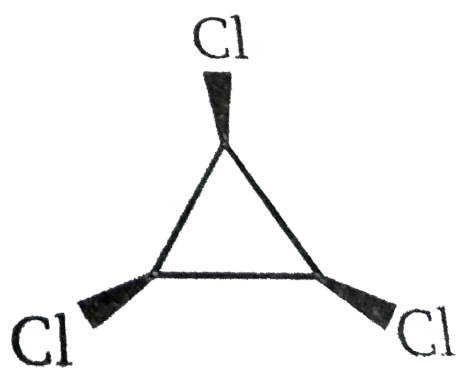
(A) (a)



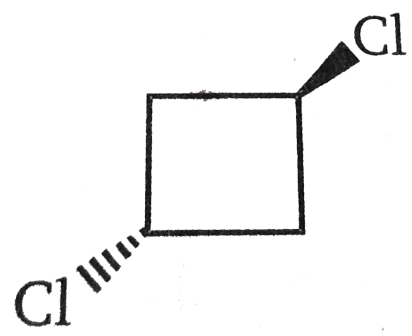
(B) (b)



(C) (c)

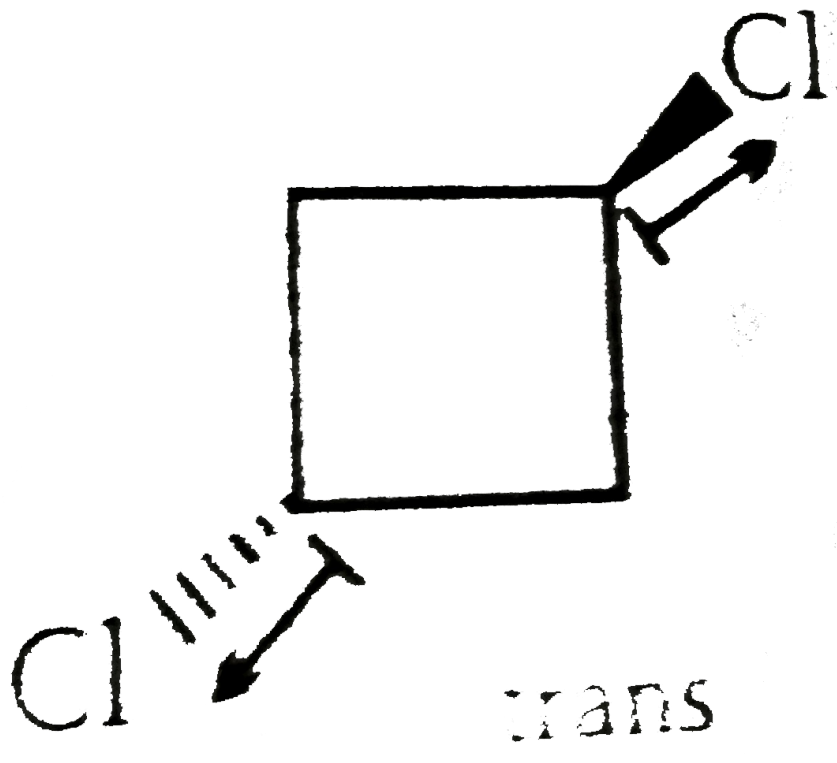


(D) (d)



CORRECT ANSWER: D

SOLUTION:



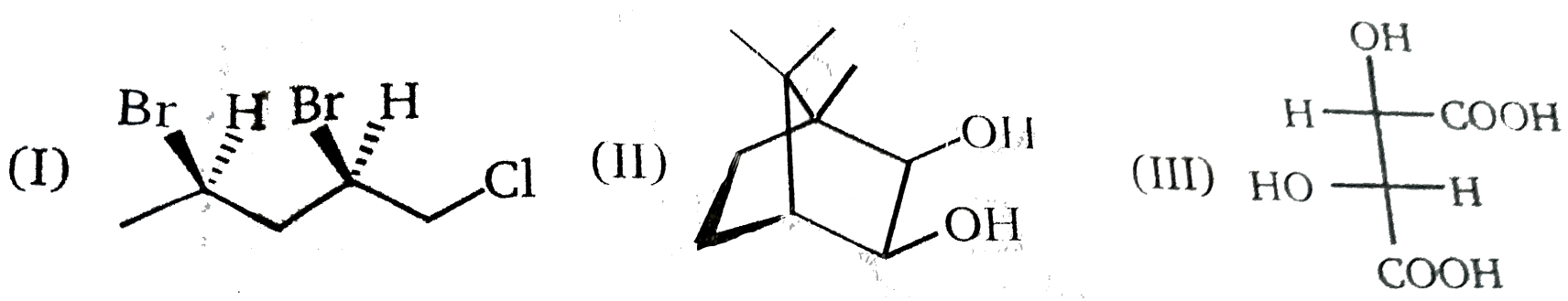
Zero dipole.

Zero dipole.

Watch Video Solution On Doubtnut App

Q-10 - 20594620

Which of the following molecules is/are chiral ?



(A) I

(B) II

(C) III

(D) I,II

CORRECT ANSWER: D

SOLUTION:

Compound which do not have plane and centre of symmetry are optically active.

Watch Video Solution On Doubtnut App

Q-11 - 20594622

How amny isomers are possible for the following molecule ?

(A) 1

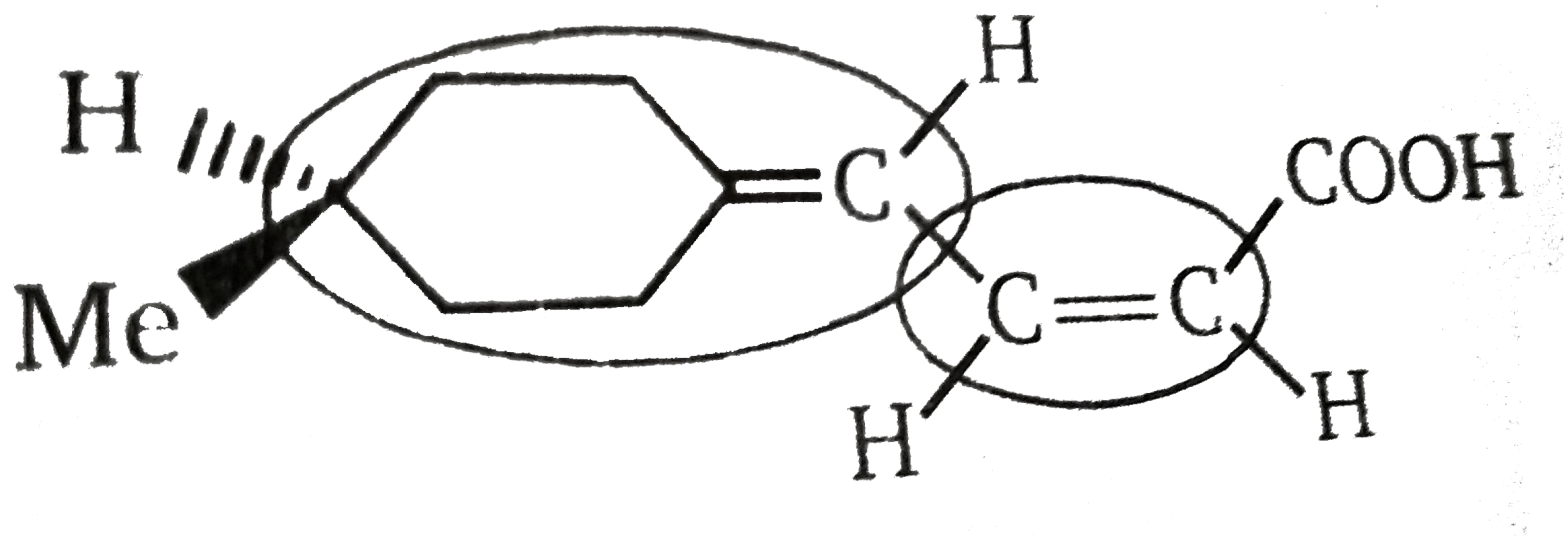
(B) 2

(C) 3

(D) 4

CORRECT ANSWER: D

SOLUTION:



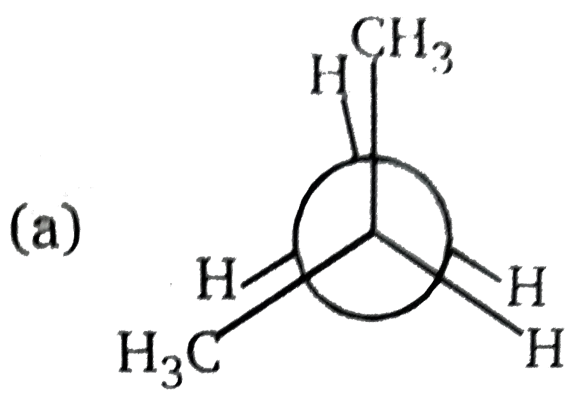
Total isomers $= 2^n = 2^2 = 4$

Watch Video Solution On Doubtnut App

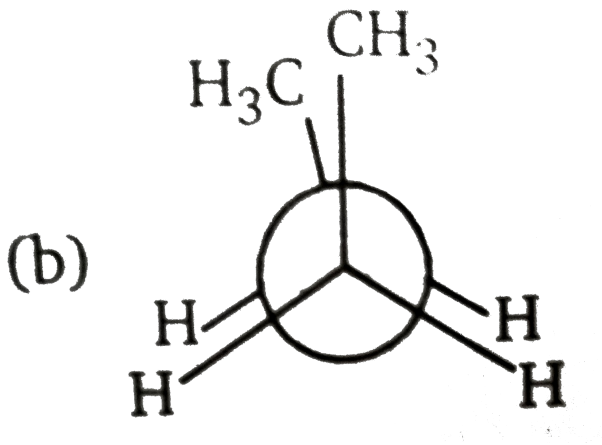
Q-12 - 20594626

Which is the lowest energy conformation of butane ?

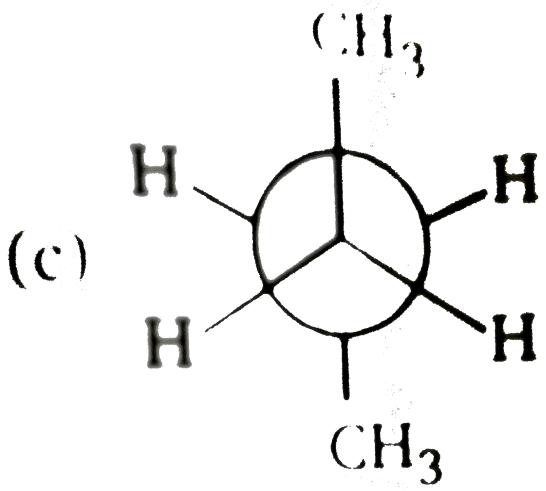
(A)



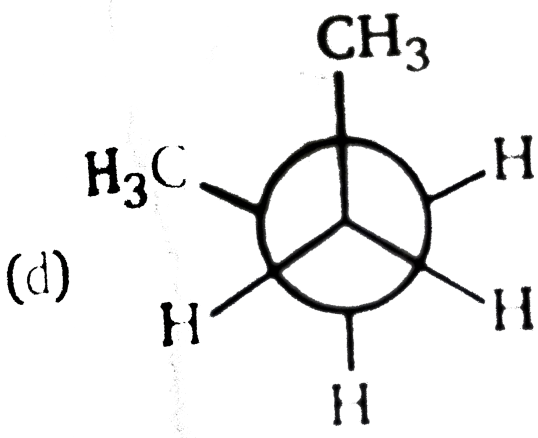
(B)



(C)



(D)



CORRECT ANSWER: C

SOLUTION:

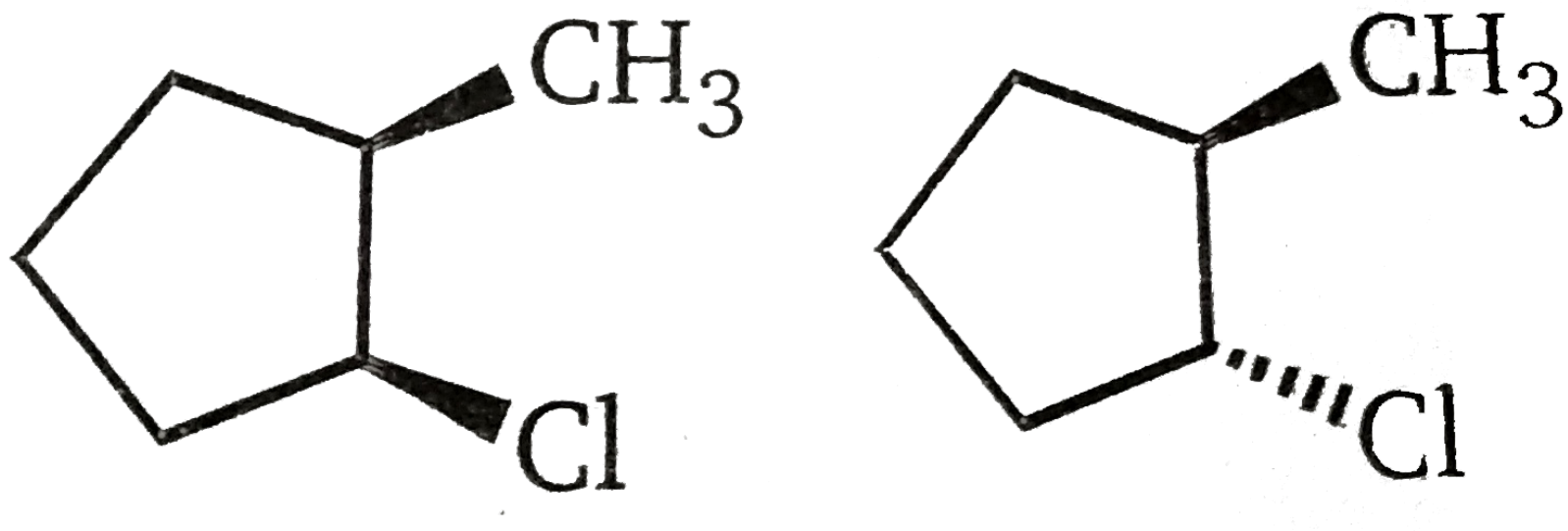
Anti conformation of butane is most stable and rewuire

lowest energy.

Watch Video Solution On Doubtnut App

Q-13 - 20594636

The following compounds are identical with respect to :



(A) molecular composition

(B) boiling point

(C) melting point

(D) IUPAC name

CORRECT ANSWER: A

SOLUTION:

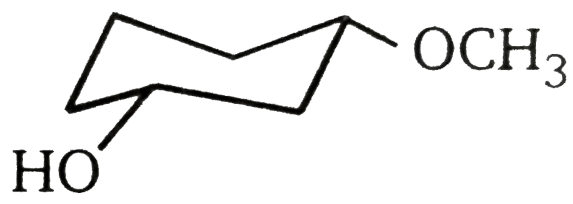
Both molecule has same molecular formula $C_6H_{11}Cl$ so have molecolar wt, and composition because both have

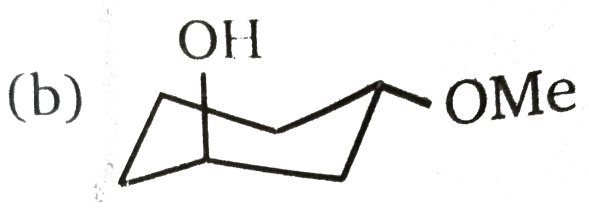
substituents on same atoms.

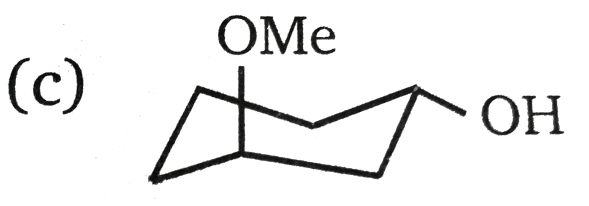
Watch Video Solution On Doubtnut App

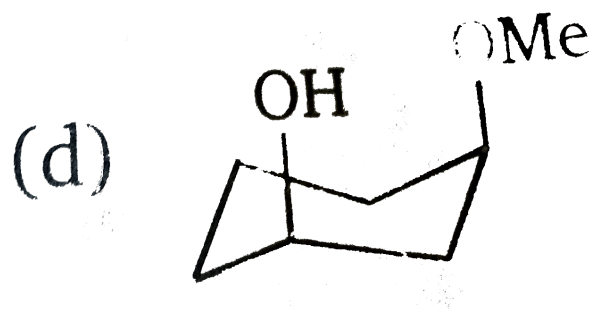
Q-14 - 20594637

Among the following, the most stable isomer is :

(A) 

(B) 

(C) 

(D) 

CORRECT ANSWER: D

SOLUTION:

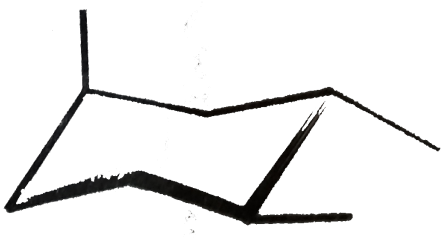
aa isomer is most stable (due intramolecular hydrogen bonding).

Watch Video Solution On Doubtnut App

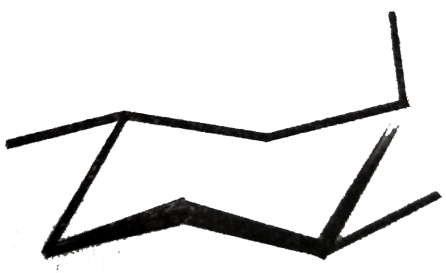
Q-15 - 20594644

Which of the following structures represents the lowest-energy from (1S, 2S 4R)-trimethyl-cyclohexane?

