

EXERCISE - O

SINGLE CORRECT TYPE QUESTIONS

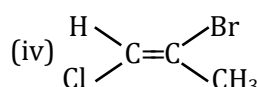
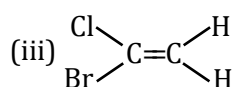
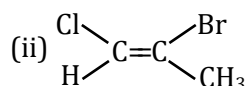
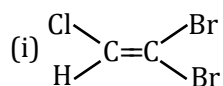
Condition for Geometrical Isomerism

1. Which of the following compound give geometrical isomerism ?

- (A) CH_2Cl_2 (B) $\text{CH}_2\text{Cl}-\text{CH}_2\text{Cl}$ (C) $\text{CHBr}=\text{CHCl}$ (D) $\text{CH}_2\text{Cl}-\text{CH}_2\text{Br}$

CGI072

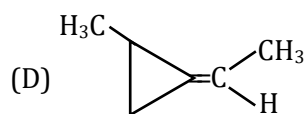
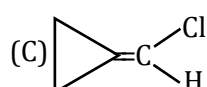
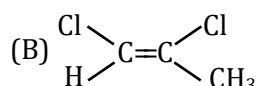
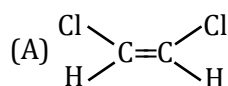
2. Which is a pair of geometrical isomers ?



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

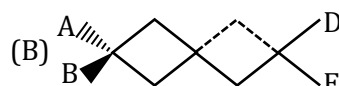
CGI073

3. Which Compound don't show Geometrical isomerism:



CGI078

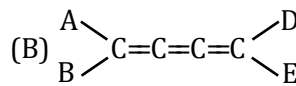
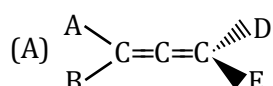
4. Which compound does not show G.I. -



(D) None of these

CGI079

5. Which compound show G.I. -

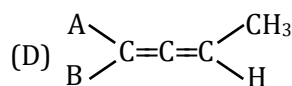


(C) Both (A) & (B)

(D) None of these

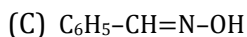
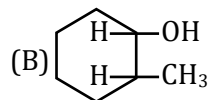
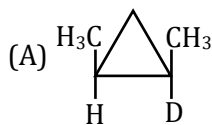
CGI080

6. Which compound show G.I. -



CGI081

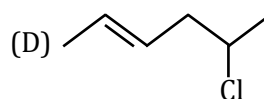
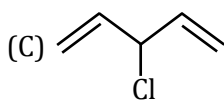
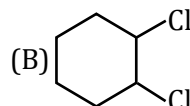
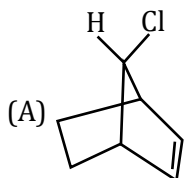
7. Which among the following will show geometrical isomerism :



(D) All of these

CGI082

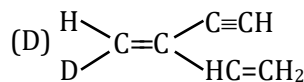
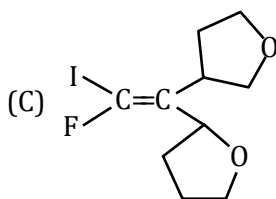
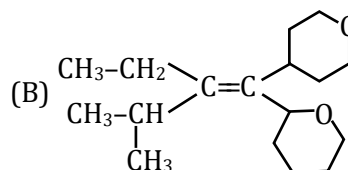
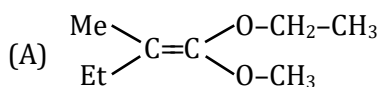
8. Which of the following cannot show geometrical isomerism :



CGI083

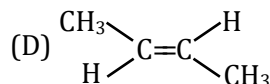
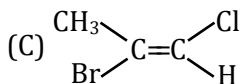
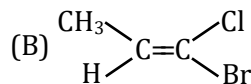
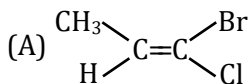
Nomenclature of Geometrical Isomers

9. Which of the following represent Z-isomer ?



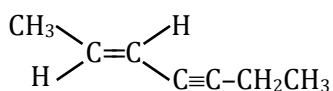
CGI088

10. Which one of the following is a Z isomer?



CGI089

11. The IUPAC name of the following compounds is :



(A) (Z) - 5 hepten - 3 - yne

(B) (Z) - 2 hepten - 4 - yne

(C) (E) - 5 hepten - 3 - yne

(D) (E) - 2 hepten - 4 - yne

CGI090

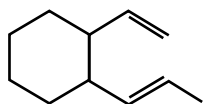
Calculation of Geometrical Isomers

12. The number of geometrical isomers in case of a compound with the structure $\text{CH}_3\text{-CH=CH-CH=C}_2\text{H}_5$ is -

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

CGI094

13. The number of Geometrical isomer in case of a compound with the structure



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

CGI095

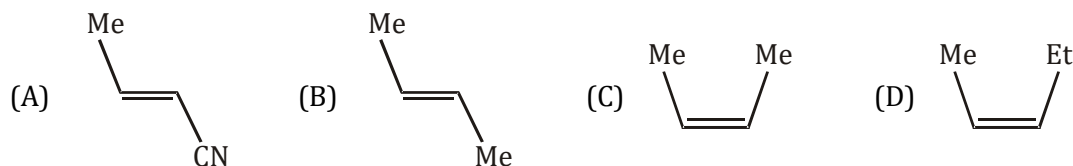
Physical Properties of Geometrical Isomers

14. Which structure have zero dipole moment

(A) cis-2-butene (B) 1, 2-dichloro cyclohexane
(C) p-dichloro benzene (D) None of these

CGI096

15. Which of the following will have lowest dipole moment?



CGI097

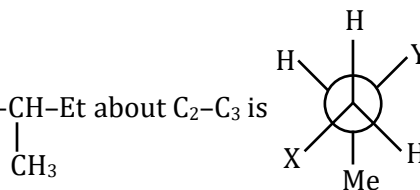
Conformation Isomerism

16. Maximum potential energy is associated with which of the following conformers of n-butane :

(A) Anti (B) Gauche (C) Eclipsed (D) Partial eclipsed

CGI105

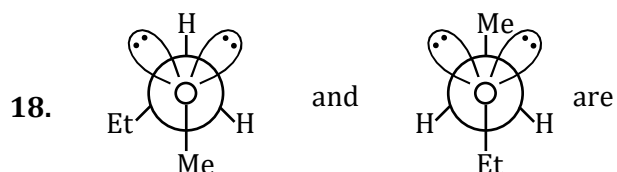
17. Newmann projection representation of $\text{CH}_3\text{-CH}_2\text{-CH(Et)-CH}_3$ about $\text{C}_2\text{-C}_3$ is



Then X & Y are respectively :

