

PYQSide

NEET ISOMERISM — PYQS

Max. Marks: 160

Questions: 40

Section A (MCQ)

Q.1 Match List I with List II : [NEET (UG) 2026]

List I (Complex)		List II (Type of isomerism)	
A.	[Pt(NH ₃) ₂ Cl ₂]	I.	Optical
B.	[Co(en) ₃] ³⁺	II.	Solvate
C.	[Co(NH ₃) ₅ NO ₂]Cl ₂	III.	Geometrical
D.	[Cr(H ₂ O) ₆]Cl ₃	IV.	Linkage

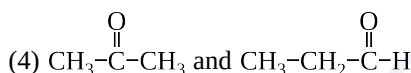
- (1) A-I, B-III, C-II, D-IV (2) A-II, B-IV, C-III, D-I
(3) A-III, B-I, C-IV, D-II (4) A-III, B-I, C-II, D-IV

Scan or tap for the
full solution



Q.2 The pair of molecules that are metamers among the following is : [NEET (UG) 2026]

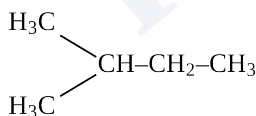
- (1) CH₃OCH₂CH₂CH₃ and CH₃CH₂OCH₂CH₃
(2) CH₃CH₂CH₂OH and CH₃-CH(OH)-CH₃
(3) CH₃CH₂CH₂CH₂CH₃ and (CH₃)₂CHCH₂CH₃



Scan or tap for the
full solution



Q.3 How many products (including stereoisomers) are expected from monochlorination of the following compound? [NEET (UG) 2025]



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

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full solution



Q.4 Total number of possible isomers (both structural as well as stereoisomers) of cyclic ethers of molecular formula C₄H₈O is : [NEET (UG) 2025]

- (1) 10 (2) 11 (3) 6 (4) 8

Scan or tap for the
full solution



Q.5 Which one of the following compounds can exist as cis-trans isomers? [NEET (UG) 2025]

- (1) 1,1-Dimethylcyclopropane
(2) 1,2-Dimethylcyclohexane
(3) Pent-1-ene
(4) 2-Methylhex-2-ene

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full solution



Q.6 The incorrect statement regarding chirality is [NEET (UG) 2022]

- (1) S_N1 reaction yields 1 : 1 mixture of both enantiomers
(2) The product obtained by S_N2 reaction of haloalkane having chirality at the reactive site shows inversion of configuration
(3) Enantiomers are superimposable mirror images on each other
(4) A racemic mixture shows zero optical rotation

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full solution



Q.7 The compound which shows metamerism is : [NEET (UG) 2021]

- (1) C₄H₁₀O (2) C₅H₁₂ (3) C₃H₈O (4) C₃H₆O

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full solution



Q.8 Dihedral angle of least stable conformer of ethane is : [NEET (UG) 2021]

- (1) 0° (2) 120° (3) 180° (4) 60°

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full solution



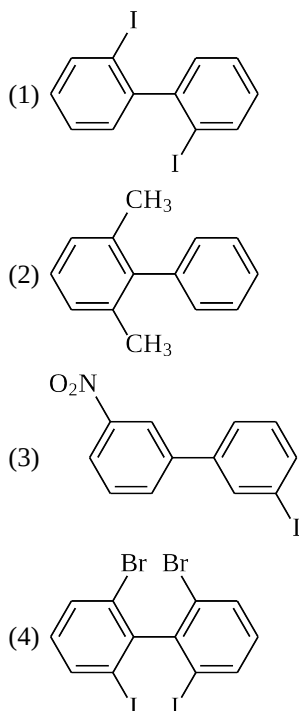
Q.9 With respect to the conformers of ethane, which of the following statements is true? [NEET 2017]

- (1) Bond angle changes but bond length remains same.
(2) Both bond angle and bond length change.
(3) Both bond angle and bond length remain same.
(4) Bond angle remains same but bond length changes.