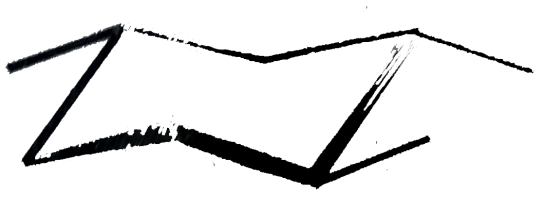
(A) (a)



(B) (b)



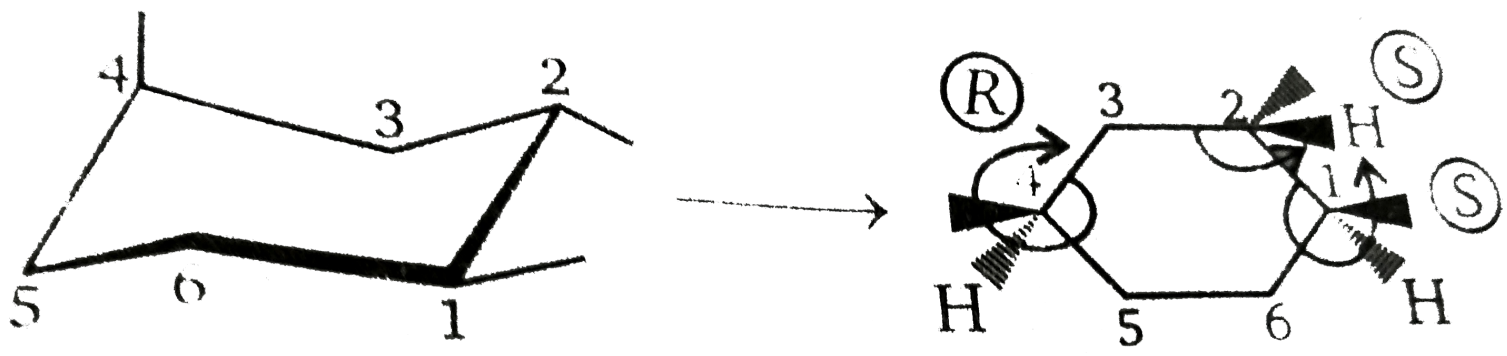
(C)



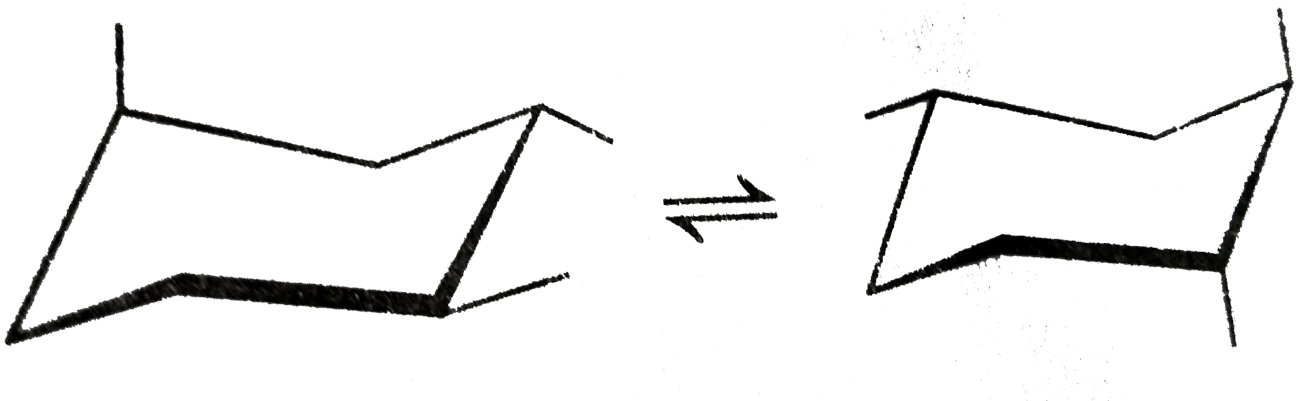
(D)

CORRECT ANSWER: A

SOLUTION:



Now,

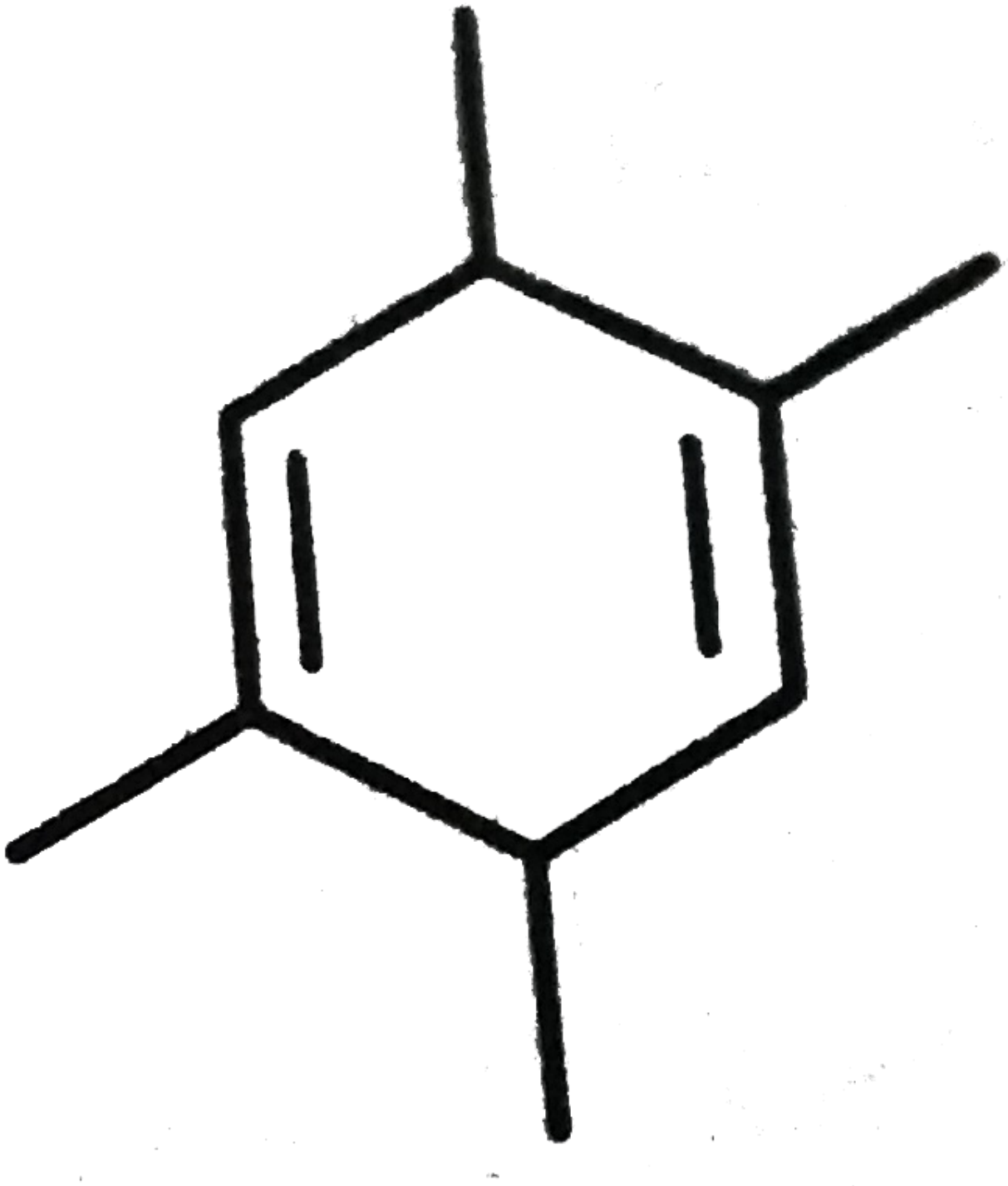


(2 methyl equatorial and 1 axial) will be more more stable.

Watch Video Solution On Doubtnut App

Q-16 - 20594649

The number of all the possible steroisomers formed by the given compound is



(A) 2

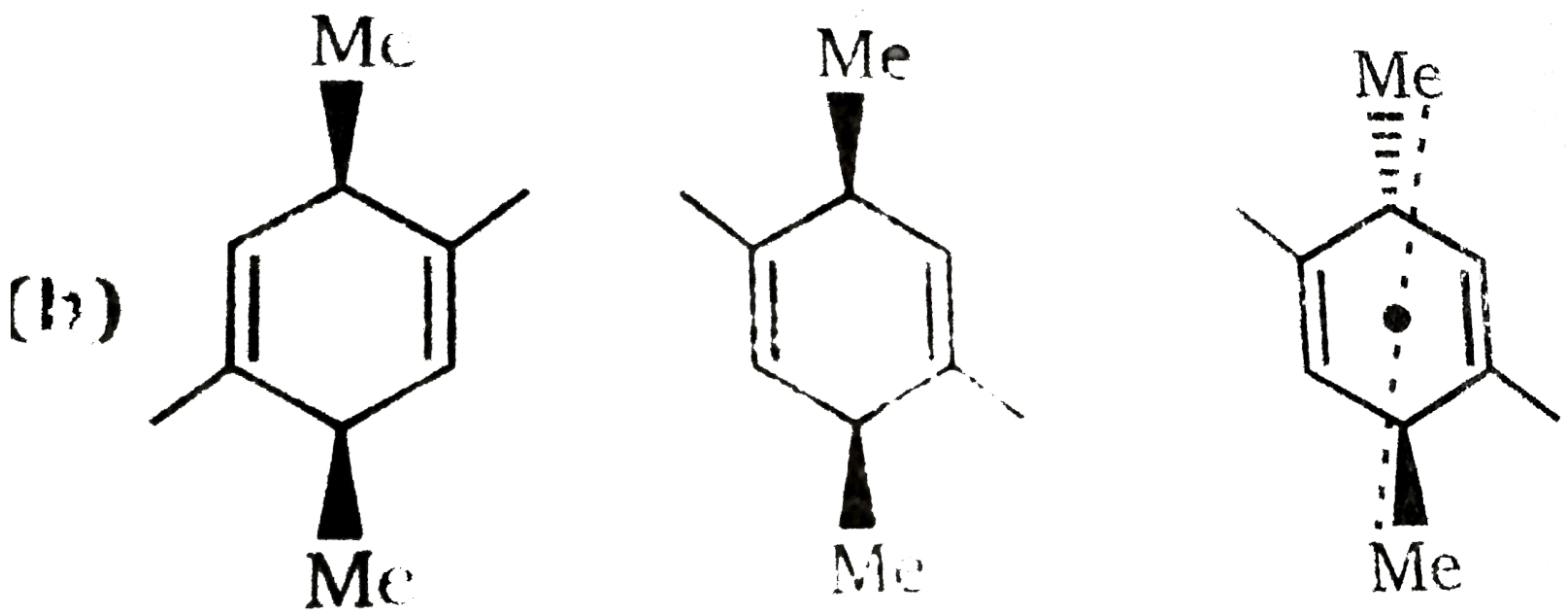
(B) 3

(C) 32

(D) 64

CORRECT ANSWER: B

SOLUTION:



Only 3 product possible.

Watch Video Solution On Doubtnut App

Q-17 - 20594650

The relatioship among the following pairs of isomers is :

I A:Consitutional

II B: Cconfigurational

III C:Conformational

IV D:Optical

(A) I-A, II-B, III-B, IV-D

(B) I-A, II-A, III-B, IV-D

(C) I-B, II-A, III-B, IV-D

(D) I-B, II-B, III-A, IV-B

CORRECT ANSWER: B

SOLUTION:

I,II $\rightarrow$ Structural isomer

III $\rightarrow$ Geometrial (configuration)

IV $\rightarrow$ Enantiomer (optical)

Watch Video Solution On Doubtnut App

Q-18 - 20594642

An aqueous solutin containing compounds A and B shows optical activity A and B are stereoisomers. Which of the following possibilities cannot be correct ?

(A) A has two chiral centers, but B does not have any because it has a symmetry plane

(B) A and B are enantiomers

(C) A and B are diasteromers

(D) A and B are not present in equal amounts

CORRECT ANSWER: A

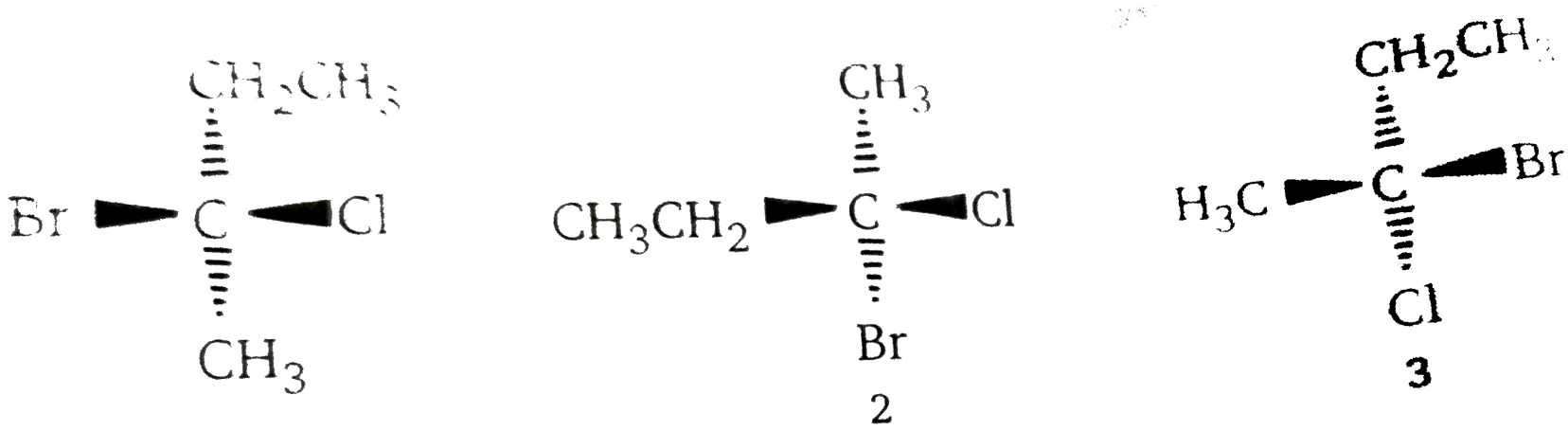
SOLUTION:

Comopound 'B' may be mso but meso has plane of symmetry with chiral centres.

Watch Text Solution On Doubtnut App

Q-19 - 20594654

Which of the following depict the same ?



(A) 1 and 2

(B) 1 and 3

(C) 2 and 3

(D) 1, 2 and 3

CORRECT ANSWER: D

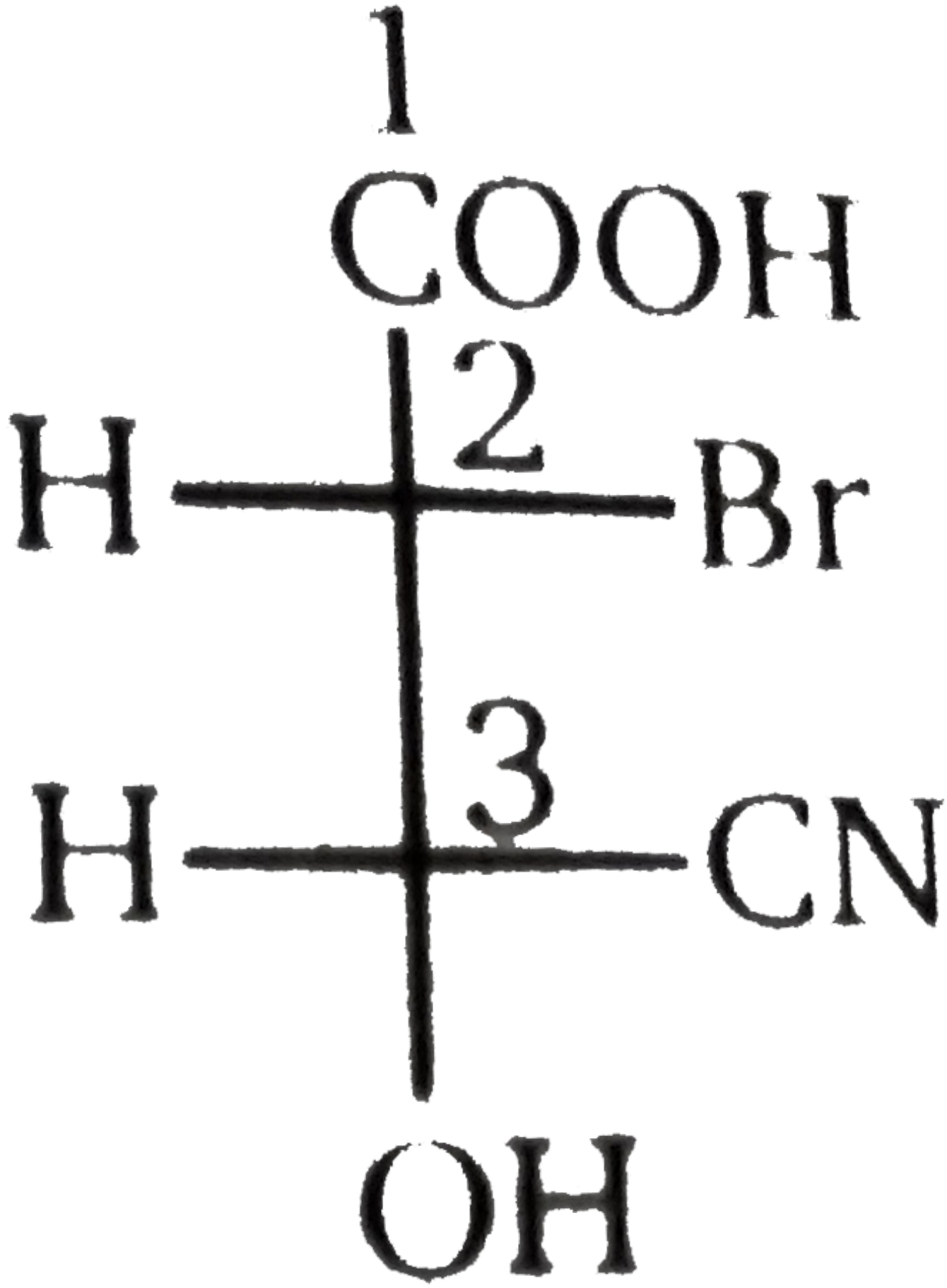
SOLUTION:

1,2 & 3 all have 'S' confituration so all are identical.

Watch Video Solution On Doubtnut App

Q-20 - 20594659

The absolute configurations of the two centers in the following molecule are :



(A) 2(R),3(S)

(B) 2(R),3(R)

(C) 2(S),3(S)

(D) 2(S),3(R)

CORRECT ANSWER: A

SOLUTION:

Watch Video Solution On Doubtnut App

Q-21 - 20594660

The total number of stereoisomer possible for 2,3-dichloro butane :

(A) 2

(B) 3

(C) 4

(D) 5

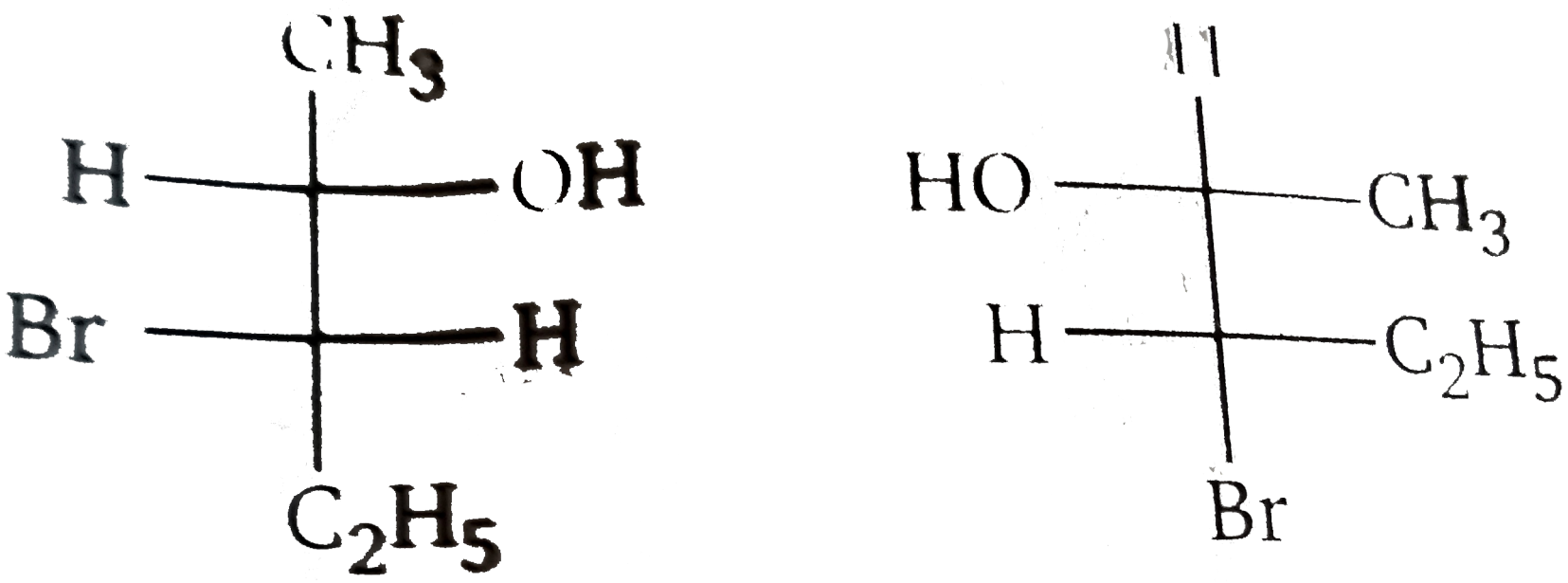
CORRECT ANSWER: B

SOLUTION:

For symmetrical molecule total isomers when n= even

Watch Video Solution On Doubtnut App

Q-22 - 20594665



The molecules represented by the above two structures are :

(A) identical

(B) enantiomers

(C) diastereomers

(D) epimers

CORRECT ANSWER: A

SOLUTION:

Both molecule have same configuration so are identical.