(A) Me, Et (B) H, Et (C) Et, H (D) Et, Me

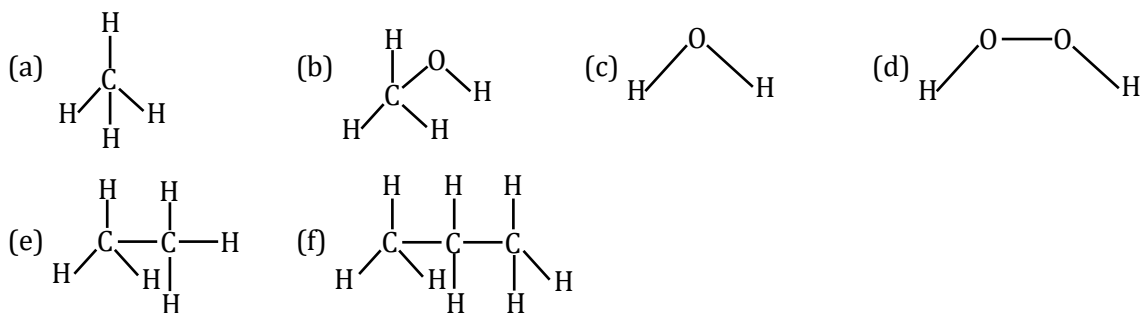
CGI106



(A) Chain isomers (B) Metamers
(C) Positional isomers (D) Conformers

CGI109

19. Which of the following shows conformational isomerism.



- (A) b, c, e, f (B) a, b, c, f (C) b, c, d, e (D) b, d, e, f

CGI111

20. Bond angle required to acquire most stable form from least stable form in n-butane is :

- (A) 360° (B) 180° (C) 120° (D) 240°

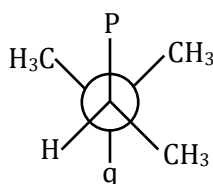
CGI114

21. When isomers have the same structural formula but differ in relative arrangement of atoms or groups are called

- (A) Mesomers (B) Stereoisomers (C) Both A and B (D) None of these

CGI115

22. What is the value of p & q in the following conformer of 2,3-dimethyl butane ?



- (A) $p = H, q = H$ (B) $p = CH_3, q = CH_3$ (C) $p = CH_3, q = H$ (D) $p = H, q = CH_3$

CGI116

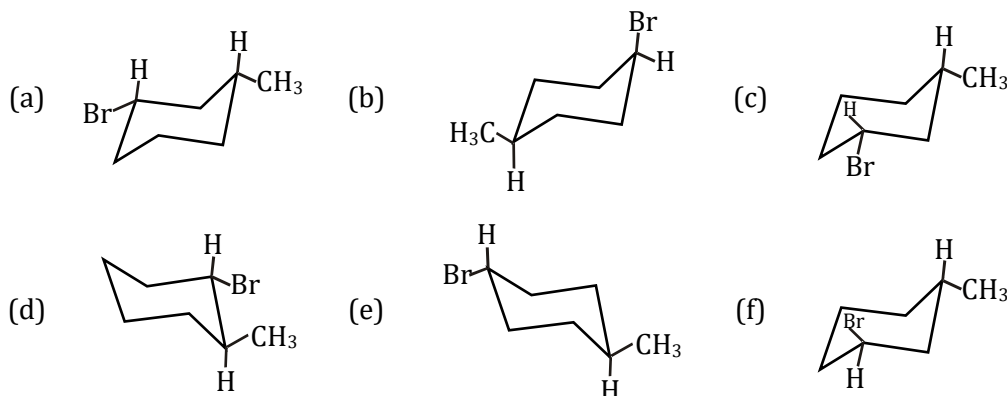
23. Number of possible conformations of n-butane is:

- (A) 2 (B) 4 (C) 6 (D) Infinite

CGI118

Conformation analysis of cyclohexane

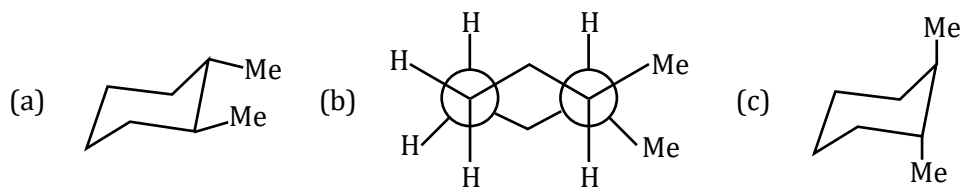
24. How many of the following compounds are cis isomer or a trans isomer.



- (A) 4-cis and 2-trans (B) 3-cis and 3-trans (C) 5-cis and 1-trans (D) 2-cis and 4-trans

CGI120

25. The correct stability order of the following species is :-



(A) $c < a < b$

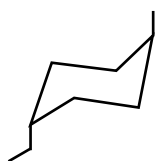
(B) $c = b < a$

(C) $c < a = b$

(D) $a = b = c$

CGI121

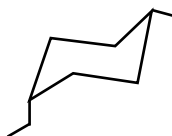
26. Which of the following represent correct stability order of



(I)



(II)



(III)



(IV)

(A) $II > I > IV > III$

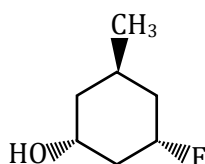
(B) $II > III > IV > I$

(C) $II > IV > III > I$

(D) $II > IV > I > III$

CGI123

27.



In the most stable conformation of the above compound attached groups OH, F & CH₃ are at respectively :

(A) a a a

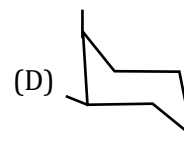
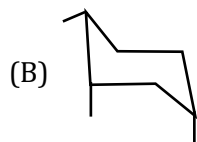
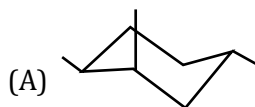
(B) a a e

(C) e e e

(D) e e a

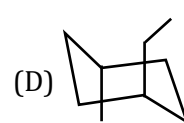
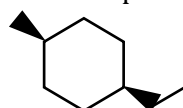
CGI124

28. Which of the structures (a-d) will be produced if a "ring flip" occurs in the following compound in chair form ?



CGI126

29. Which is the most stable chair form of this compound ?



CGI128

30. For given reaction



- (A) $K_{eq} > 1$ (B) $K_{eq} < 1$ (C) $K_{eq} = 1$ (D) None of these

CGI130

31. If cis 1, 2-dichlorocyclohexane goes to ring flipping then after ring flipping it will become :

- (A) cis 1,2-dichlorocyclohexane (B) Trans 1, 2-dichlorocyclohexane
(C) Both cis, trans (D) None of these

CGI131

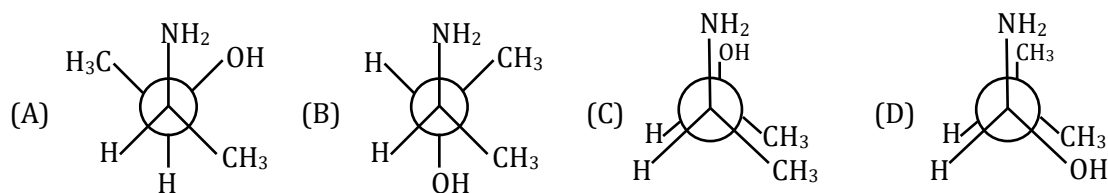
COMPREHENSION TYPE QUESTIONS

Conformation Isomerism

Paragraph for Question 32 & 33

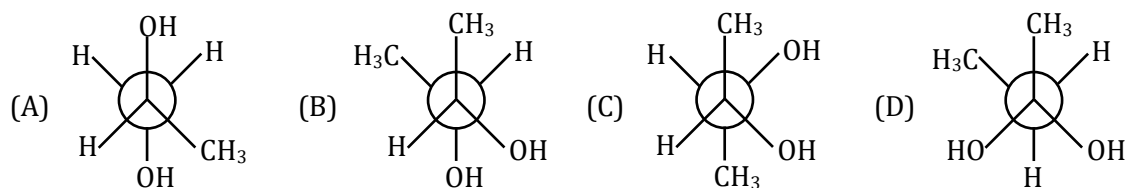
Different special arrangements of atoms that result from free rotation about a single bond are called conformation. Stability of conformer depends on torsional strain, steric strain, dipole-dipole attraction and intramolecular hydrogen bonding.