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full solution



Q.10 Which of the following biphenyls is optically active ? [NEET 2016 (Phase 1)]



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Q.11 The correct statement regarding the comparison of staggered and eclipsed conformations of ethane, is

[NEET 2016 (Phase 1)]

- (1) the eclipsed conformation of ethane is more stable than staggered conformation even though the eclipsed conformation has torsional strain
- (2) the staggered conformation of ethane is more stable than eclipsed conformation, because staggered conformation has no torsional strain
- (3) the staggered conformation of ethane is less stable than eclipsed conformation, because staggered conformation has torsional strain
- (4) the eclipsed conformation of ethane is more stable than staggered conformation, because eclipsed conformation has no torsional strain.

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Q.12 The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha-carbon, is

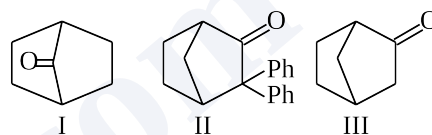
[NEET 2016 (Phase 1)]

- (1) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation
- (2) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism
- (3) a carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol
- (4) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.

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Q.13 Which among the given molecules can exhibit tautomerism?

[NEET 2016 (Phase 2)]



- (1) III only
- (2) Both I and III
- (3) Both I and II
- (4) Both II and III

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Q.14 The possible stereo-structures of $\text{CH}_3\text{CHOHCOOH}$, which are optically active, are called

[AIPMT 2015]

- (1) atropisomers
- (2) enantiomers
- (3) mesomers
- (4) diastereomers

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Q.15 In an $\text{S}_{\text{N}}1$ reaction on chiral centers, there is

[AIPMT 2015]

- (1) inversion more than retention leading to partial racemisation
- (2) 100% retention
- (3) 100% inversion
- (4) 100% racemisation

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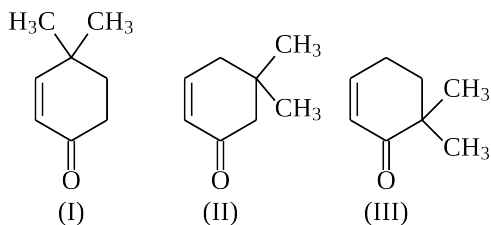
Q.16 The number of structural isomers possible from the molecular formula $\text{C}_3\text{H}_9\text{N}$ is

[AIPMT 2015]

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

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Q.17 Given :



Which of the given compounds can exhibit tautomerism?

[AIPMT 2015 (Cancelled)]

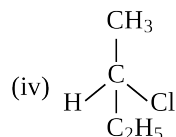
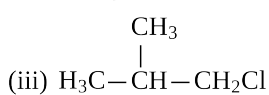
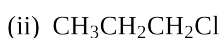
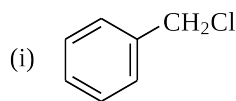
- (1) II and III (2) I, II and III
(3) I and II (4) I and III

Scan or tap for the full solution



Q.18 Which of the following compounds will undergo racemisation when solution of KOH hydrolyses?

[AIPMT 2014]



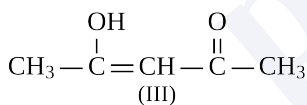
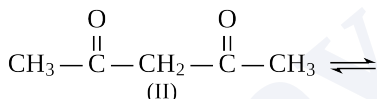
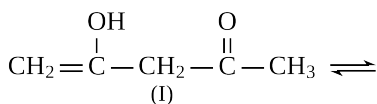
- (1) (i) and (ii) (2) (ii) and (iv)
(3) (iv) (4) (i) and (iv)

Scan or tap for the full solution



Q.19 The order of stability of the following tautomeric compounds is

[NEET 2013]

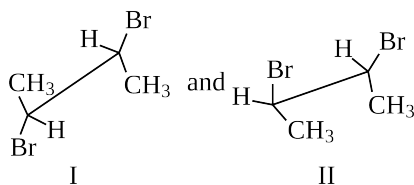


- (1) II > I > III (2) II > III > I
(3) I > II > III (4) III > II > I

Scan or tap for the full solution



Q.20 Given:



I and II are

[NEET 2013 (Karnataka)]

- (1) identical
(2) a pair of conformers
(3) a pair of geometrical isomers
(4) a pair of optical isomers

Scan or tap for the full solution



Q.21 Number of isomeric alcohols of molecular formula $\text{C}_6\text{H}_{14}\text{O}$ which give positive iodoform test is

[NEET 2013 (Karnataka)]

- (1) three (2) four (3) five (4) two

Scan or tap for the full solution



Q.22 Which of the following acids does not exhibit optical isomerism?