Watch Video Solution On Doubtnut App

Q-23 - 20594666

The correct order of priority of groups

$-SCH_3(I),\ -NO_2(II),$
$-C\equiv CH(III)$ and
$-CH_2C_6H_5(IV),$

on the basis of CIP classification, is (increasing order):

(A) I,III,II,IV

(B) IV,III,II,I

(C) II,IV,I,III

(D) III,IV,II,I

CORRECT ANSWER: B

SOLUTION:

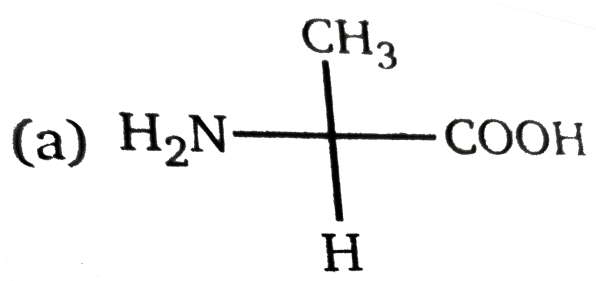
Follow CIP rules.

Watch Video Solution On Doubtnut App

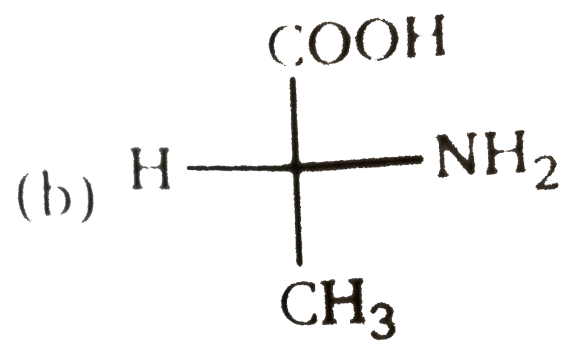
Q-24 - 20594670

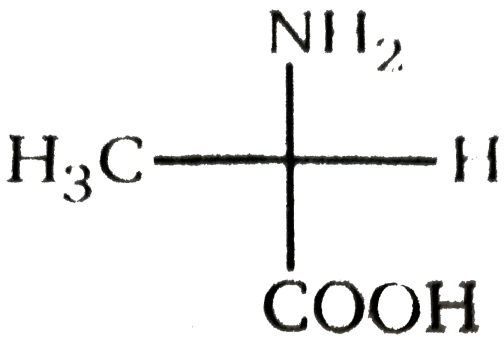
Amongst the following amino acids, the (R) -enantiomer is represented by :

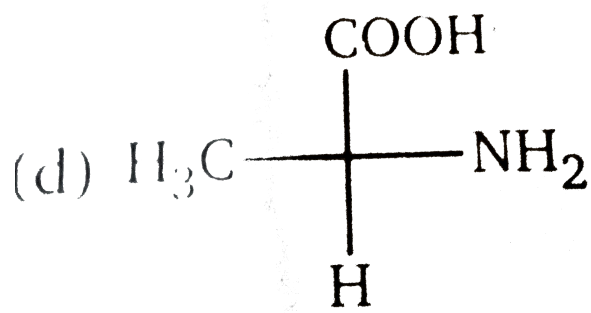
(A)



(B)

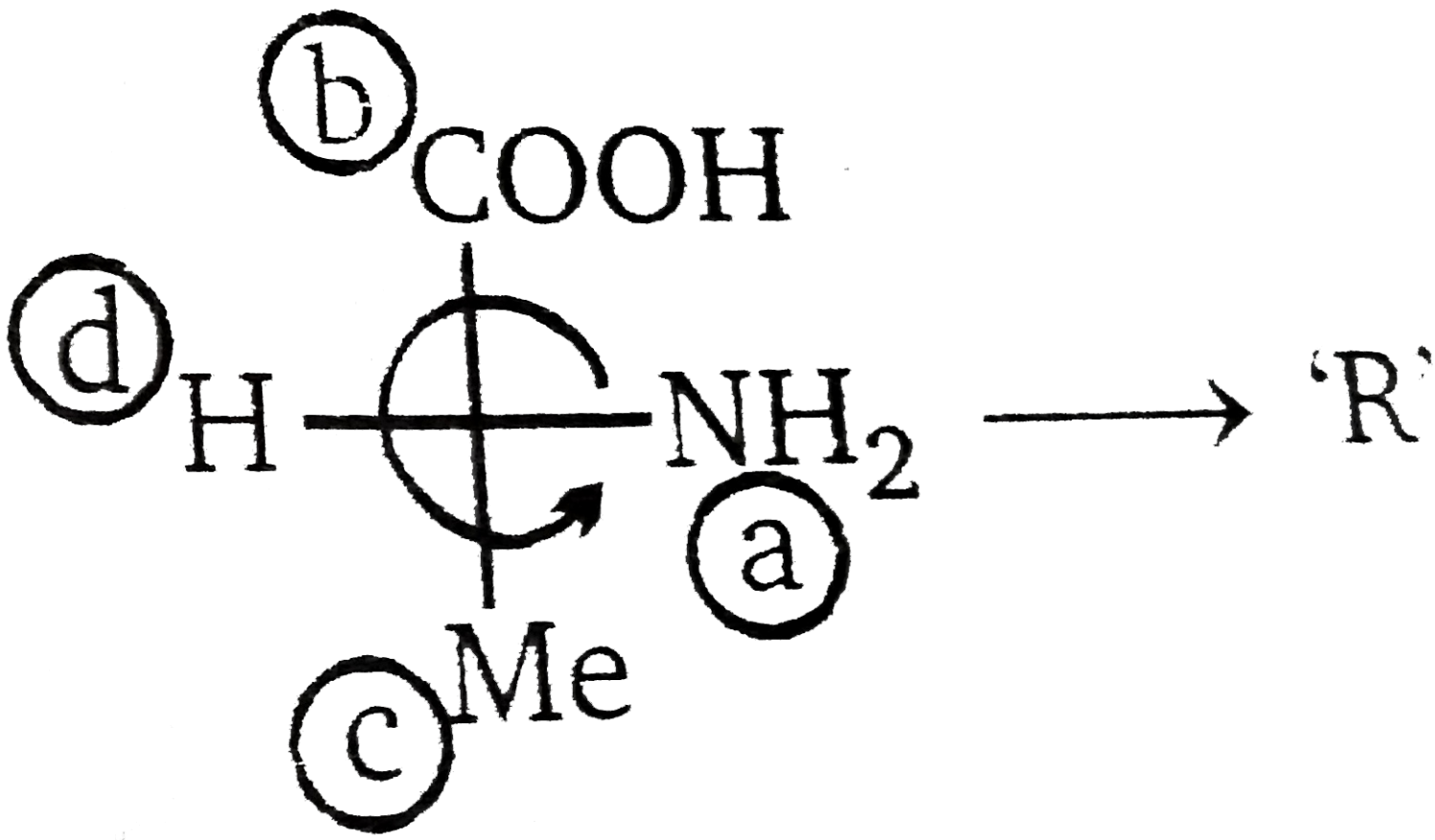


(C) 

(D) 

CORRECT ANSWER: A

SOLUTION:

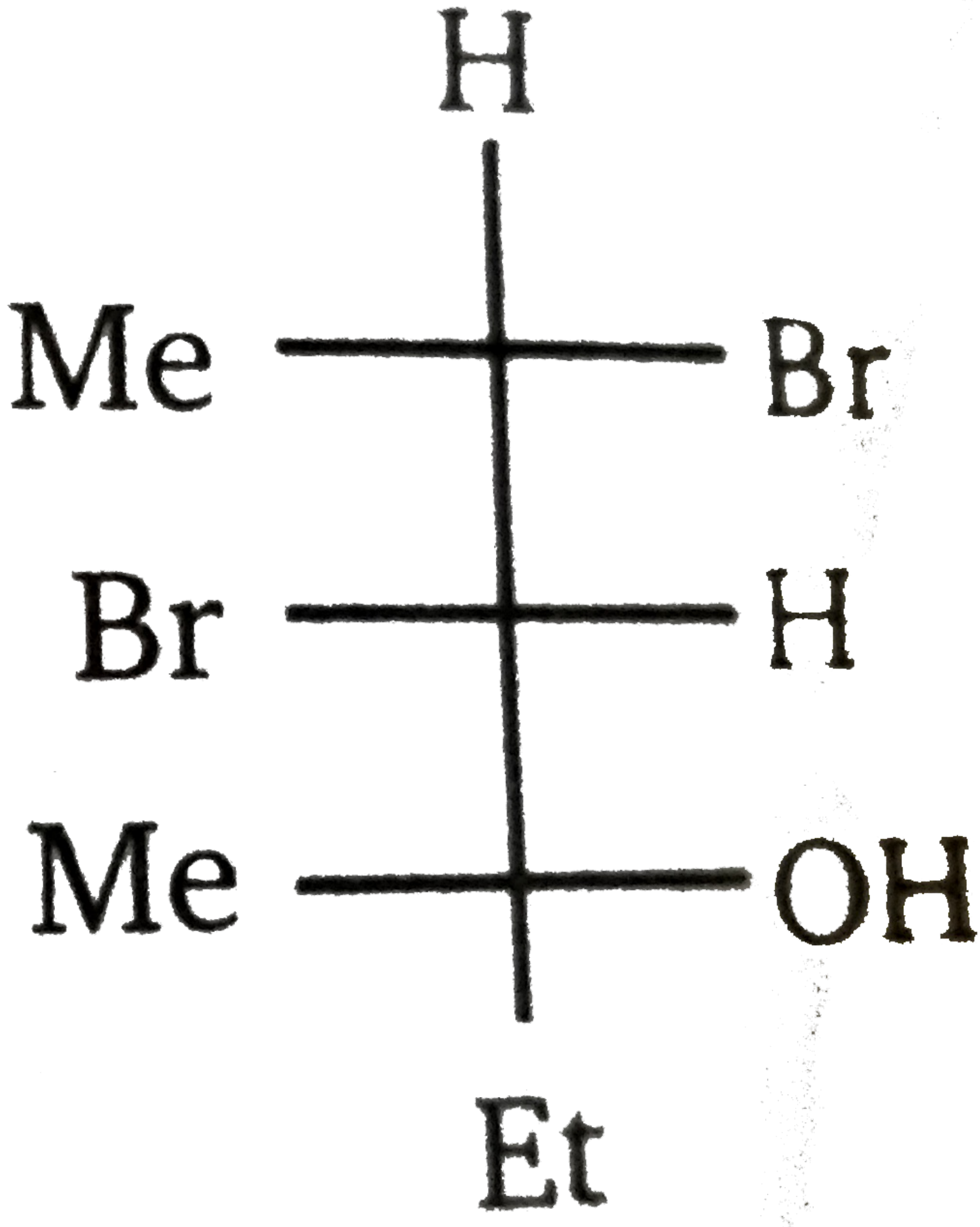


$\rightarrow$ 'R' Configuration.

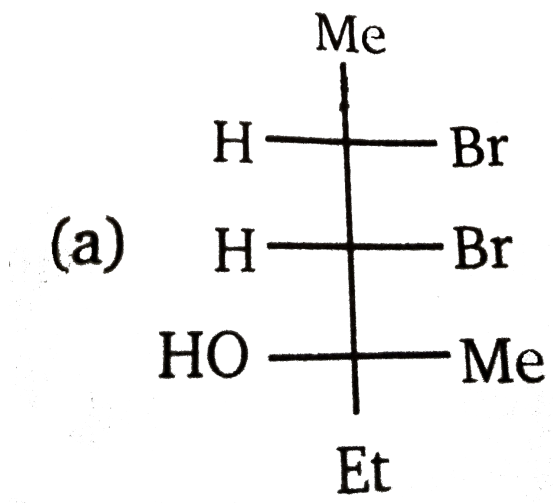
Watch Video Solution On Doubtnut App

Q-25 - 20594675

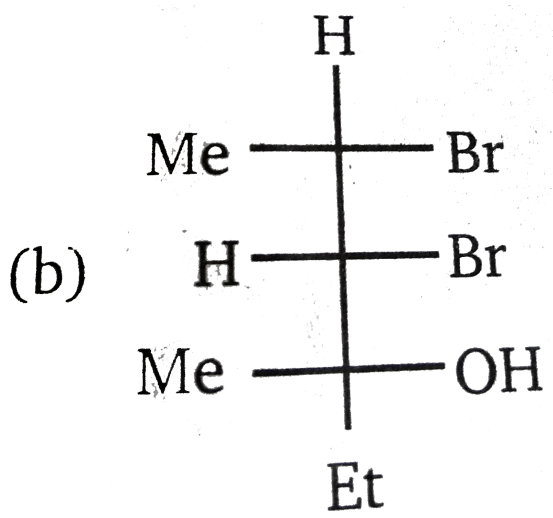
Which of the following is the enantiomer of the compound shown below ?



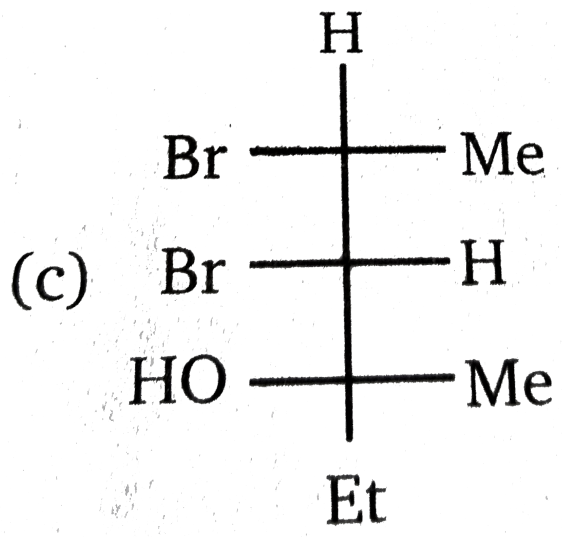
(A)



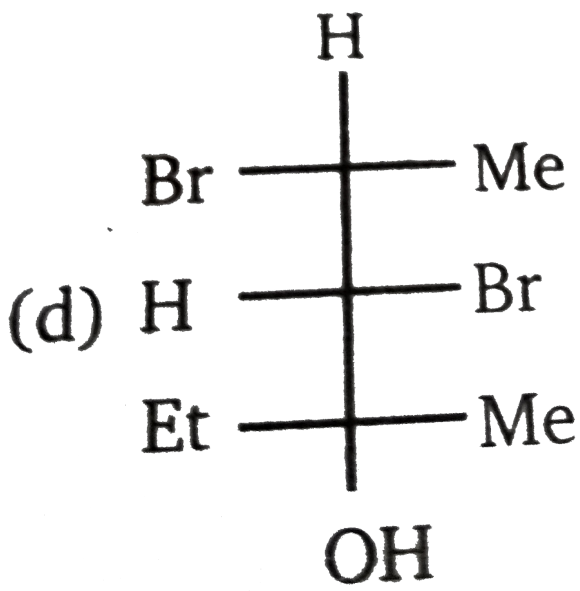
(B)



(C)

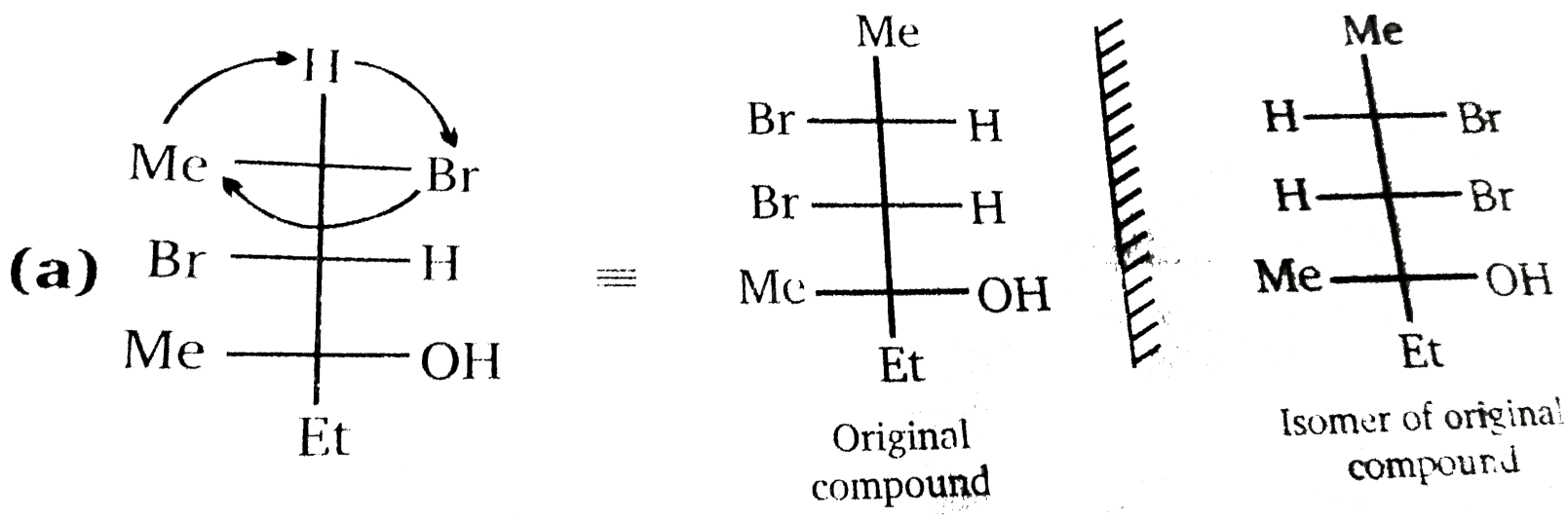


(D)



CORRECT ANSWER: A

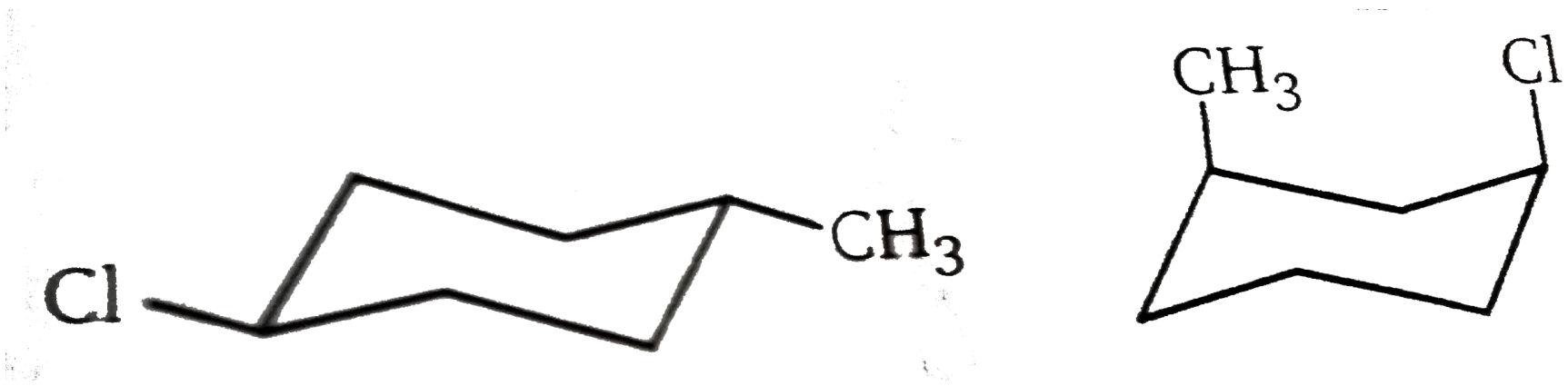
SOLUTION:



Watch Video Solution On Doubtnut App

Q-26 - 20594681

What is the relationship between the two structures shown ?



(A) Constitutional isomers

(B) Stereoisomers

(C) Different drawing of the same conformation of the same compound

(D) Different drawing of the same compound

CORRECT ANSWER: A

SOLUTION:

Positionl isomers.