32. Which one of the following conformers of 3-amino-2-butanol is most stable :



CGI107

33. In which of the following has minimum potential energy in conformers of butane-2,3-diol :

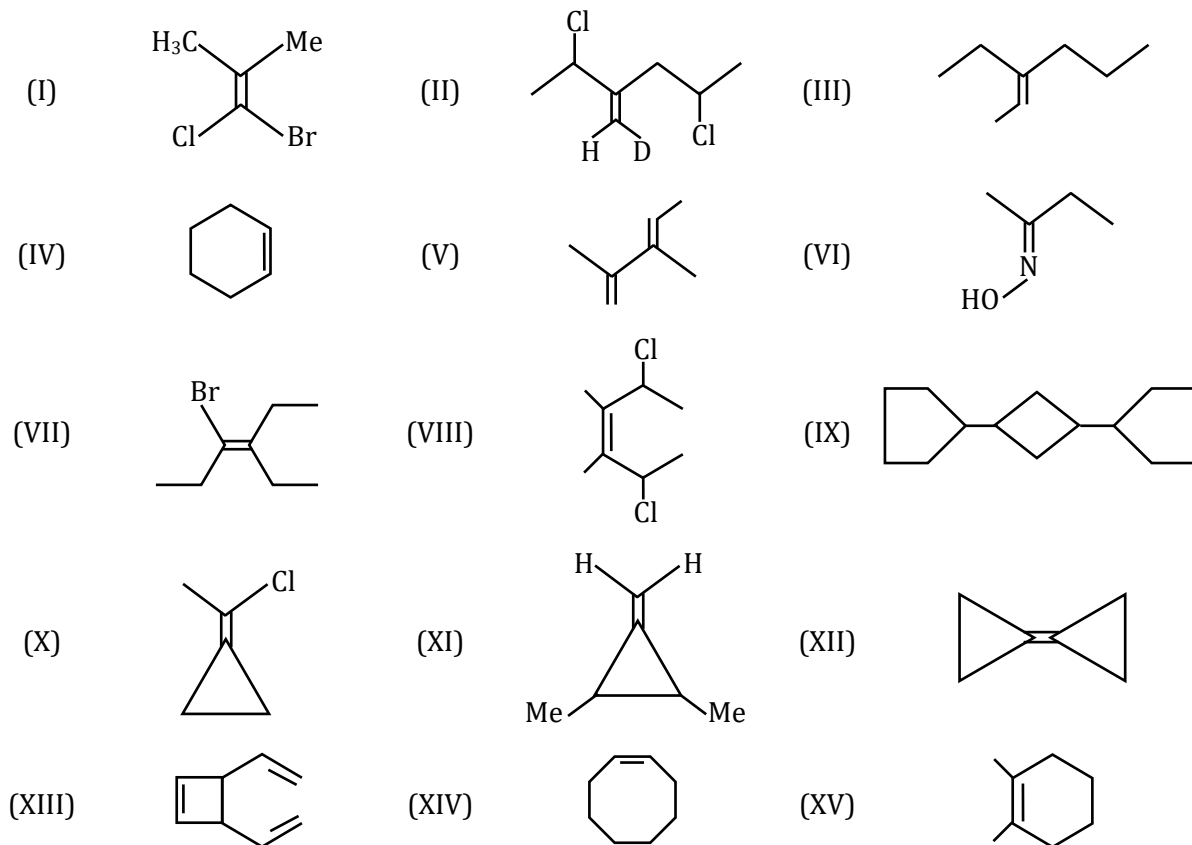


CGI108

EXERCISE - S

Geometrical Isomerism in alkene, cycloalkane, cycloalkene, oxime, Spiro compounds

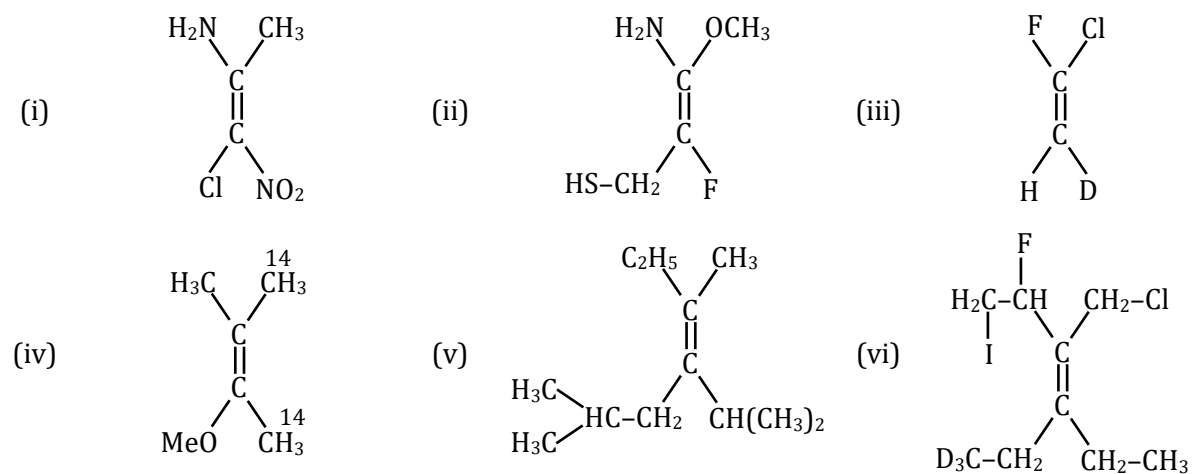
1. Identify molecules which usually can show geometrical isomerism (at room temperature)