[AIPMT 2012 (Prelims)]

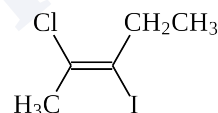
- (1) Maleic acid (2) α -amino acids
(3) Lactic acid (4) Tartaric acid

Scan or tap for the full solution



Q.23 The IUPAC name of the following compound is

[AIPMT 2011 (Mains)]



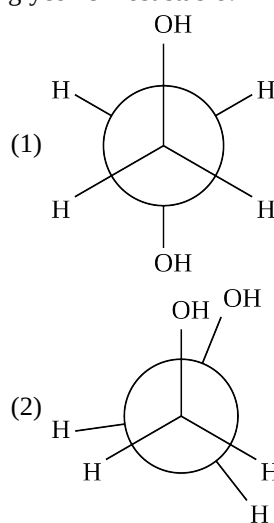
- (1) trans-2-chloro-3-iodo-2-pentene
(2) cis-3-iodo-4-chloro-3-pentene
(3) trans-3-iodo-4-chloro-3-pentene
(4) cis-2-chloro-3-iodo-2-pentene

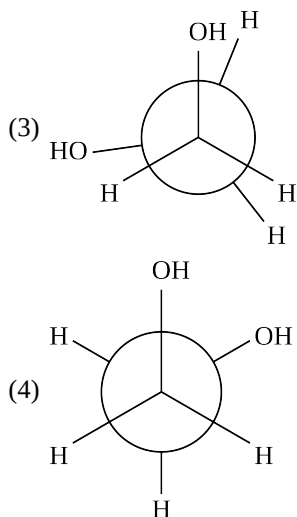
Scan or tap for the full solution



Q.24 Which of the following conformers for ethylene glycol is most stable?

[AIPMT 2010 (Mains)]

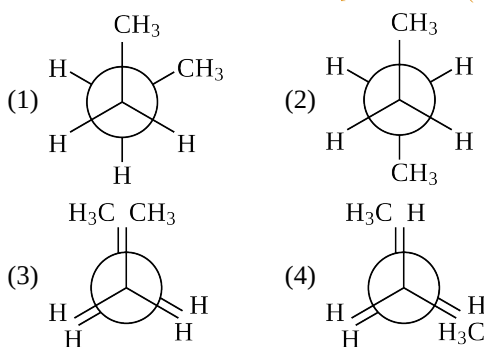




Scan or tap for the full solution



Q.25 In the following the most stable conformation of n-butane is [AIPMT 2010 (Prelims)]



Scan or tap for the full solution



Q.26 Which of the following compounds will exhibit cis-trans (geometrical) isomerism? [AIPMT 2009]

- (1) Butanol (2) 2-Butyne
(3) 2-Butanol (4) 2-Butene

Scan or tap for the full solution



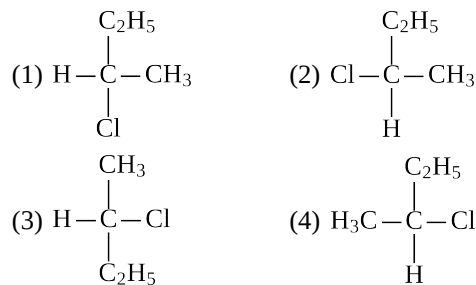
Q.27 How many stereoisomers does this molecule have? $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CHBrCH}_3$ [AIPMT 2008]

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

Scan or tap for the full solution



Q.28 $\text{CH}_3\text{-CHCl-CH}_2\text{-CH}_3$ has a chiral centre. Which one of the following represents its R-configuration? [AIPMT 2007]



Scan or tap for the full solution



Q.29 If there is no rotation of plane polarised light by a compound in a specific solvent, though thought to be chiral, it may mean that [AIPMT 2007]

- (1) the compound is certainly meso
(2) there is no compound in the solvent
(3) the compound may be a racemic mixture
(4) the compound is certainly achiral.