Watch Video Solution On Doubtnut App

Q-27 - 20594684

Which of the following will not show geometrical isomerism?

(A)

$$CH - \underset{\underset{CH_3}{|}}{C} = CH - CH_2 - CH_3$$

(B)

$$CH - \underset{\underset{CH_3}{|}}{C} - CH = CH - CH_2 - CH_3$$

(C)

$$CH_3 - CH = CH - CH_3$$

(D)

$$CH_3 - CH_2 - CH = CH - CH_2 - CH$$

CORRECT ANSWER: A

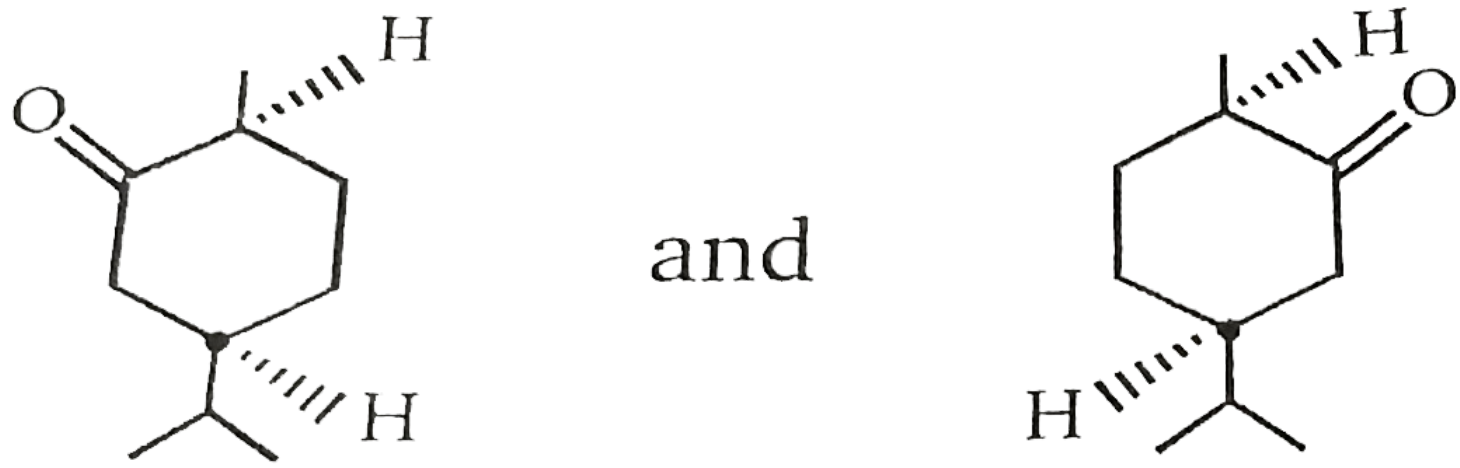
SOLUTION:

Double bonded compound having same valencies on double bonded 'C' atom do not show G.I.

Watch Video Solution On Doubtnut App

Q-28 - 20594685

The two compounds shown below are :



(A) Diastereomers

(B) enantiomers

(C) epimers

(D) regiomers

CORRECT ANSWER: B

SOLUTION:

Given 2 compounds are mirror images of each other and are not superimpossible on each other so are enantiomers.

Watch Video Solution On Doubtnut App

Q-29 - 20594695

Total number of stereoisomers of the compound 2-4-dichlorocylohexane is :

(A) 0

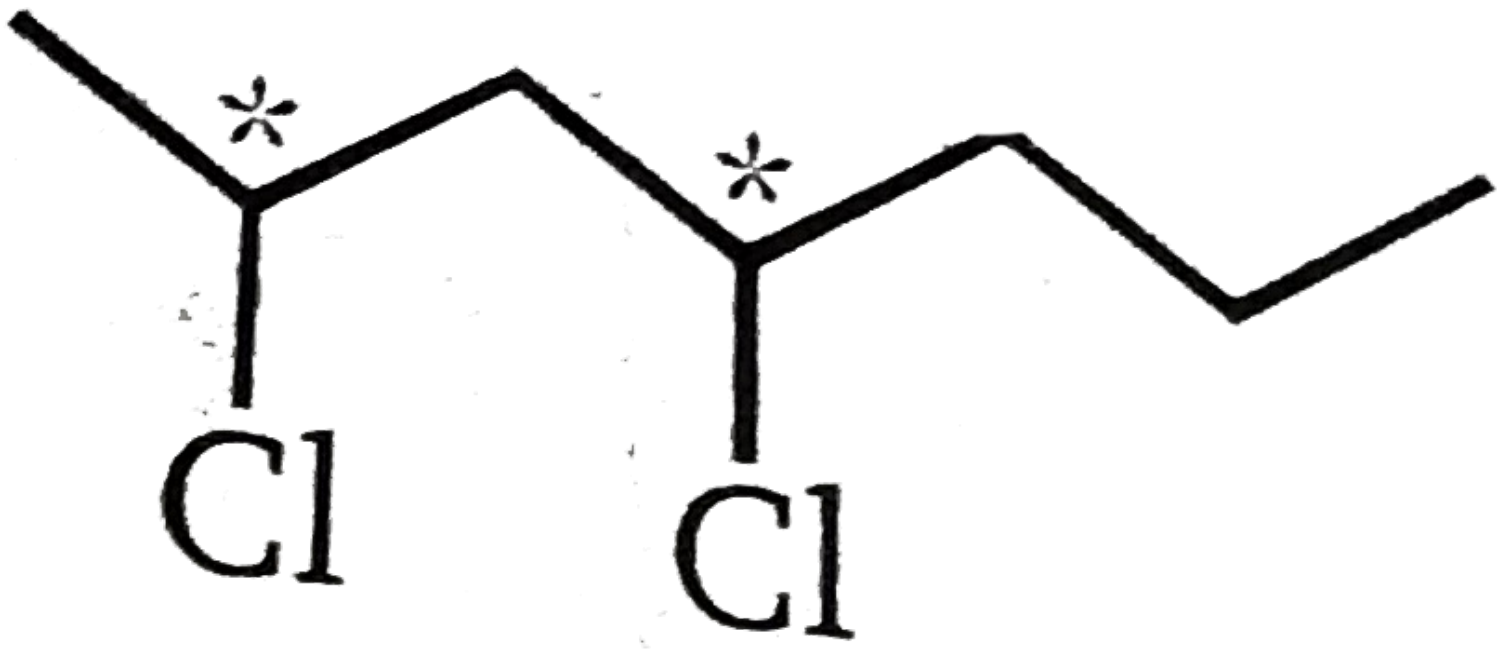
(B) 2

(C) 3

(D) 4

CORRECT ANSWER: D

SOLUTION:



,Total

isomers = $2^2 = 4$

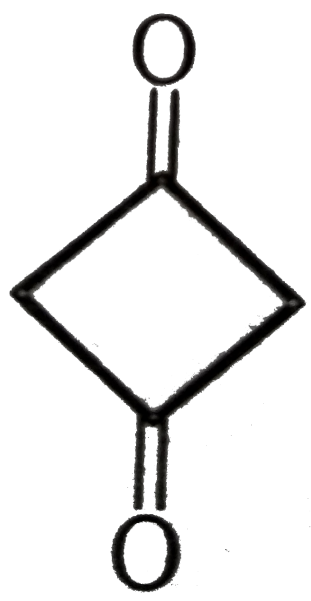
Watch Video Solution On Doubtnut App

Q-30 - 20594696

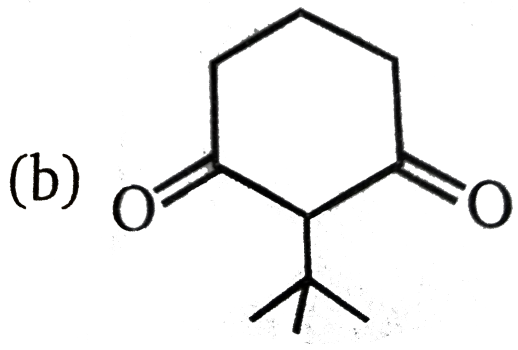
In which of the following keto from is more dominating than enol

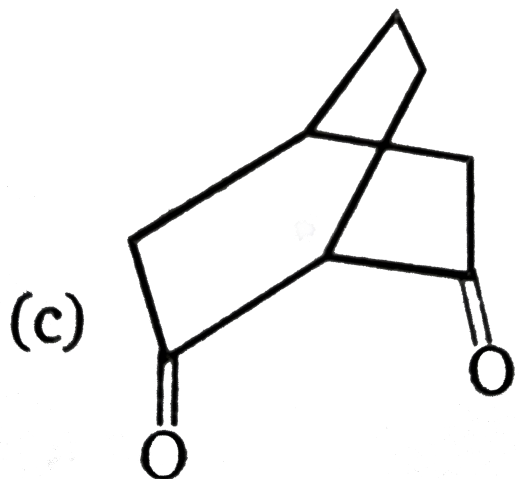
from :

(a)



(A)

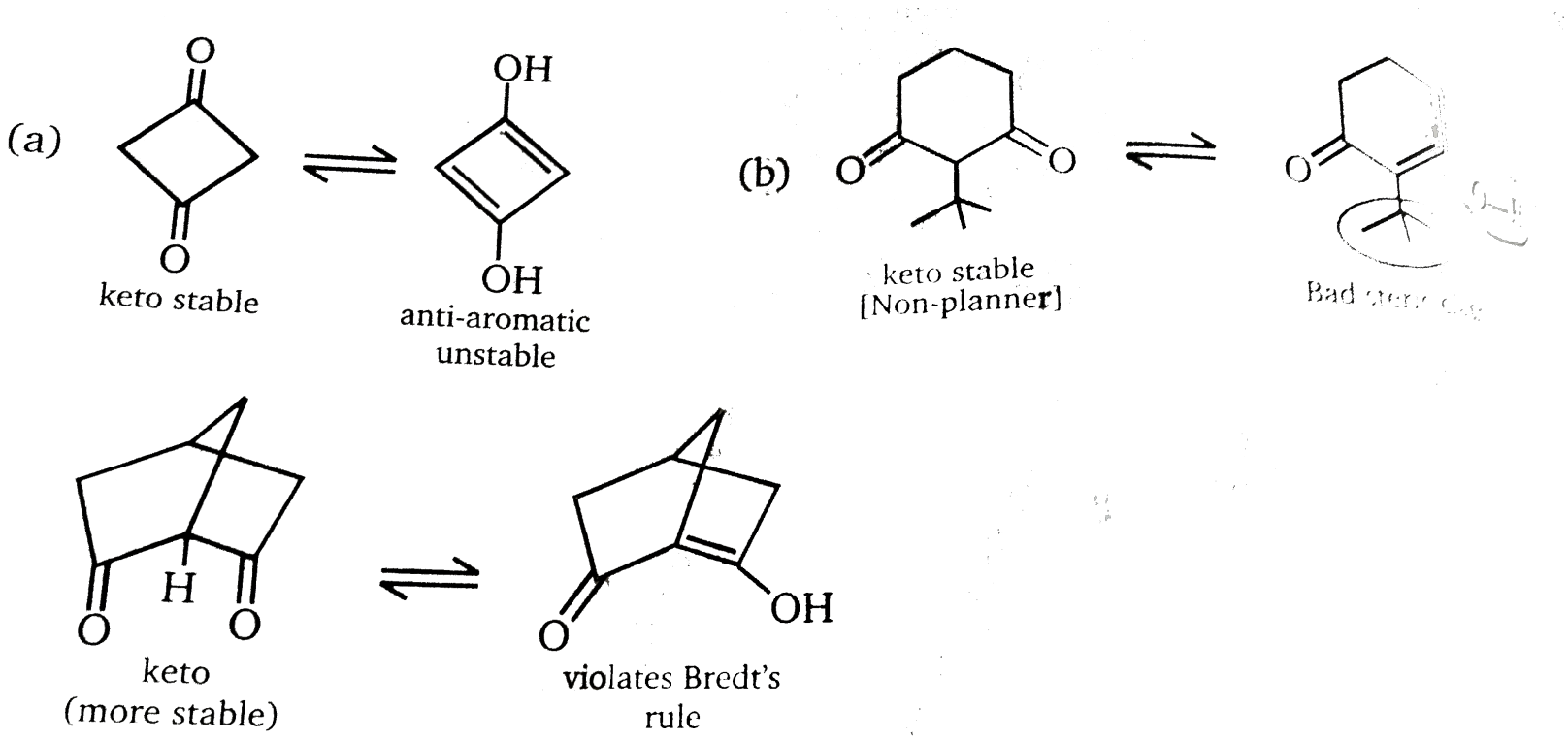
(B) 

(C) 

(D) All of these

CORRECT ANSWER: D

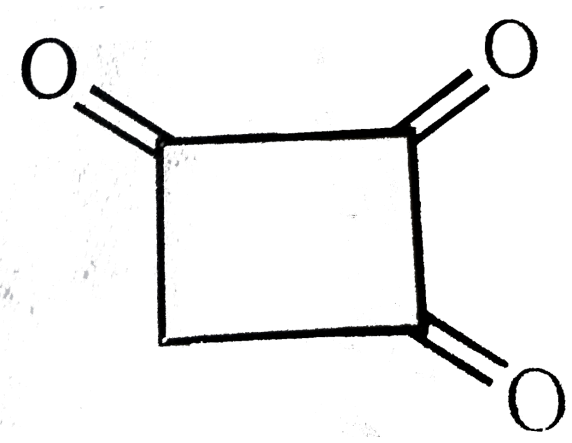
SOLUTION:

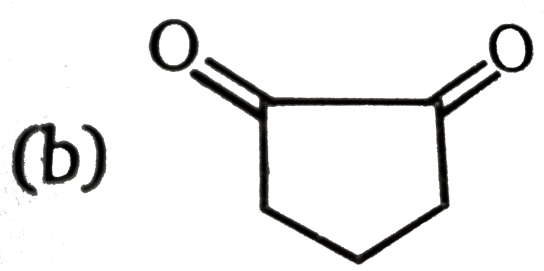


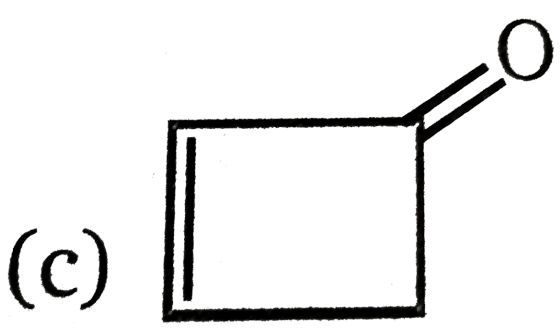
Watch Video Solution On Doubtnut App

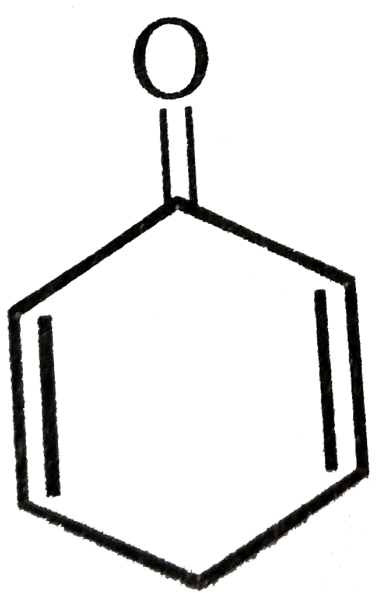
Q-31 - 20594698

Which of the following has unstable enol from?

(A) 

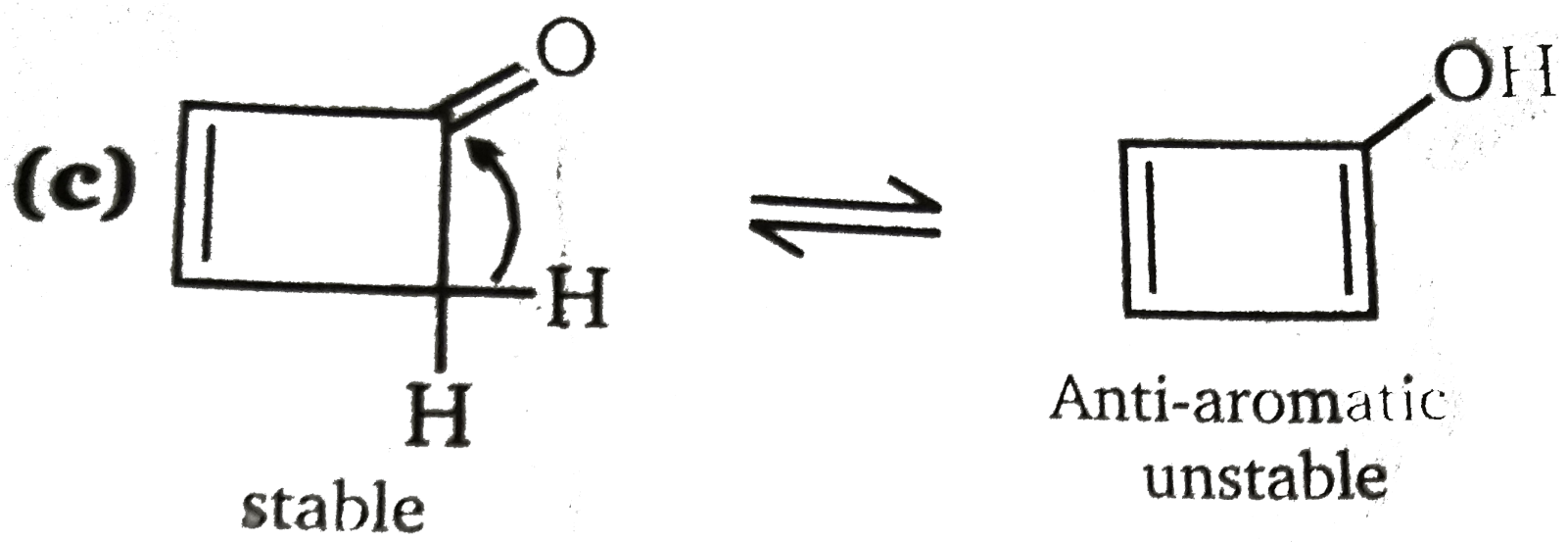
(B) 

(C) 

(D) 