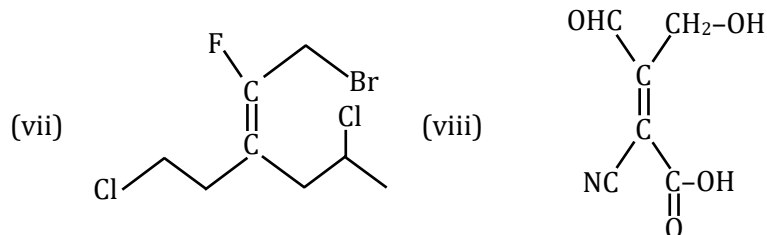


CGI086

E/Z Nomenclature

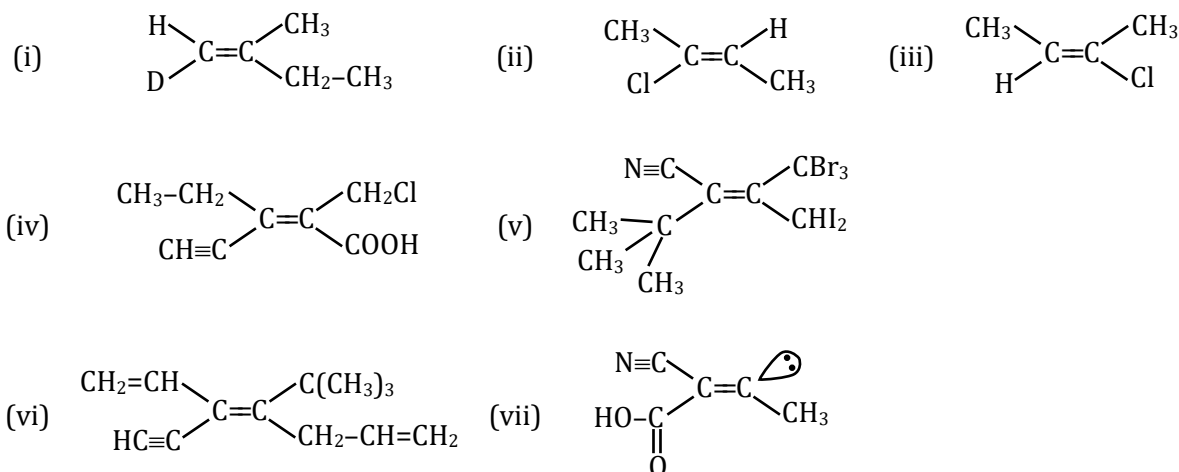
2. How many of the following have E configurations:





CGI102

3. Number of compounds having z-configuration:



CGI103

Calculation of Geometrical Isomer

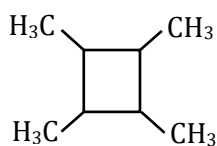
4. Calculate total number of G.I. in following compounds.

Write answer as the sum of all the values obtained :

- (i) $\text{CH}_3\text{-CH=CH-CH}_3$
- (ii) $\text{CH}_3\text{-CH=CH-CH=CH}_2$
- (iii) $\text{CH}_3\text{-CH=CH-CH=NH}$
- (iv) $\text{CH}_3\text{-CH=CH-CH=CH-CH}_3$
- (v) $\text{CH}_3\text{-CH=CH-CH=CH-CH}_2\text{-Cl}$
- (vi) $\text{CH}_3\text{-CH=C=C-CH-CH=CH-CH}_2\text{-CH=NH}$

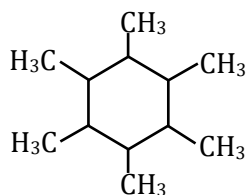
CGI104

5. How many geometrical isomers are possible for the following compound ?



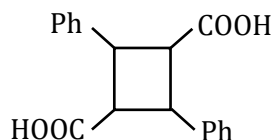
CGI135

6. How many geometrical isomers are possible for the following compound ?



CGI136

7. How many geometrical isomers are possible for the following compound ?



CGI137

Conformations

8. $\mu_{\text{obs}} = \sum \mu_i x_i$; where μ_i is the dipole moment of stable conformer and x_i is the mole fraction of that conformer of $\text{Z-CH}_2\text{-CH}_2\text{-Z}$ in Newmann's projection. If μ_{solution} or $\mu_{\text{net}} = 1 \text{ D}$ and mole fraction of antiform = 0.82, find μ_{Gauche} .

CGI138

EXERCISE - JEE (Main) PYQ

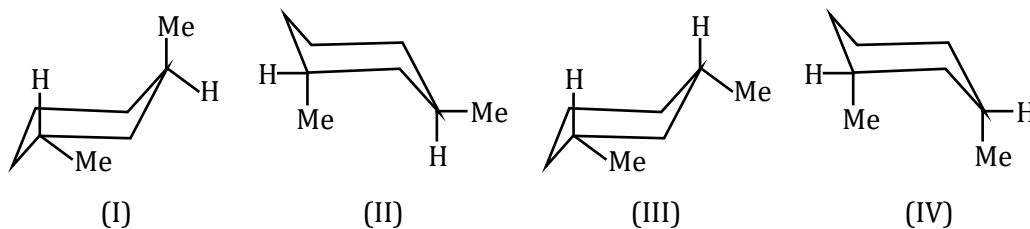
1. Maleic acid and fumaric acids are :-

[AIEEE (Online) 2012]

- (1) Tautomers (2) Chain isomers
(3) Geometrical isomers (4) Functional isomers

CGI034

2. Arrange in the correct order of stability (decreasing order) for the following molecules:



[AIEEE (Online) 2013]

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

CGI035

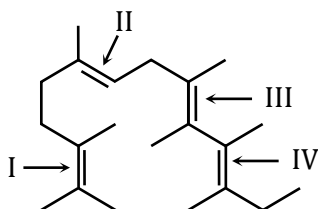
3. Which of the following compounds will exhibit geometrical isomerism ?

[JEE (Main) 2015]

- (1) 2-Phenyl-1-butene (2) 1,1-Diphenyl-1-propene
(3) 1-Phenyl-2-butene (4) 3-Phenyl-1-butene

CGI036

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



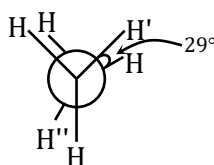
Geometrical isomerism is **not** possible at site(s)

[JEE (Main Online) 2016]

- (1) III (2) I (3) III and IV (4) I and III

CGI037

5. In the following skew conformation of ethane, H'-C-C-H'' dihedral angle is :



[JEE (Main) 2019]

- (1) 120° (2) 58° (3) 149° (4) 151°

CGI038

6. The number of acyclic structural isomers (including geometrical isomers) for pentene are__

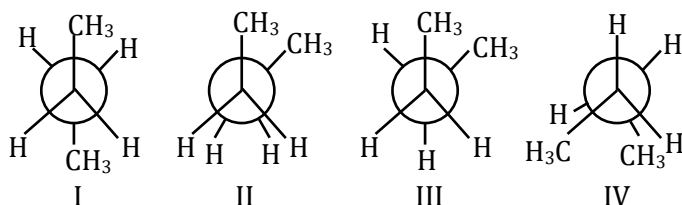
[JEE (Main) 2021]

CGI039

7. The dihedral angle in staggered form of Newman projection of 1, 1, 1-Trichloro ethane is degree. (Round off to the nearest integer) [JEE (Main) 2021]

CGI040

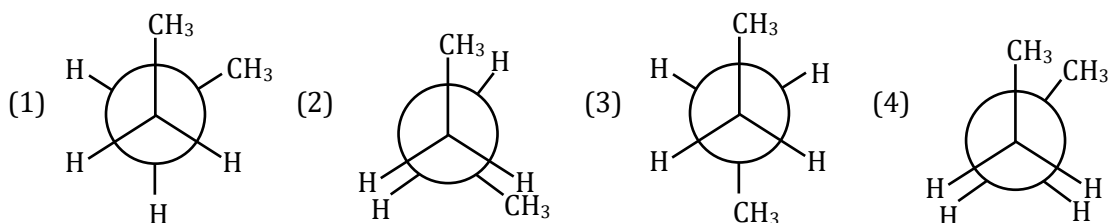
8. Arrange the following conformational isomers of n-butane in order of their increasing potential energy : [JEE (Main) 2021]