Scan or tap for the full solution



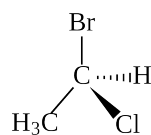
Q.30 Which of the following is not chiral? [AIPMT 2006]

- (1) 2-Hydroxypropanoic acid
(2) 2-Butanol
(3) 2,3-Dibromopentane
(4) 3-Bromopentane

Scan or tap for the full solution



Q.31 The chirality of the compound [AIPMT 2005]



- (1) R (2) S (3) E (4) Z

Scan or tap for the full solution



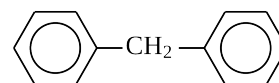
Q.32 Which one of the following pairs represents stereoisomerism? [AIPMT 2005]

- (1) Structural isomerism and geometrical isomerism
(2) Optical isomerism and geometrical isomerism
(3) Chain isomerism and rotational isomerism
(4) Linkage isomerism and geometrical isomerism.

Scan or tap for the full solution



Q.33 The molecular formula of diphenylmethane,



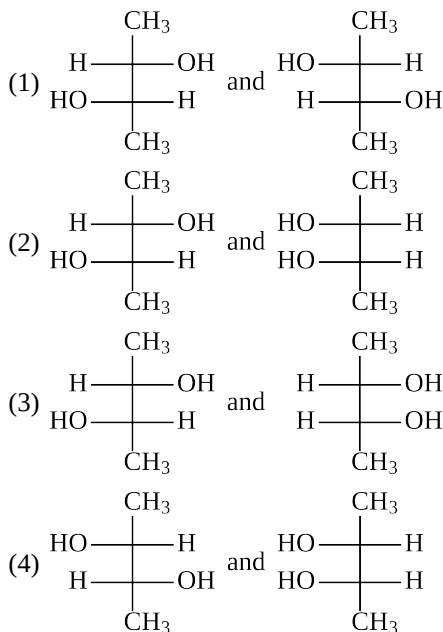
is $\text{C}_{13}\text{H}_{12}$. How many structural isomers are possible when one of the hydrogens is replaced by a chlorine atom? [AIPMT 2004]

- (1) 6 (2) 4 (3) 8 (4) 7

Scan or tap for the full solution



Q.34 Which of the following pairs of compounds are enantiomers? [AIPMT 2003]



Scan or tap for the full solution



Q.35 In this reaction :
 $\text{CH}_3\text{CHO} + \text{HCN} \longrightarrow \text{CH}_3\text{CH}(\text{OH})\text{CN}$
 $\xrightarrow{\text{HOH}} \text{CH}_3\text{CH}(\text{OH})\text{COOH}$

an asymmetric centre is generated. The acid obtained would be [AIPMT 2003]

- (1) D-isomer
 (2) L-isomer
 (3) 50% D + 50% L-isomer
 (4) 20% D + 80% L-isomer

Scan or tap for the full solution



Q.36 Geometrical isomers differ in [AIPMT 2002]

- (1) position of functional group
 (2) position of atoms
 (3) spatial arrangement of atoms
 (4) length of carbon chain

Scan or tap for the full solution



Q.37 A compound of molecular formula C_7H_{16} shows optical isomerism, compound will be [AIPMT 2001]

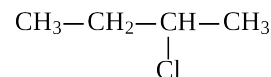
- (1) 2,3-dimethylpentane (2) 2,2-dimethylbutane
 (3) 2-methylhexane (4) none of these

Scan or tap for the full solution



Q.38 obtained by chlorination of n-butane will be

[AIPMT 2001]



- (1) meso form (2) racemic mixture
 (3) d-form (4) l-form

Scan or tap for the full solution



Q.39 2-Butene shows geometrical isomerism due to

[AIPMT 2000]

- (1) restricted rotation about double bond
 (2) free rotation about double bond
 (3) free rotation about single bond
 (4) chiral carbon

Scan or tap for the full solution



Q.40 Dihedral angle in staggered form of ethane is

[AIPMT 2000]

- (1) 0° (2) 120° (3) 60° (4) 180°

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	3	1	2	1	2	3	1	1	3	4	2
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	2	1	2	1	4	2	3	4	2	2	1
Ques.	23	24	25	26	27	28	29	30	31	32	33
Ans.	1	4	2	4	3	2	1	4	1	2	2
Ques.	34	35	36	37	38	39	40				
Ans.	1	3	3	1	2	1	3				