CORRECT ANSWER: C

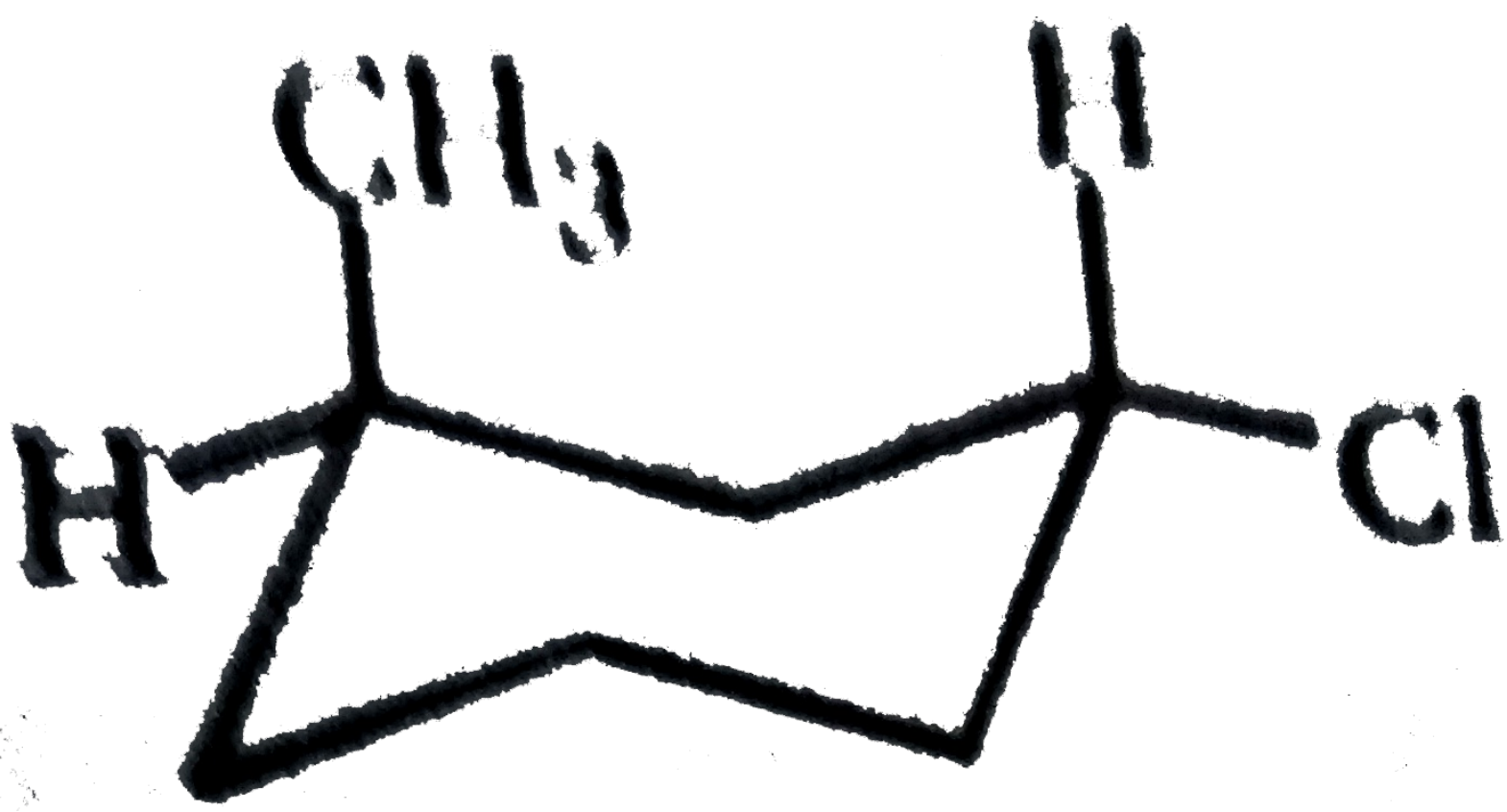
SOLUTION:



Watch Video Solution On Doubtnut App

Q-32 - 20594702

The stereochemistry of this molecule is:



(A) 1R,3R

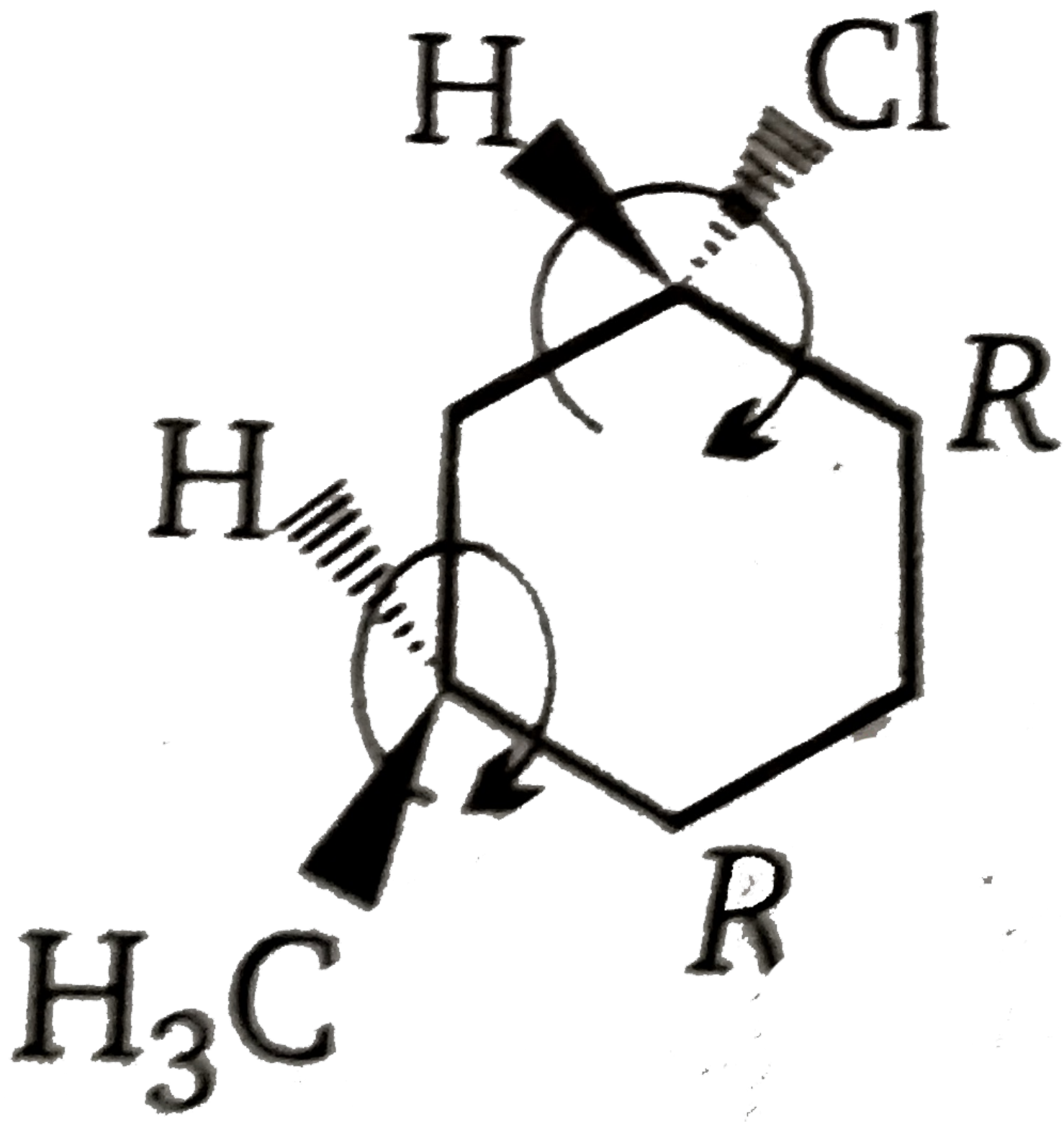
(B) 1R,3S

(C) 1S,3S

(D) 1S,3R

CORRECT ANSWER: A

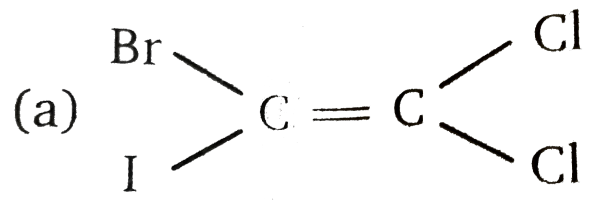
SOLUTION:

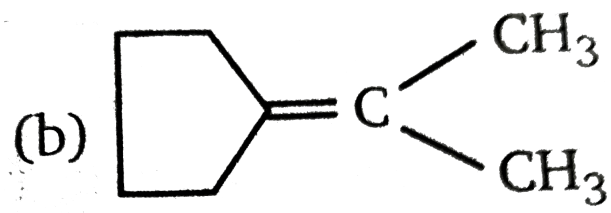


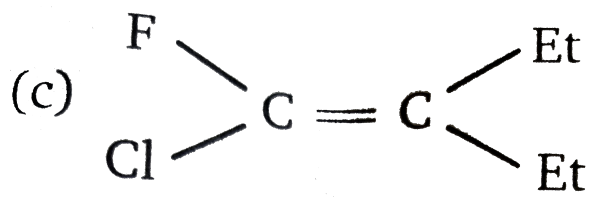
Watch Video Solution On Doubtnut App

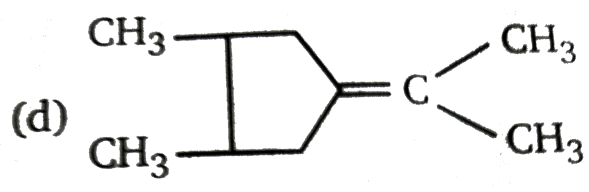
Q-33 - 20594711

Which of the following compound can show geometrical isomerism ?

(A) 

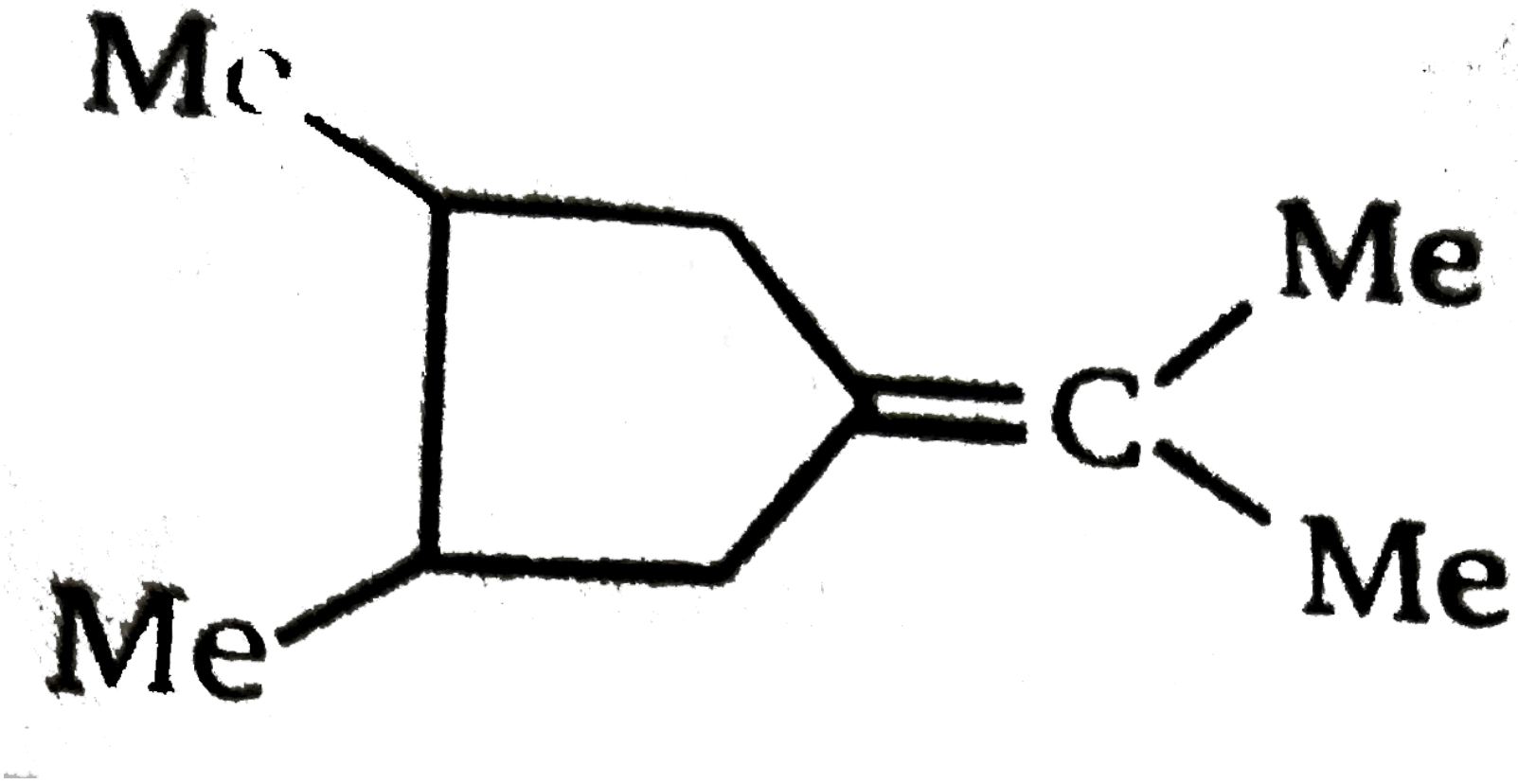
(B) 

(C) 

(D) 

CORRECT ANSWER: D

SOLUTION:



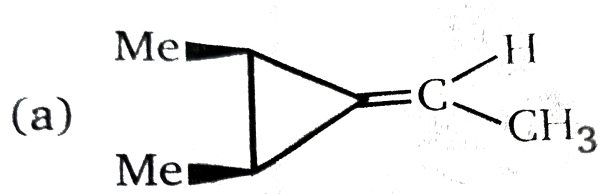
can show

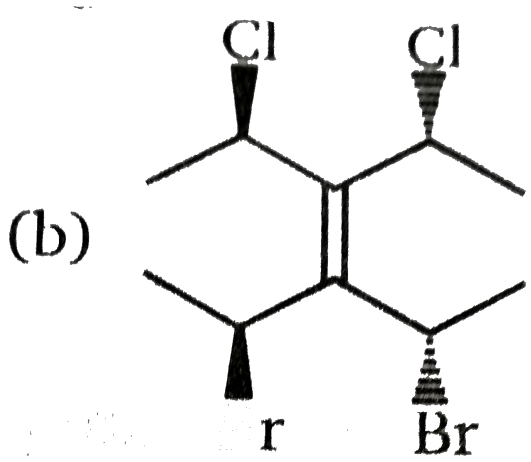
G.I. Along the 5-members ring.

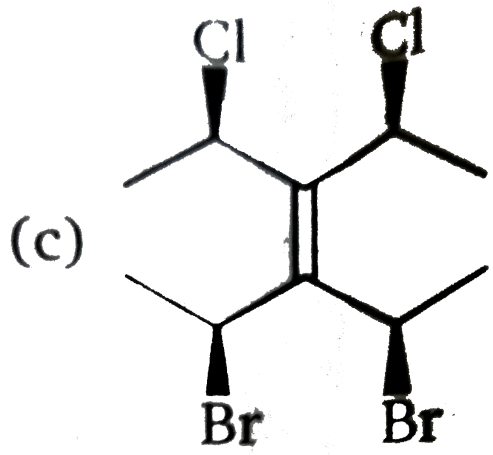
Watch Video Solution On Doubtnut App

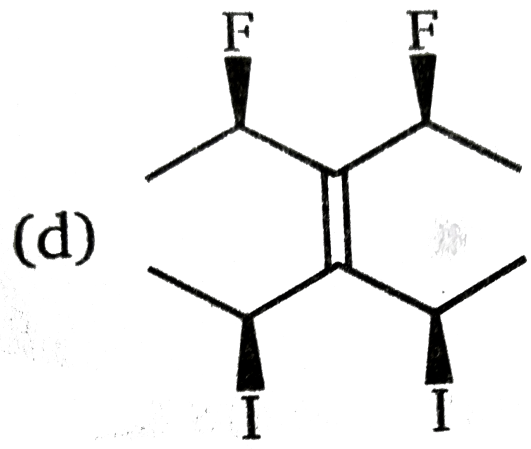
Q-34 - 20594738

Which of the following compound will not show geometrical isomerism across the π-bond

(A) 

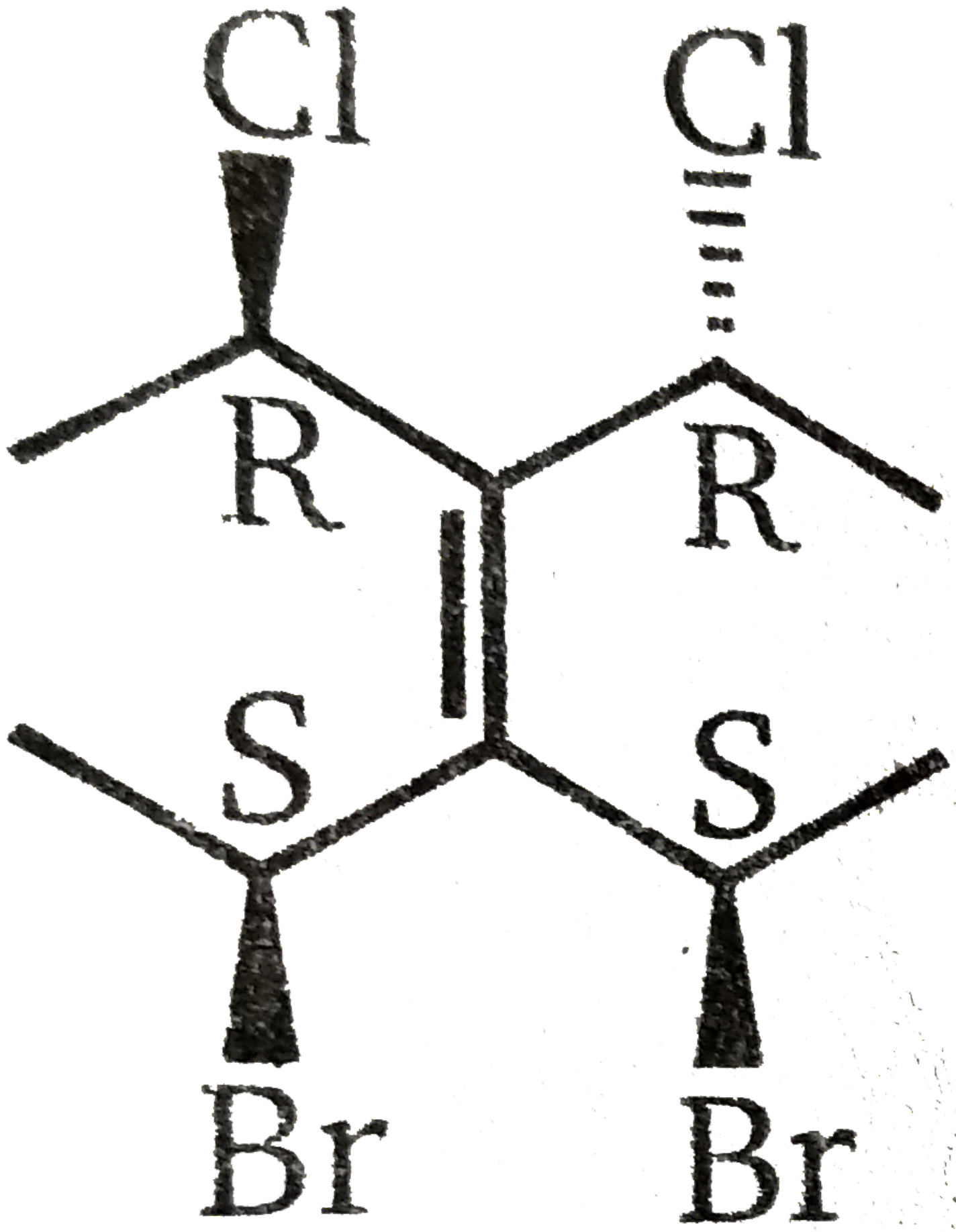
(B) 

(C) 

(D) 

CORRECT ANSWER: B

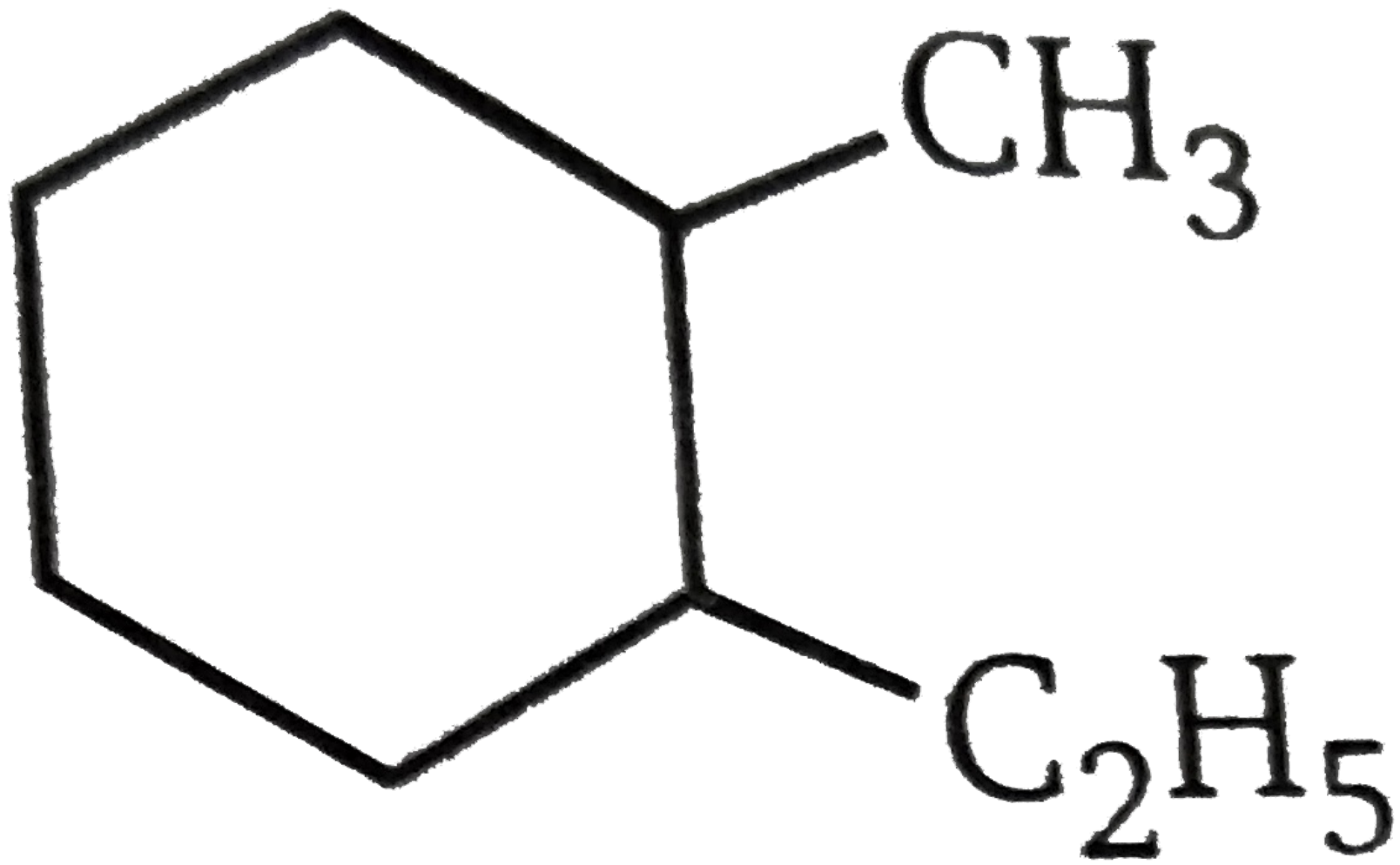
SOLUTION:



Identical groups are present.