- (1) II < III < IV < I (2) I < IV < III < II (3) II < IV < III < I (4) I < III < IV < II

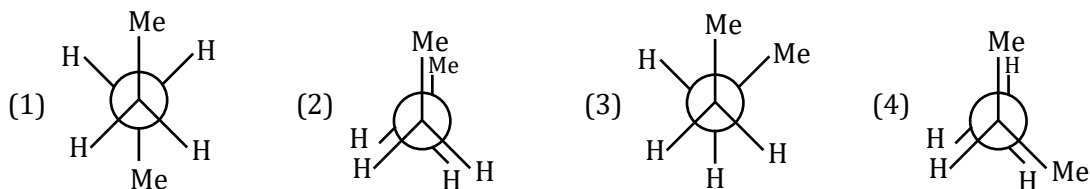
CGI041

9. In the following structures, which one is having staggered conformation with maximum dihedral angle? [JEE (Main) 2022]



CGI139

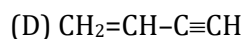
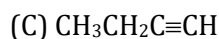
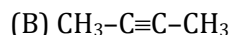
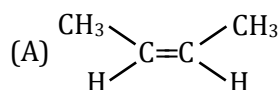
10. Which of the following conformations will be the most stable ? [JEE (Mains) 2023]



CGI042

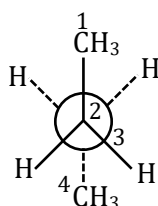
EXERCISE - JEE (Advanced) PYQ

1. Which of the following has the lowest dipole moment : [IIT 2002]



CGI063

2. If C_2 in below compound is rotated by 120° angle in anticlockwise direction along $\text{C}_2\text{-C}_3$, which of the following form will be produced : [IIT 2004]



(A) Partial eclipsed

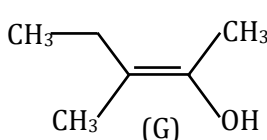
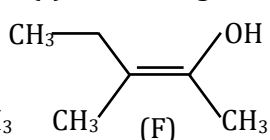
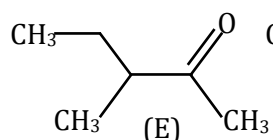
(B) Perfectly eclipsed

(C) Perfectly staggered

(D) Gauche conformation

CGI064

3. The correct statement(s) concerning the structures E, F and G is (are) [IIT 2008]



(A) E, F and G are resonance structures

(B) E, F and E, G are tautomers

(C) F and G are geometrical isomers

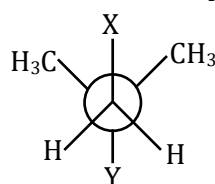
(D) F and G are diastereomers

CGI065

4. The bond energy (in kcal mol^{-1}) of a C-C single bond is approximately : [IIT 2010]
- (A) 1 (B) 10 (C) 100 (D) 1000

CGI066

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



X and Y can respectively be -

(A) H and H

(B) H and C_2H_5

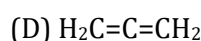
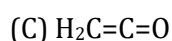
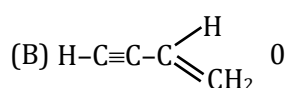
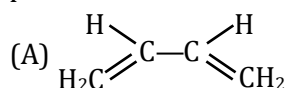
(C) C_2H_5 and H

(D) CH_3 and CH_3

[IIT 2010]

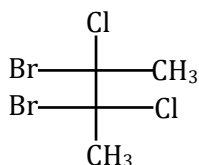
CGI067

6. 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) - [IIT 2011]



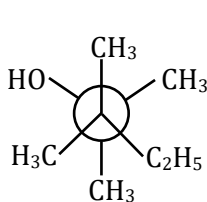
CGI068

7. The total number(s) of stable conformers with non-zero dipole moment for the following compound is (are) [JEE (Advanced) 2014]

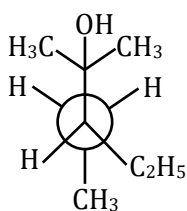


CGI069

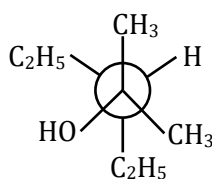
8. Newman projections **P**, **Q**, **R** and **S** are shown below : [JEE (Advanced) 2020]



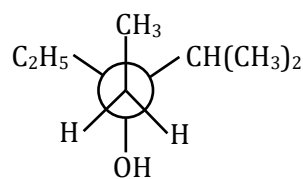
P



Q



R



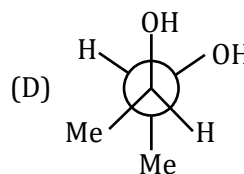
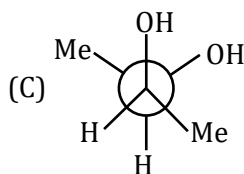
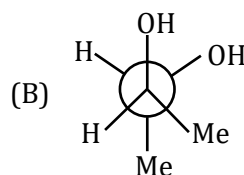
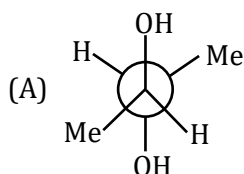
S

Which one of the following options represents identical molecules ?

- (A) P and Q (B) Q and S (C) Q and R (D) R and S

CGI070

9. Among the following, the conformation that corresponds to the most stable conformation of *meso*-butane-2,3-diol is [JEE (Advance) 2021]



CGI071

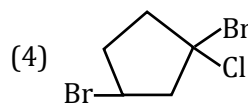
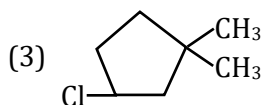
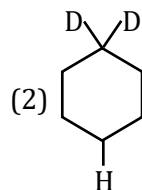
This paper is for yourself practice and assessment the discussion of this paper is optional though you can see PDF solutions or video solutions or solutions in hardcopy whichever is provided.

- This section contains **TWENTY** questions.
- Each question has **FOUR** options (1), (2), (3) and (4). **ONLY ONE** of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories :
Full Marks : +4, if only the bubble corresponding to the correct option is darkened.
Zero Marks : 0, if none of the bubbles is darkened.
Negative Marks : -1 in all other cases

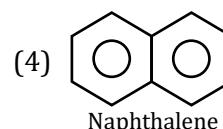
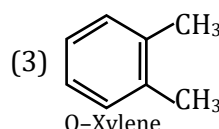
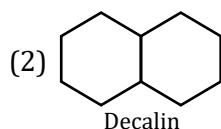
- 
- (1) 2 (2) 4 (3) 6 (4) 8

(1) $\text{CH}_3\text{-CH=CH}_2$ (2) $\begin{array}{c} \text{CH}_3\text{-C=CH}_2 \\ | \\ \text{CH}_3 \end{array}$ (3) $\begin{array}{c} \text{CH}_3\text{-C=CHD} \\ | \\ \text{CH}_3 \end{array}$ (4) $\text{CH}_3\text{-CH=CHD}$

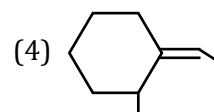
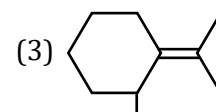
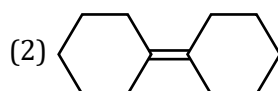
(1) 



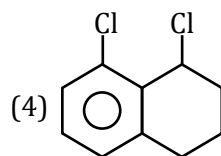
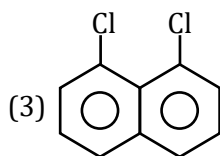
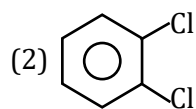
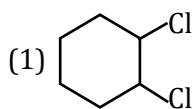
(1) 
Benzene



(1) 

**CGI005**

6. Which of the following will show Geometrical isomerism.



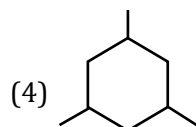
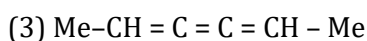
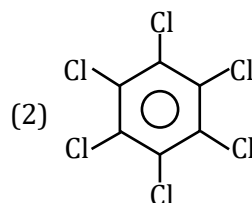
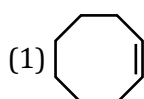
CGI006

7. Which of the following statement is not correct :-

- (1) Cyclobutane is a planar compound
- (2) Trans cyclohexadecene is relatively more stable than its cis form
- (3) Cis form of 1,3-dimethylcyclohexane is relatively more stable than its trans form
- (4) Cis 1,2-dichloroethene is relatively more stable than its trans form.

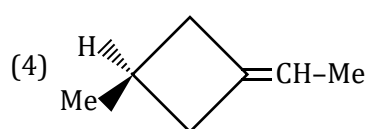
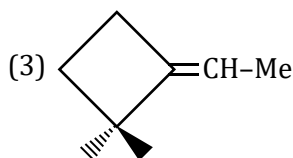
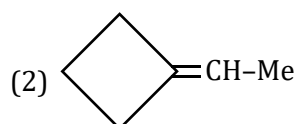
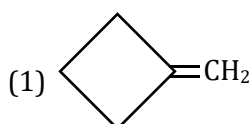
CGI007

8. Select which one of the following cannot show geometrical isomerism



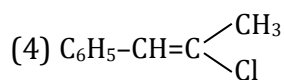
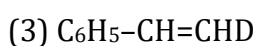
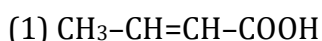
CGI008

9. Which one of the following is capable of showing geometrical isomerism.



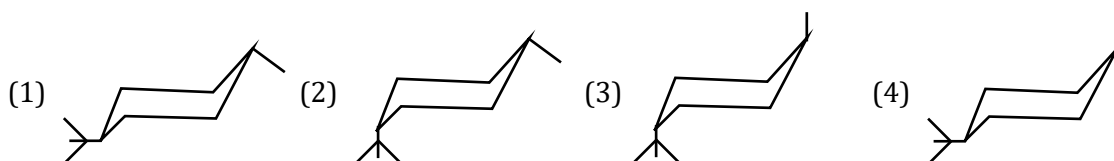
CGI009

10. In which compound cis-trans nomenclature cannot be used :



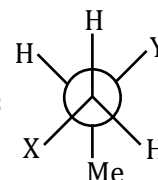
CGI010

11. Which is the most stable conformation :



CGI011

12. Newmann projection representation of $\text{CH}_3\text{-CH}_2\text{-CH(CH}_3\text{)-CH}_2\text{-CH}_2\text{-CH}_3$ about $\text{C}_2\text{-C}_3$ is

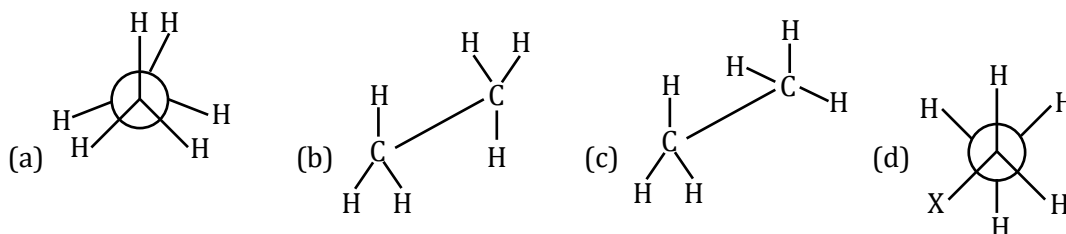


Then X & Y are respectively :

- (1) Me, Pr (2) H, Et (3) Et, H (4) Et, Me

CGI012

13. Which are the staggered forms of ethane :-



- (1) (a) and (d) (2) (c) and (d) (3) (b) and (d) (4) (a) and (c)

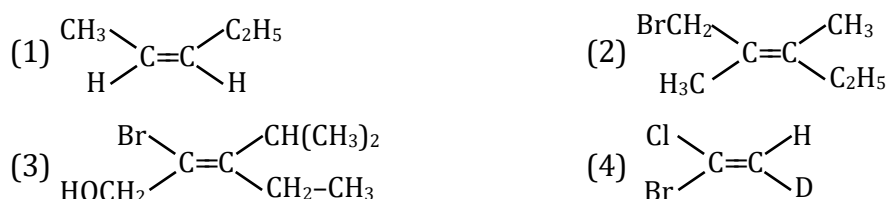
CGI013

14. The isomerism shown by Benzaldoxime is :-

- (1) Optical (2) Functional (3) Metamerism (4) Geometrical

CGI014

15. Which of the following has E-configuration :



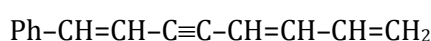
CGI015

16. The correct structure of trans-2-hexenal is -



CGI016

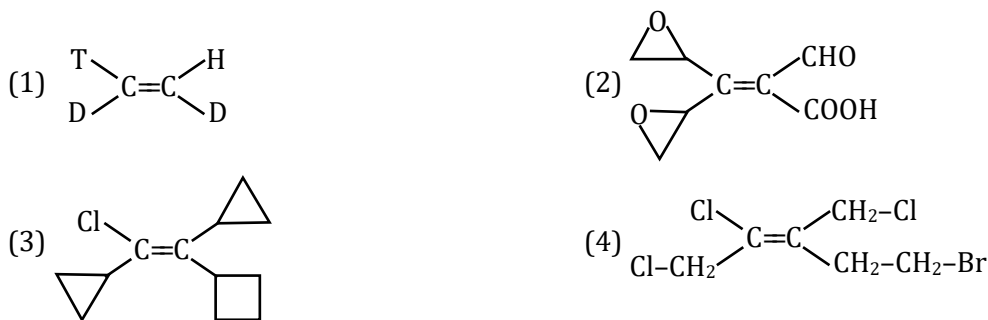
17. Number of geometrical isomers in following compound



- (1) 6 (2) 4 (3) 16 (4) 8

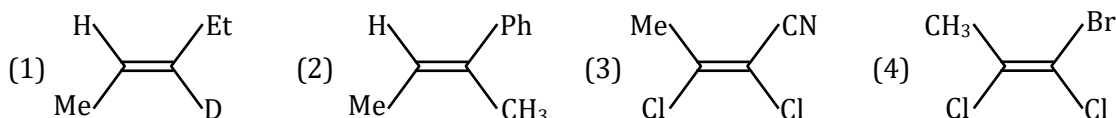
CGI017

18. Which of the following has "Z" as well as "trans" configuration :



CGI018

19. Which of the follow represent Z form



CGI019

20. $C_6H_5-CH=CH-CH=CH-CH=CH-CH=CH-CH_3$; How may geometrical isomers are possible :