Watch Video Solution On Doubtnut App

Q-35 - 20594743



How many geometrical isomers are possible for the above compound ?

(A) 0

(B) 2

(C) 3

(D) 4

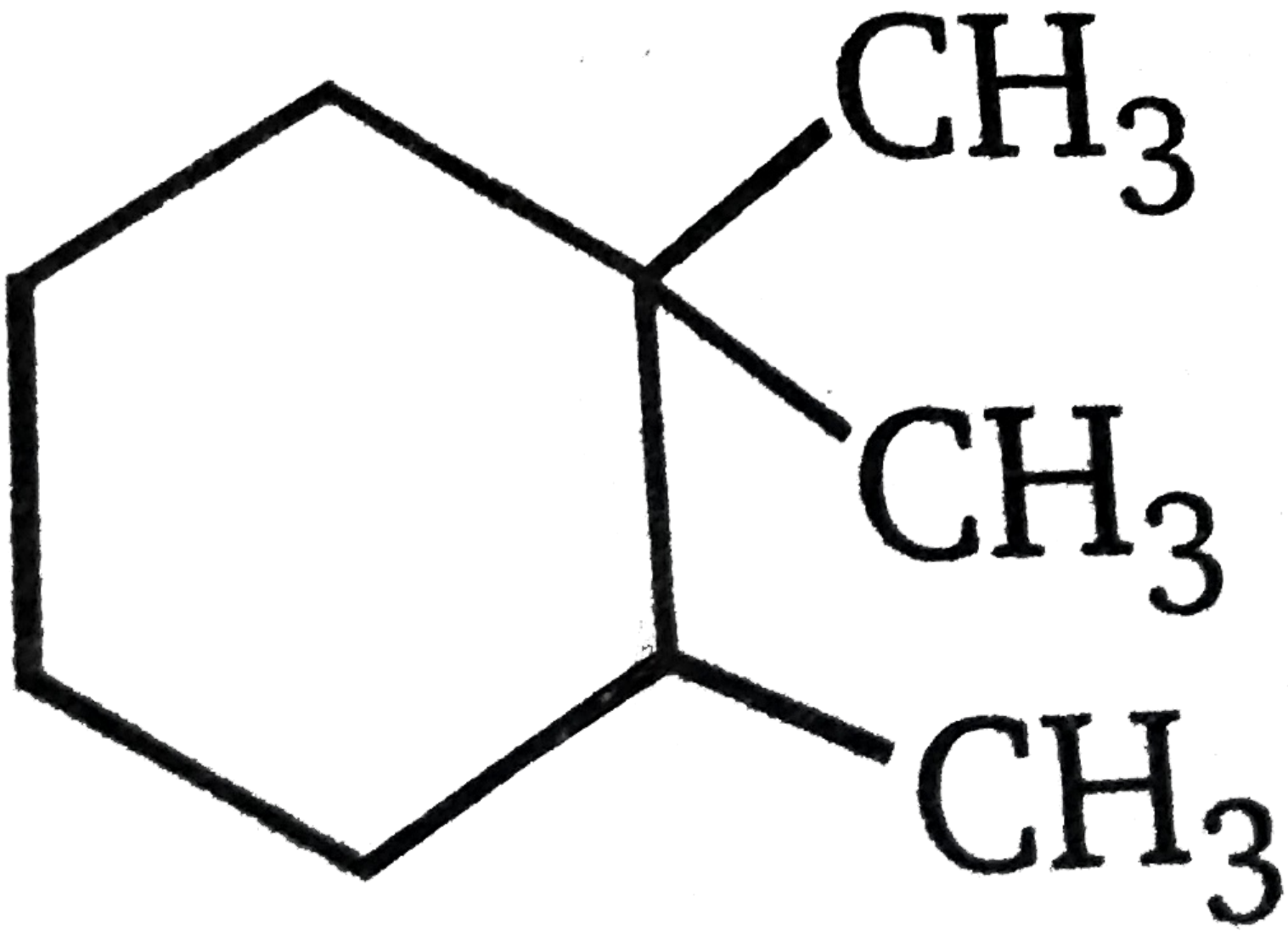
CORRECT ANSWER: B

SOLUTION:

E and Z

Watch Video Solution On Doubtnut App

Q-36 - 20594747



How many geometrical isomers are possible for the above compound ?

(A) 0

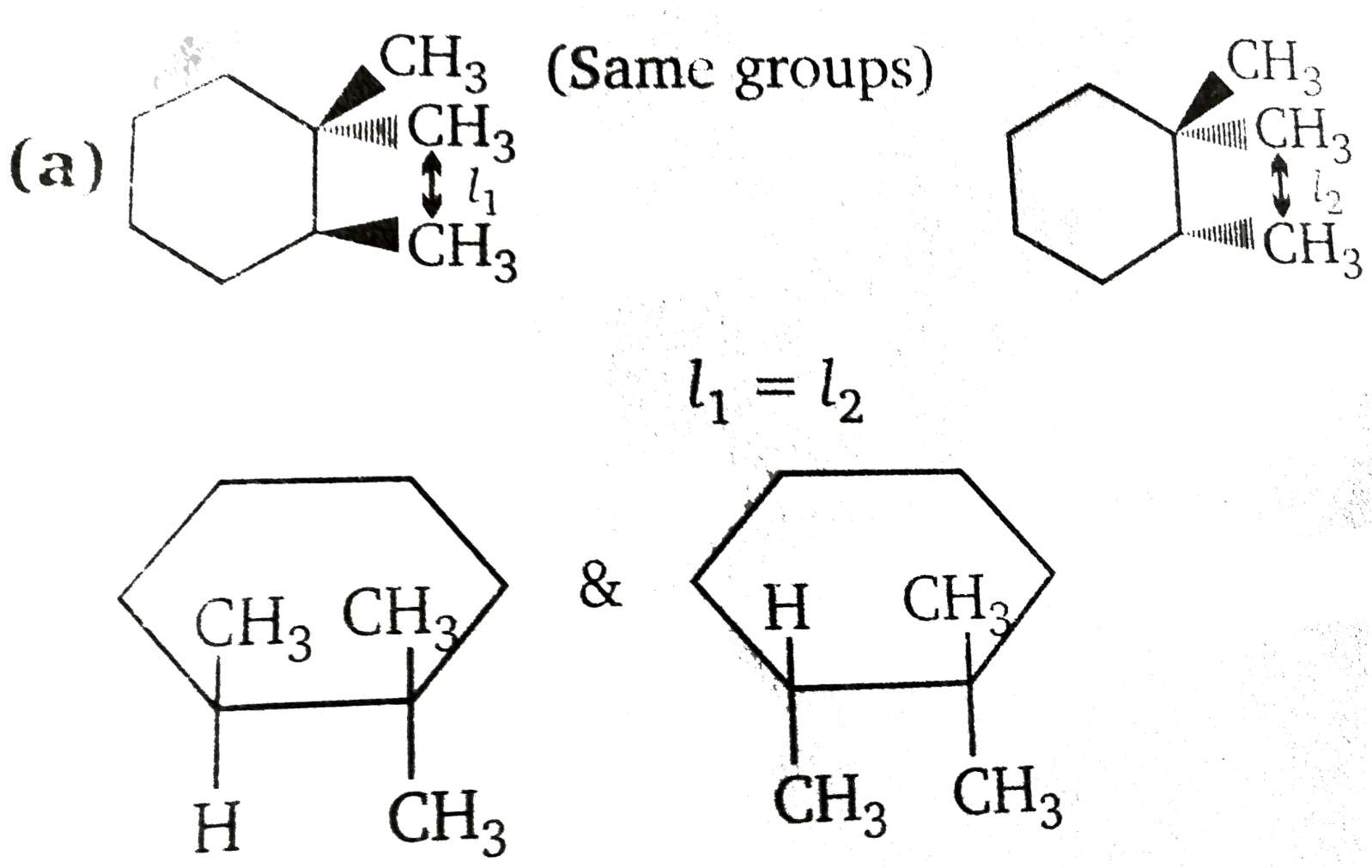
(B) 2

(C) 3

(D) 4

CORRECT ANSWER: A

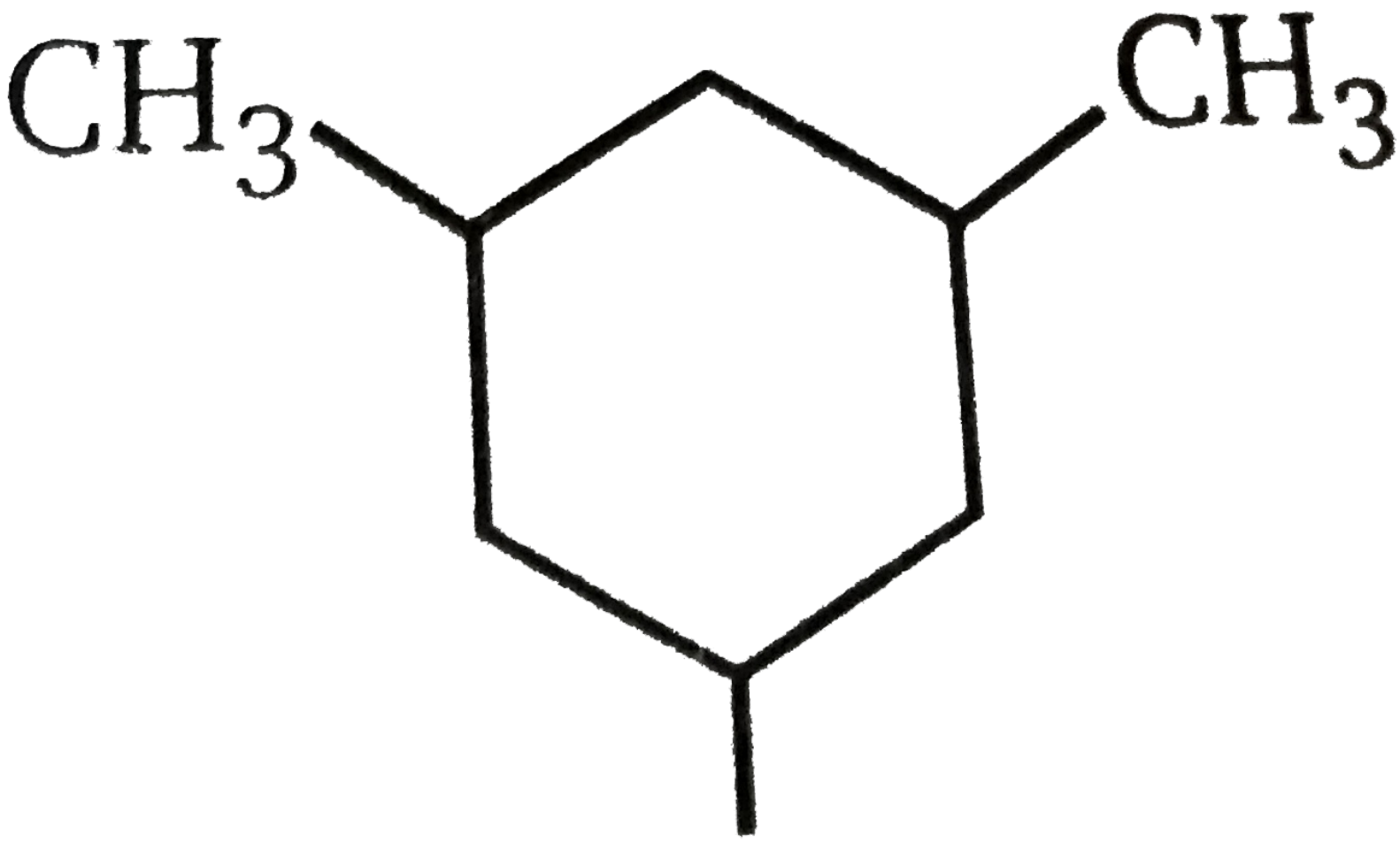
SOLUTION:



are not Geometrical isomers.

Watch Video Solution On Doubtnut App

Q-37 - 20594748



How many geometrical isomers are possible for the above compound ?

(A) 0

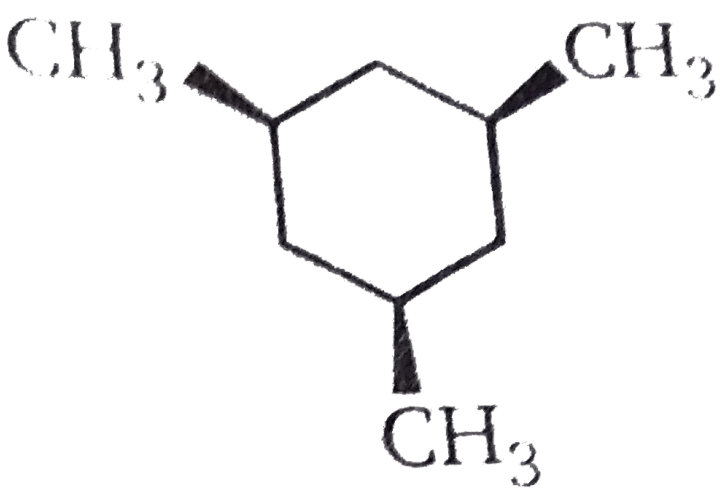
(B) 2

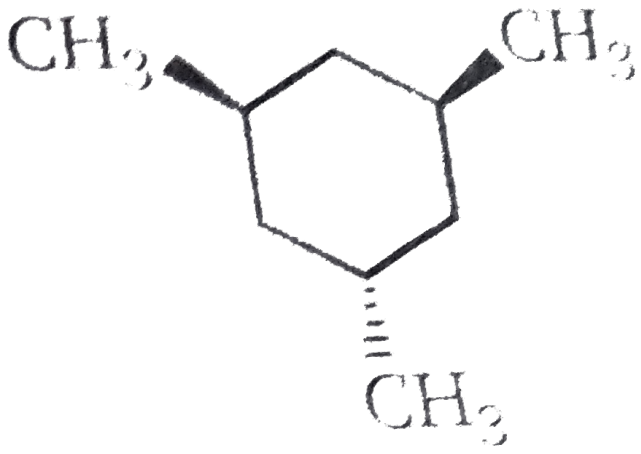
(C) 3

(D) 4

CORRECT ANSWER: B

SOLUTION:





Watch Video Solution On Doubtnut App

Q-38 - 20594752

$CH_2 = CH - CH = CH$
$- CH = CH_2$

How many geometrical isomers ar possible for this compound ?

(A) 2

(B) 3

(C) 4

(D) 8

CORRECT ANSWER: A

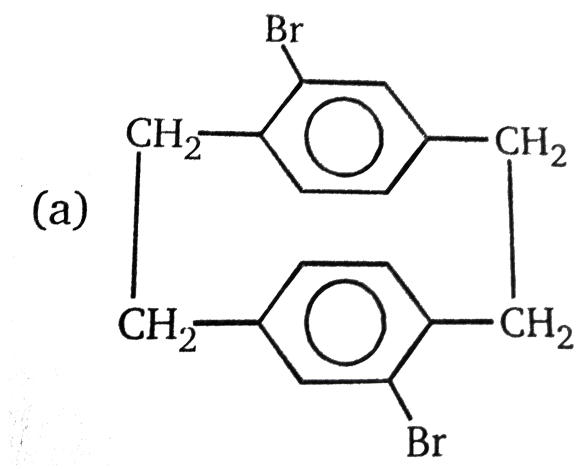
SOLUTION:

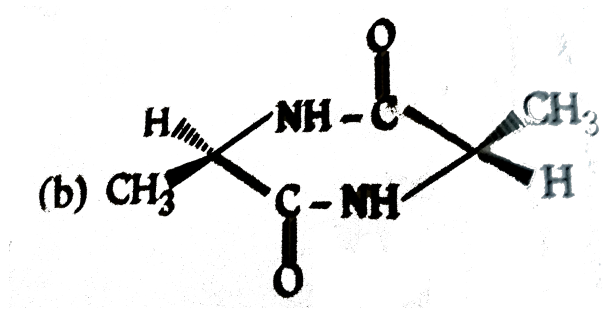
cis & trans across middle π-bond.

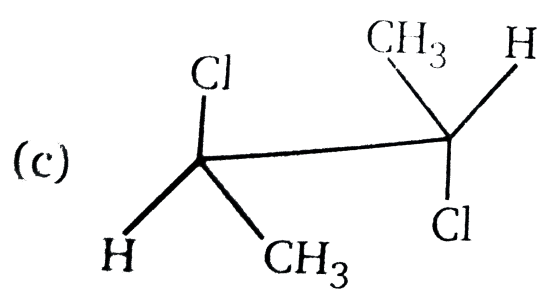
Watch Video Solution On Doubtnut App

Q-39 - 20594760

Which of following compound has center of symmetry ?

(A) 

(B) 

(C) 

(D) All of these

CORRECT ANSWER: D

SOLUTION:

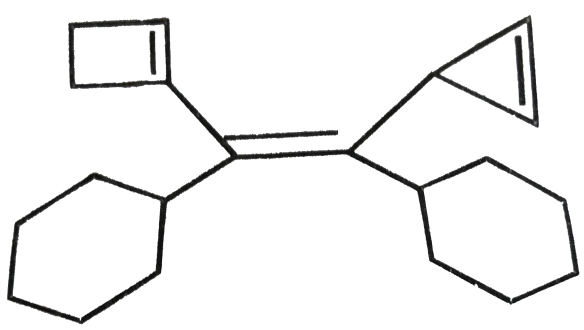
All compounds have centre of symmetry.