- (1) 10 (2) 16 (3) 32 (4) 20

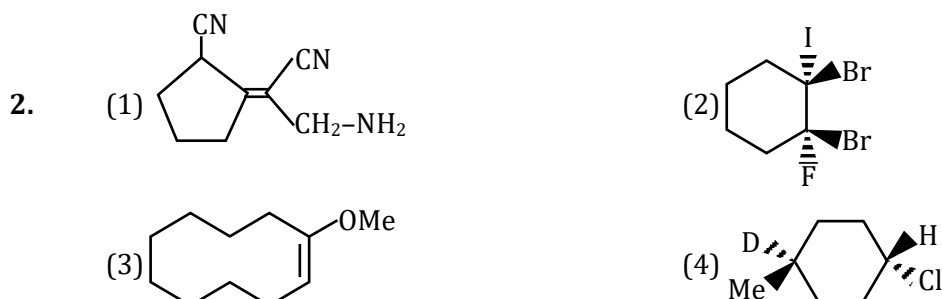
CGI020

SECTION-B

- This section will have **TEN questions**. Candidate can choose to attempt any 5 questions out of these 10 questions. In case if candidate attempts more than 5 questions, first 5 attempted questions will be considered for marking.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value (Answer should be rounded off to the nearest integer).
- Answer to each question will be evaluated according to the following marking scheme:
 Full Marks : +4, if only correct answer is given.
 Zero Marks : 0, if no answer is given.
 Negative Marks :-1 for incorrect answer

1. How many pair(s) of geometrical isomers are possible with C_6H_{12} (only in open chain structures)

CGI021

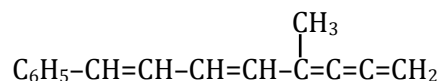


Assign E or Z to the following compounds and write 1 for E and 2 for Z.

Write answer of part (1), (2), (3) & (4) in the same order and present the four digit number as answer in OMR sheet. For example: If all these answer are 9 then fill 9999 in OMR sheet.

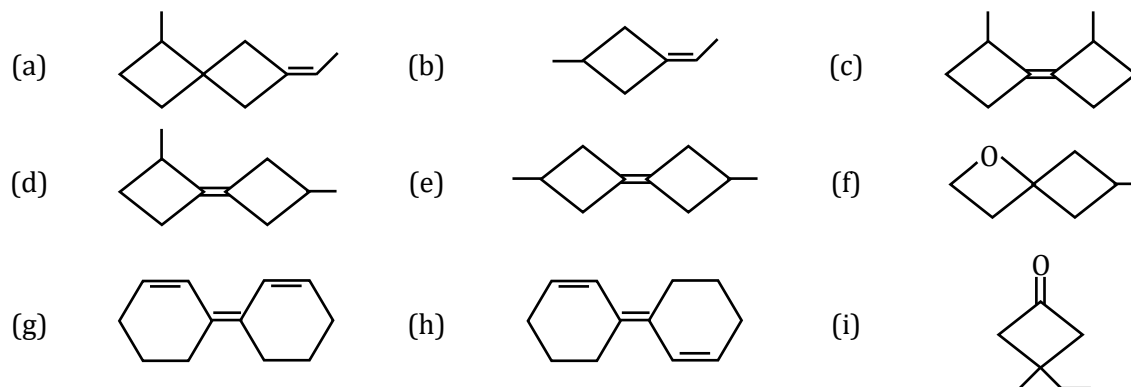
CGI022

3. Number of geometrical isomers of the following compound.



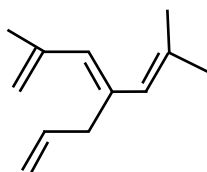
CGI023

4. Number of compound which can show geometrical isomerism



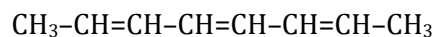
CGI024

5. Number of geometrical isomers for following compound.



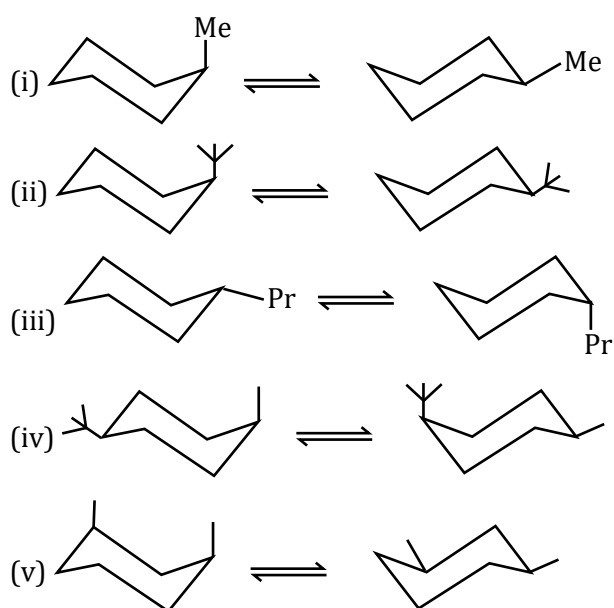
CGI025

6. How many geometrical isomers are possible with following structure :



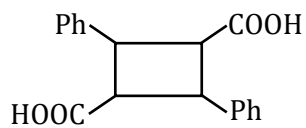
CGI026

7. The ring flipping equilibrium constant is greater than 1 for



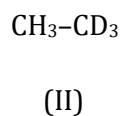
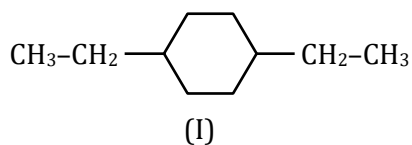
CGI027

8. How many geometrical isomers are possible for following compound :



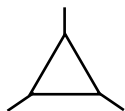
CGI028

9. If $p \rightarrow$ Total of geometrical isomers in compound I
 $q \rightarrow$ Total number of stable conformation of compound II
 Then value of $(p + q)$ is :



CGI029

10. Number of geometrical isomer for the following compound will be



CGI030

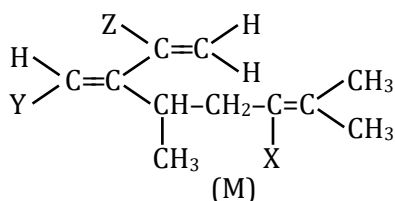
JEE (Advanced) Practice Paper

This paper is for yourself practice and assessment the discussion of this paper is optional though you can see PDF solutions or video solutions or solutions in hardcopy whichever is provided.

SECTION-I

- This section contains **TWELVE** questions.
- Each question has FOUR options (A), (B), (C) and (D). ONLY ONE of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories:
 Full Marks : +3, if only the bubble corresponding to the correct option is darkened.
 Zero Marks : 0, if none of the bubbles is darkened.
 Negative Marks : -1, in all other cases

1. In the given halogenoalkene M, atoms X, Y and Z represents hydrogen or bromine or chlorine. To show cis-trans isomerism, what could be the identities of atoms X, Y and Z?