Watch Video Solution On Doubtnut App

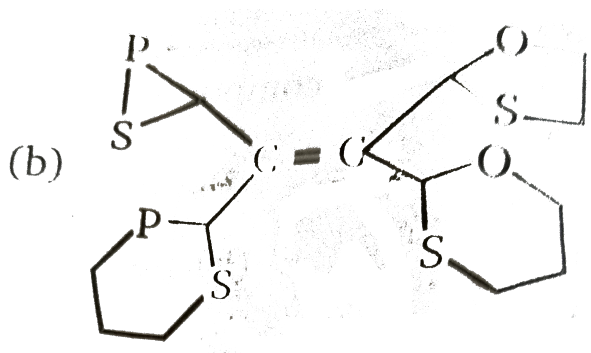
Q-40 - 20594768

Which of the following is E isomer ?

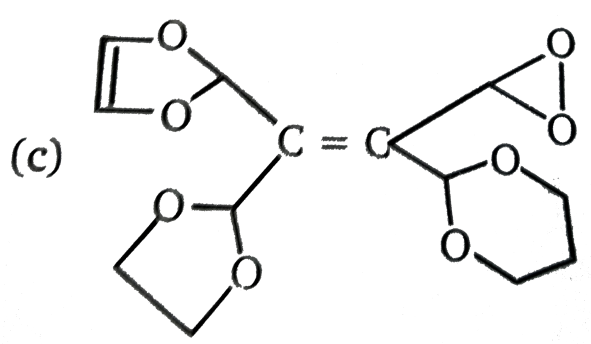
(A)

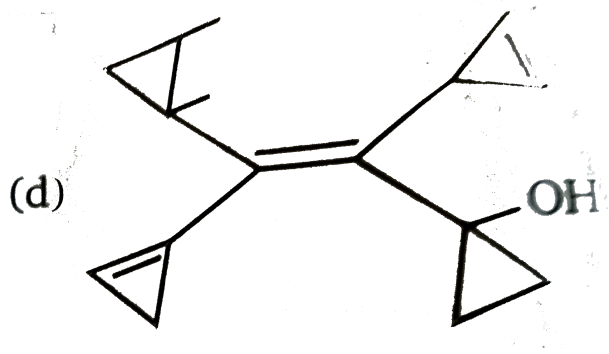


(B)



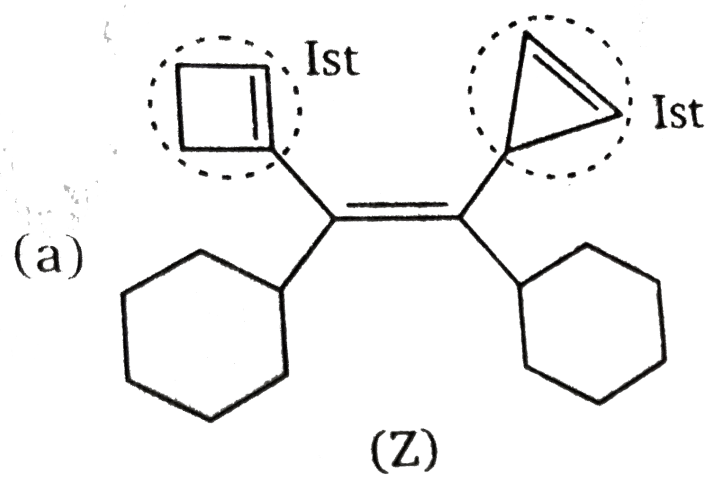
(C)

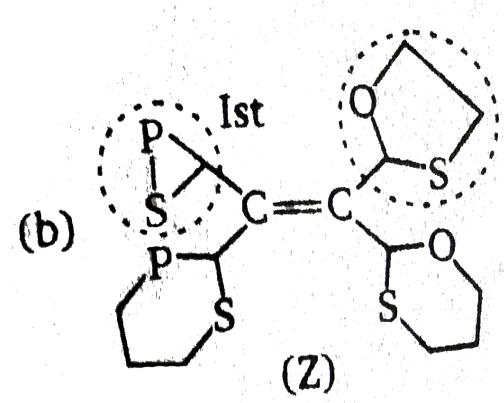


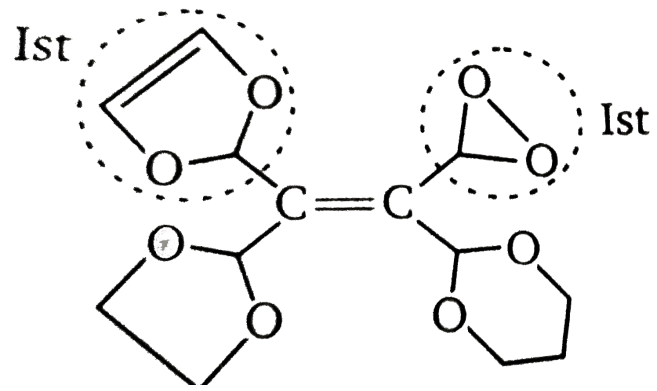
(D) 

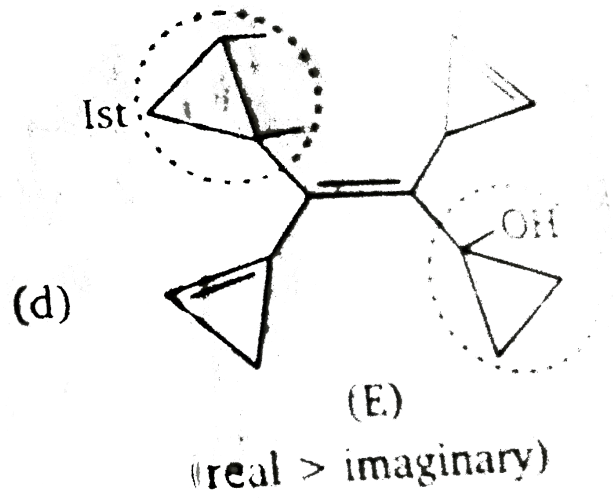
CORRECT ANSWER: D

SOLUTION:





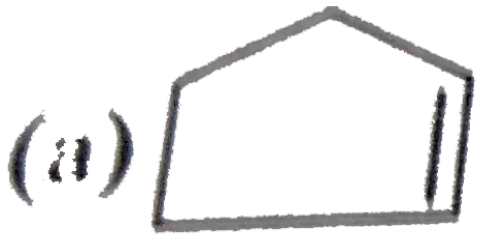


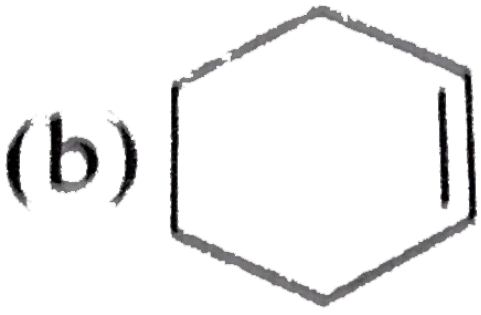


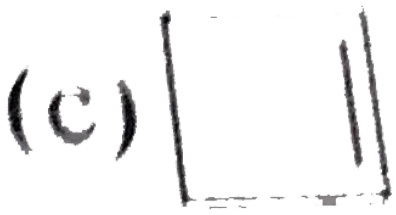
Watch Video Solution On Doubtnut App

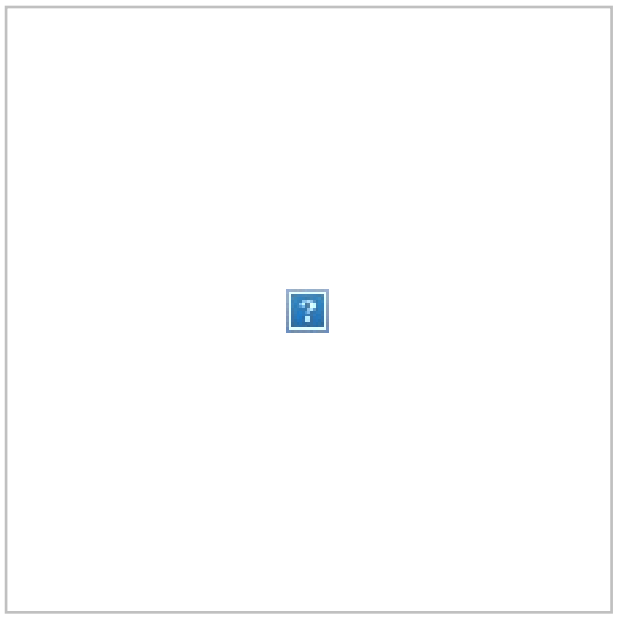
Q-41 - 19381825

Genmetrical isomerism is possibel in :

(A) 

(B) 

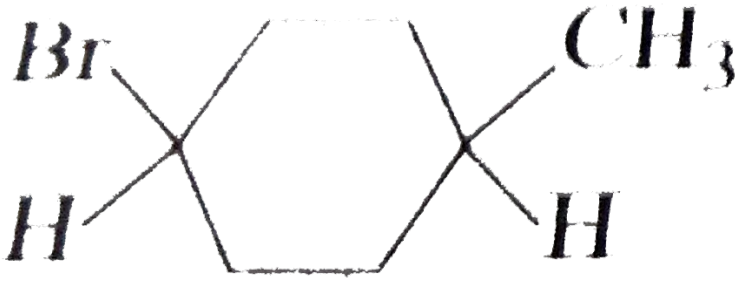
(C) 

(D) 

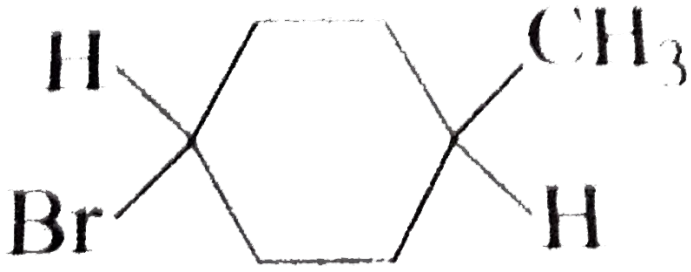
CORRECT ANSWER: D

Watch Video Solution On Doubtnut App

Q-42 - 19381826



and



are

(A) Identical

(B) Diastereimers

(C) Conformers

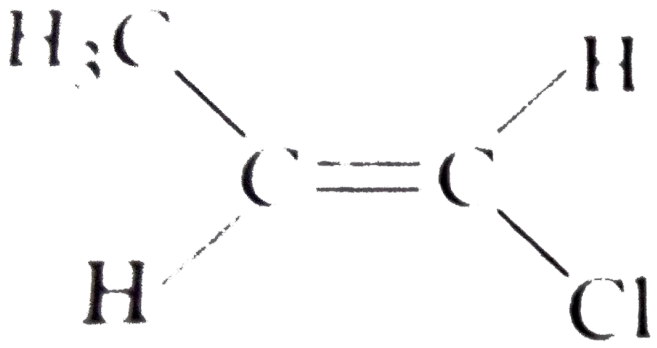
(D) Homo,ogs

CORRECT ANSWER: B

Watch Video Solution On Doubtnut App

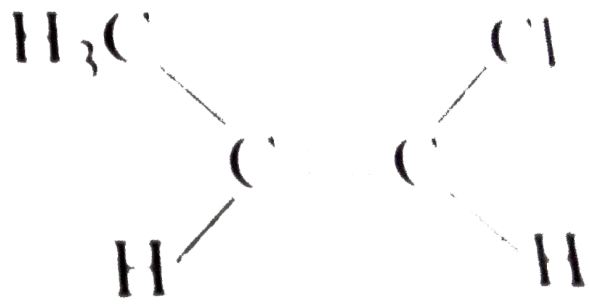
Q-43 - 19381827

Which of the following is correct set of physical properties of the geometrical isomers ?



I

and



II

and

(A)

Dipole	Boiling point	Melting point	Stability
$(a) I > II$	$I > II$	$II > i$	$I > II$

(B)

Dipole	Boiling point	Melting point	Stability
$(b) II > I$	$II > I$	$II > I$	$II > I$

(C)

Dipole	Boiling point	Melting point	Stability
$(c) I > II$	$I > II$	$I > II$	$I > II$

(D)

Dipole	Boiling point	Melting point	Stability
$(c) II > I$	$II > I$	$I > II$	$I > II$

CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-44 - 19381839

The Newman projection formula of most stable sonformation 3-Hydroxypropanal is gauche. It is stable due to

(B) minimum torsional strain

(C) intramloecular torsional strain

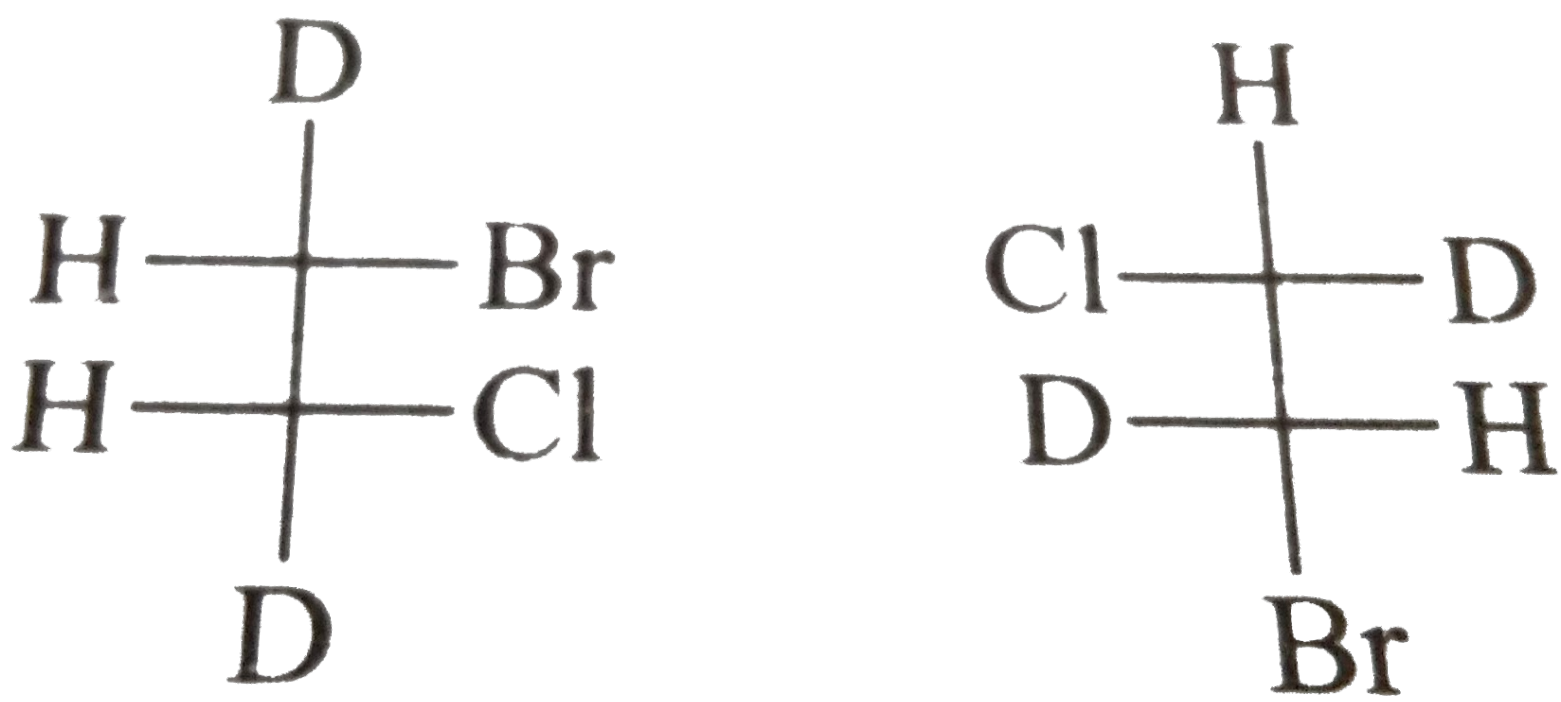
(D) intramolecular hydrogen bonding

CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-45 - 19381849

The two compound which given below are



(A) enantiomers

(B) identical

(C) optically inavtive

(D) diastereomers

CORRECT ANSWER: A

Watch Video Solution On Doubtnut App

Q-46 - 19381861

how many alkenes are poosibel with moleculer formula C_4H_6 ?

(A) 2

(B) 3

(C) 4

(D) 6

CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-47 - 19381862

total many of isomers having molevular formula C_4H_8

(A) 2

(B) 3

(C) 4

(D) 6

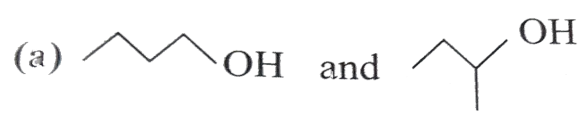
CORRECT ANSWER: D

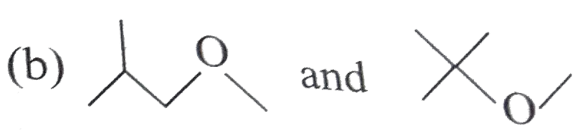
Watch Video Solution On Doubtnut App

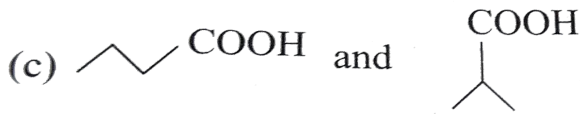
Q-48 - 19381865

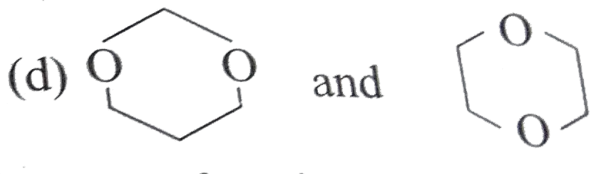
Which of the following pairs of compound are not position isomers

?

(A) 

(B) 

(C) 

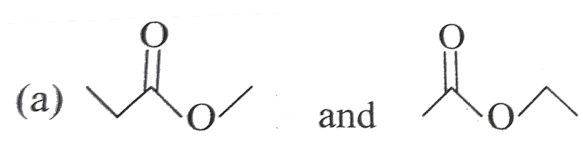
(D) 

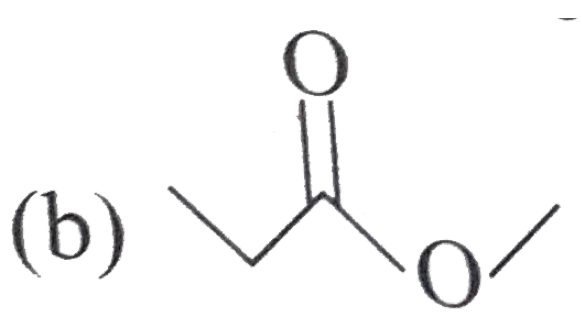
CORRECT ANSWER: C

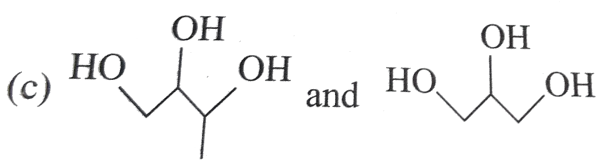
Watch Video Solution On Doubtnut App

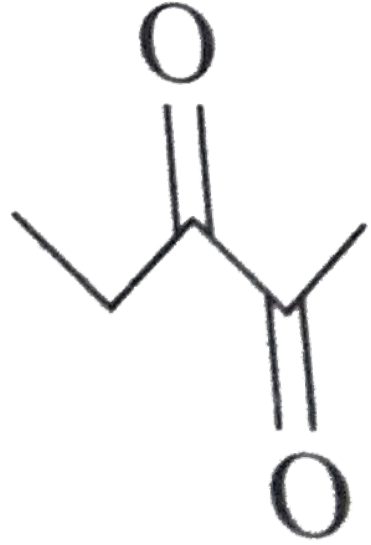
Q-49 - 19381866

Which of the following pairs of compounds are functional isomers ?

(A) 

(B) 

(C) 

(d) 

(D)

CORRECT ANSWER: B

Watch Video Solution On Doubtnut App

Q-50 - 19381870

Compound wich is not isomeric with diethly ether is

(A) methly-n- propyl ether

(B) 1- butanol

(C) 2- methl-2-propanol

(D) butanone

CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-51 - 19381873

Which funcatonal isomers of ethers are :

(A) ketone aldehyde

(B) aldehyde

(C) alcohols

(D) easter

CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-52 - 19381875

Total number of conformation of ethane is :

(A) 2

(B) 3

(C) 4

(D) Infinite

CORRECT ANSWER: D

Watch Video Solution On Doubtnut App

Q-53 - 19381877

Maleic acid and fumaric acid are :

(A) Position isomer

(B) geometrical isomer

(C) Enantiomers

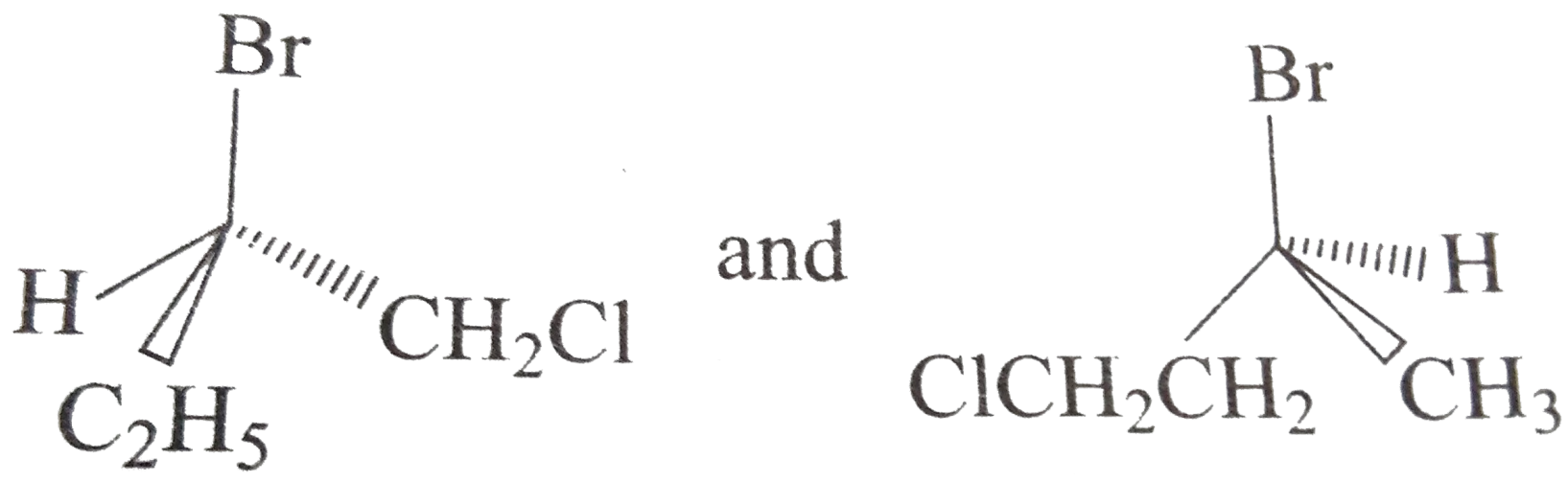
(D) Functional isomer

CORRECT ANSWER: B

Watch Video Solution On Doubtnut App

Q-54 - 19381887

The given pair are :



(A) enantiomers

(B) diastereomers

(C) homomers

(D) Constitutional isomer

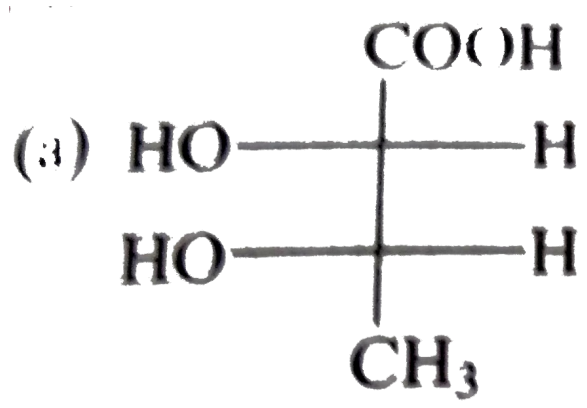
CORRECT ANSWER: D

Watch Video Solution On Doubtnut App

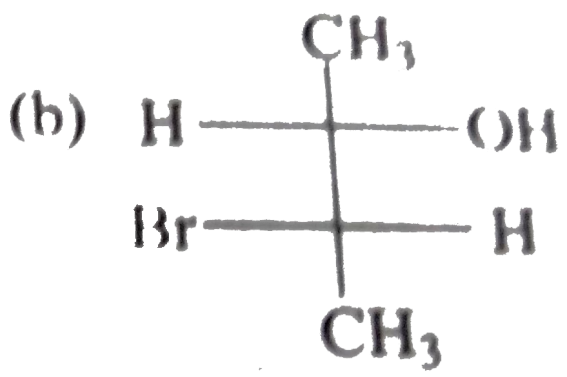
Q-55 - 19381890

Which of the following is erythro from and optically inactive

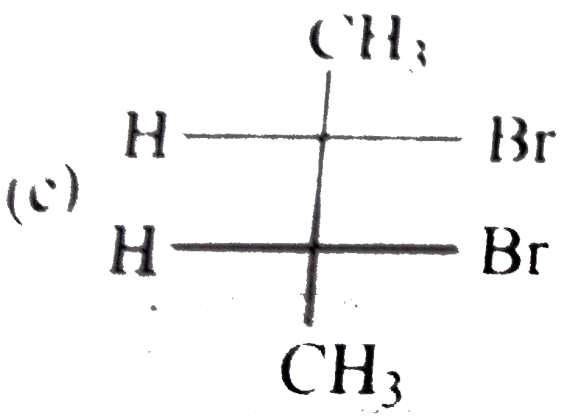
(A)



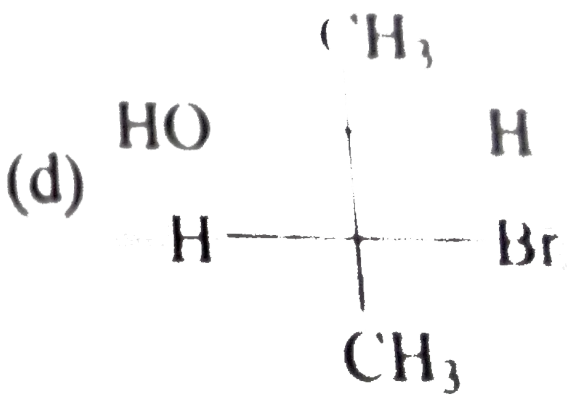
(B)



(C)



(D)



CORRECT ANSWER: C

Watch Video Solution On Doubtnut App

Q-56 - 19381891

Which of the following would exhibit sid- trans isomerism ?

(A) $Ch_3CH_2CH = CH_2$

(B) $CICH = CHCI$

(C) $CICH = \mathbb{C}I_2$

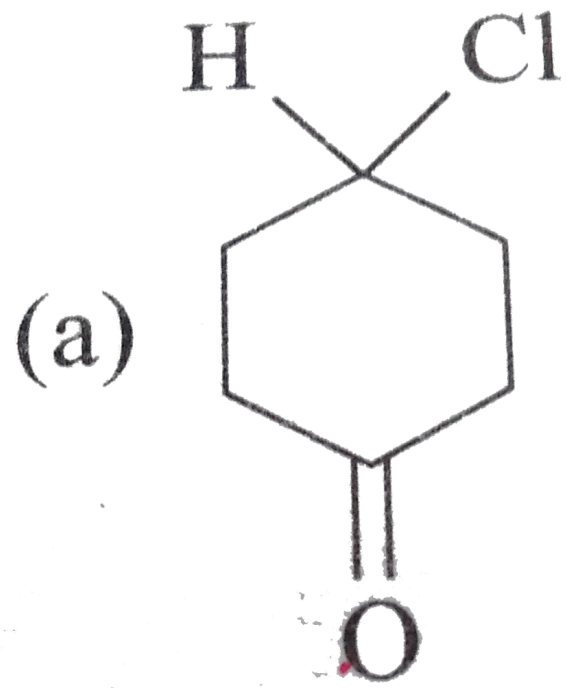
(D) $CH_2 = CH - COOH$

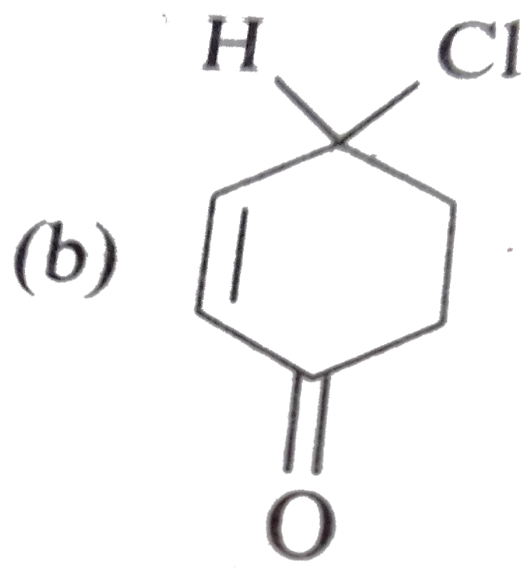
CORRECT ANSWER: B

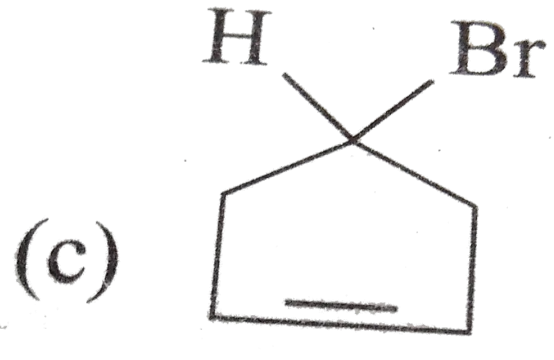
Watch Video Solution On Doubtnut App

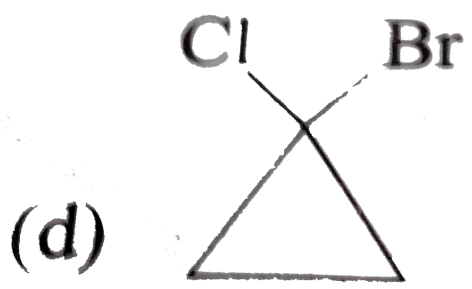
Q-57 - 19381895

Which of the following compound is chrial

(A) 

(B) 

(C) 

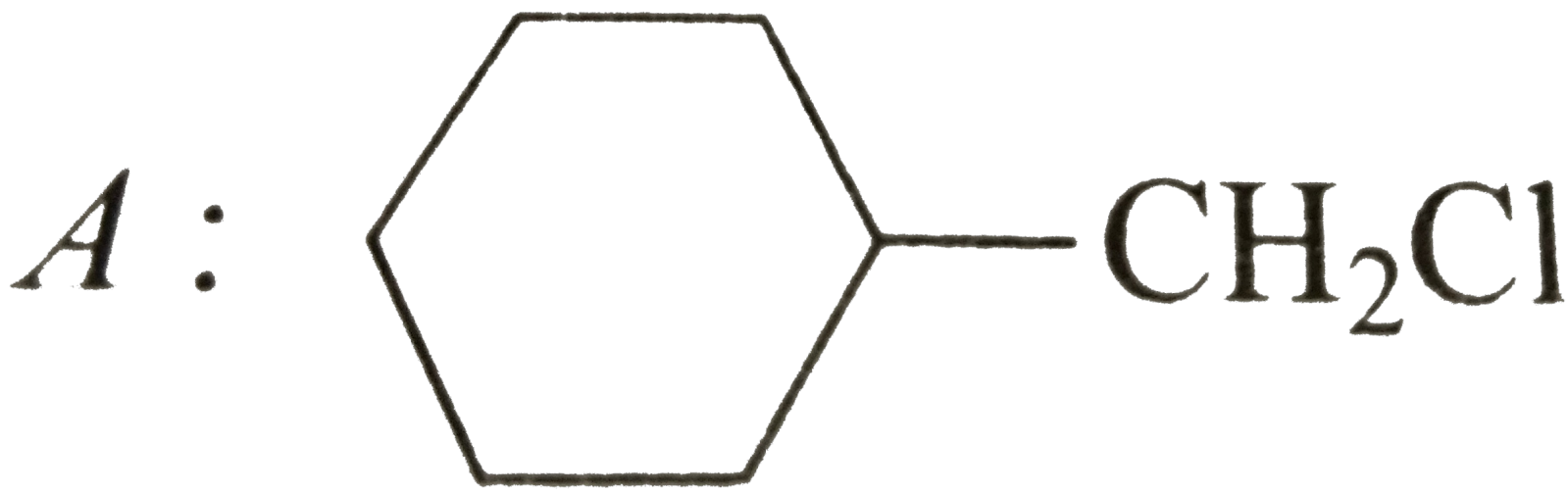
(D) 

CORRECT ANSWER: B

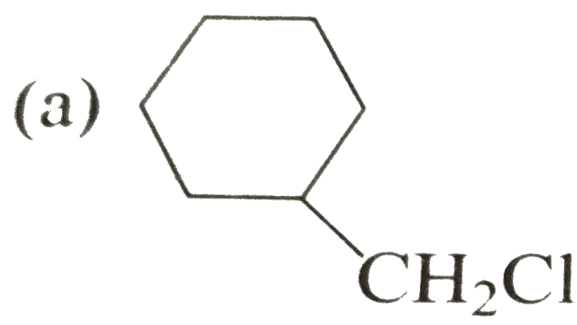
Watch Video Solution On Doubtnut App

Q-58 - 19381922

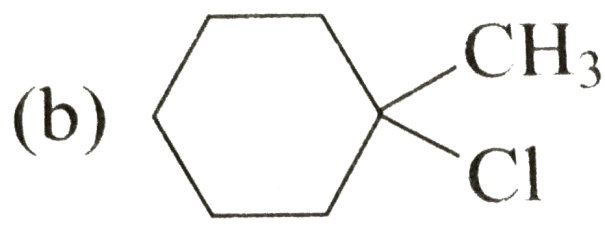
Which os not position isomer of A



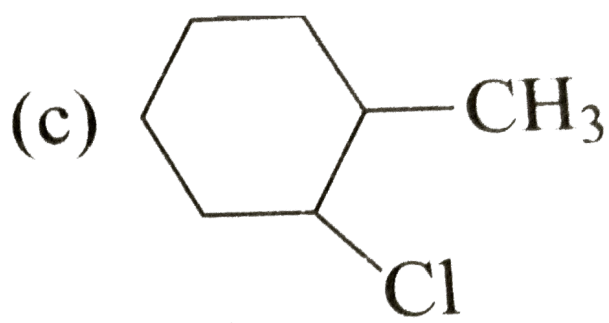
(A)



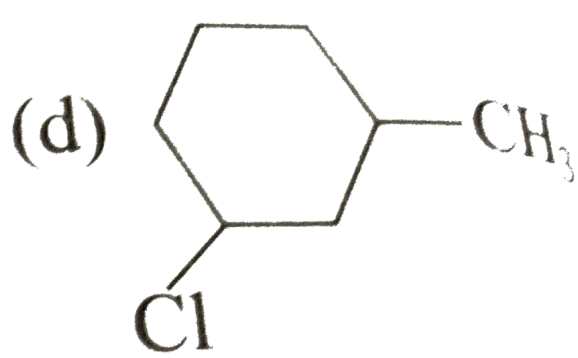
(B)



(C)



(D)



CORRECT ANSWER: A

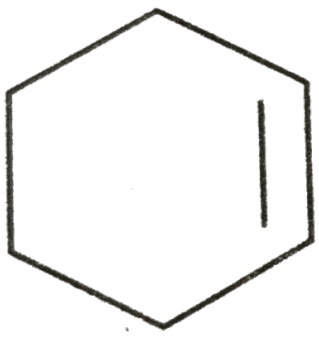
Watch Video Solution On Doubtnut App

Q-59 - 19381926

Cis trans isomerism is shown by

(a)

(A)

(b) 

(B)

(c)

(C)

d)

(D)

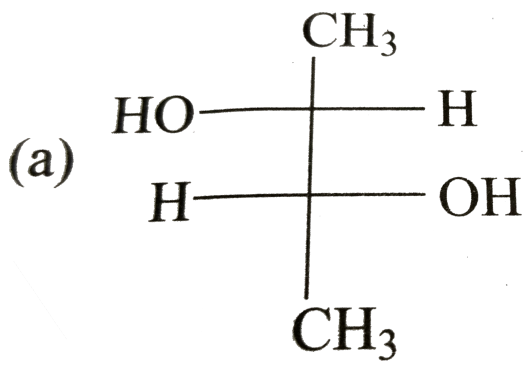
CORRECT ANSWER: A

Watch Video Solution On Doubtnut App

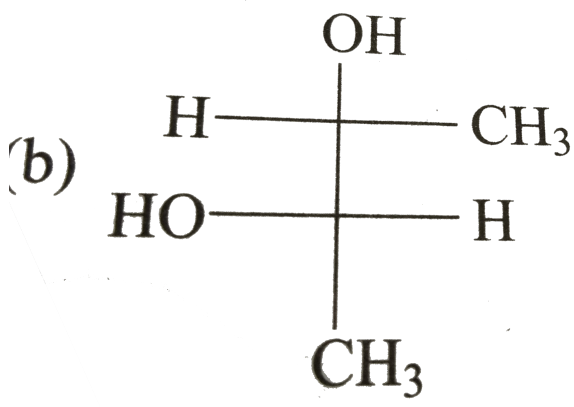
Q-60 - 19381931

(2R,3r)-2,3 bantanediol is :

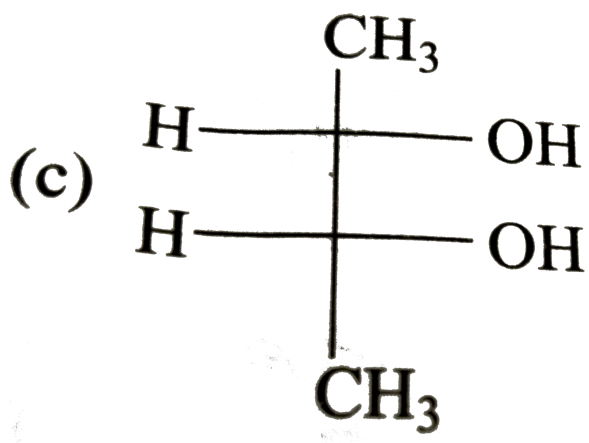
(A)



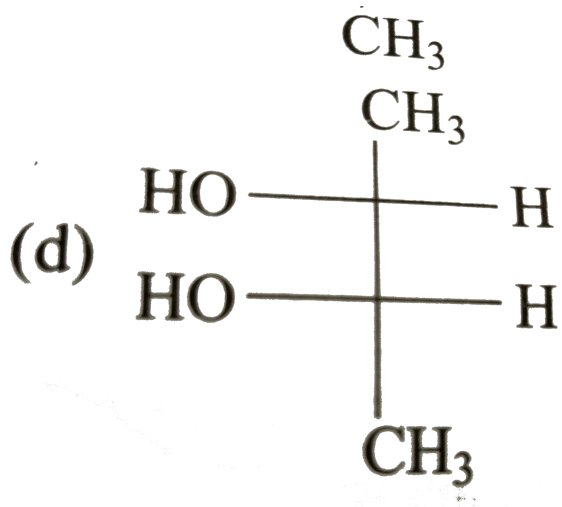
(B)



(C)



(D)



CORRECT ANSWER: A

Watch Video Solution On Doubtnut App

Apne doubts ka Instant video solution paayein

Abhi Doubtnut try karein!

GET IT ON Google Play

Whatsapp your doubts on 8400400400

doubtnut