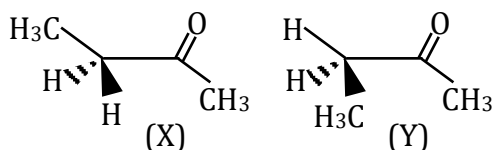


	X	Y	Z
1	Cl	H	Br
2	H	Br	Cl
3	Cl	Br	H

- (A) 1, 2 and 3 (B) 1 and 2 only (C) 2 and 3 only (D) 1 and 3 only

CGI043

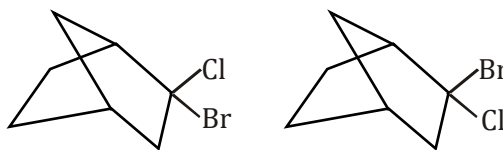
2. The correct statements about conformations X and Y of 2-butanone are :



- (a) X is more stable than Y (b) Y is more stable than X
 (c) Methyl groups in X are anti (d) Methyl groups in Y are gauche
 (A) a and d (B) a and c (C) b and c (D) a, c and d

CGI044

3. Identify relation between these two compounds :



- (A) Homomers (B) Enantiomers (C) Diastereomers (D) Positional Isomers

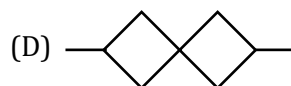
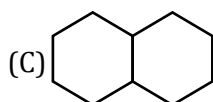
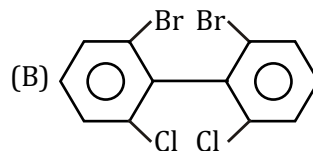
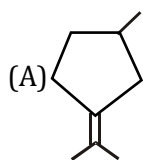
CGI045

4. Identify the most stable conformer of cyclohexane :

- (A) Chair form (B) Boat form
(C) Half Chair form (D) Twist boat form

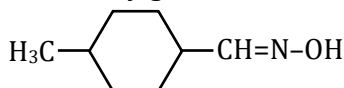
CGI046

5. Identify compound which can show geometrical isomerism :



CGI047

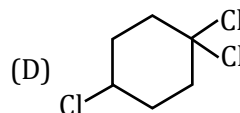
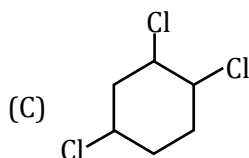
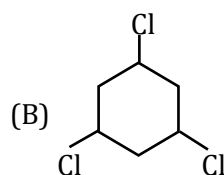
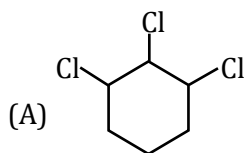
6. How many geometrical isomers are possible for the given compound ?



- (A) 2 (B) 4 (C) 6 (D) 8

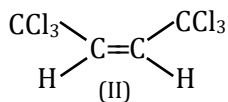
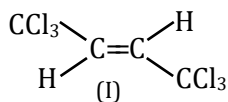
CGI048

7. Which of the following compounds does not have any geometrical isomer ?



CGI049

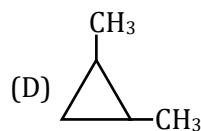
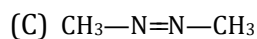
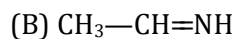
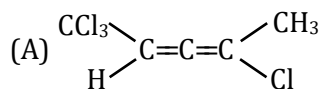
8. Which is true for the following isomeric forms I & II respectively :



	Dipole moment	Boiling point	Melting point	Stability
(A)	I > II	I > II	II > I	I > II
(B)	II > I	II > I	II > I	II > I
(C)	I > II	I > II	I > II	I > II
(D)	II > I	II > I	I > II	I > II

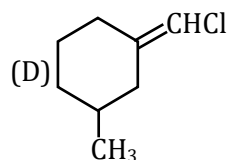
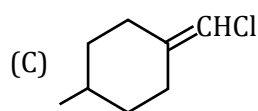
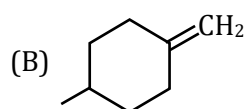
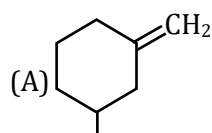
CGI050

9. Which of the following compound does not show geometrical isomerism.



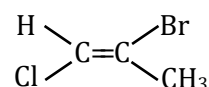
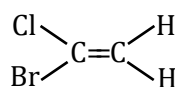
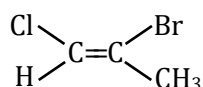
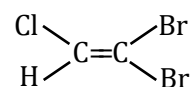
CGI051

10. The geometrical isomerism is shown by



CGI052

11. Which is a pair of geometrical isomers :-



(I)

(II)

(III)

(IV)

(A) I and II

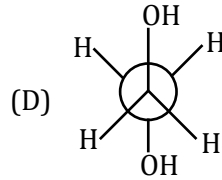
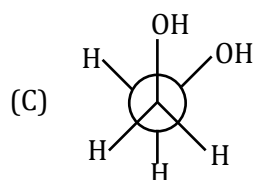
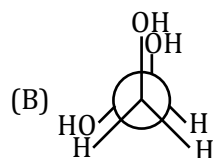
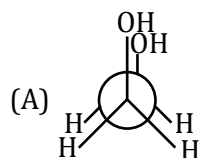
(B) I and III

(C) II and IV

(D) III and IV

CGI053

12. Which of the following conformers for ethylene glycol is most stable :-



CGI054

SECTION-II

- This section contains **FOUR** questions.
- Each question has **FOUR** options for correct answer(s). **ONE OR MORE THAN ONE** of these four option(s) is (are) correct option(s).
- For each question, choose the correct option(s) to answer the question.
- Answer to each question will be evaluated according to the following marking scheme:

Full Marks : +4, if only (all) the correct option(s) is (are) chosen.

Partial Marks : +3, if all the four options are correct but **ONLY** three options are chosen.

Partial Marks : +2, if three or more options are correct but **ONLY** two options are chosen, both of which are correct options.

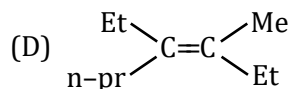
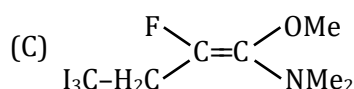
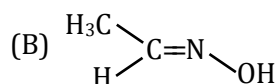
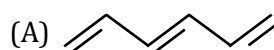
Partial Marks : +1, if two or more options are correct but **ONLY** one option is chosen and it is a correct option.

Zero Marks : 0, if none of the options is chosen (i.e. the question is unanswered).

Negative Marks : -2, in all other cases.

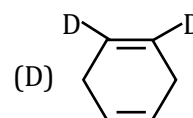
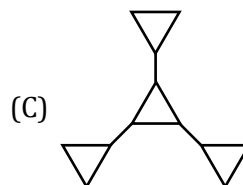
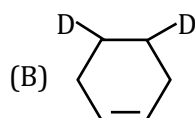
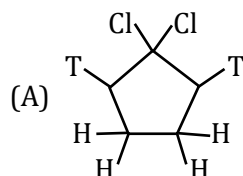
For Example : If first, third and fourth are the **ONLY** three correct options for a question with second option being an incorrect option; selecting only all the three correct options will result in +4 marks. Selecting only two of the three correct options (e.g. the first and fourth options), without selecting any incorrect option (second option in this case), will result in +2 marks. Selecting only one of the three correct options (either first or third or fourth option), without selecting any incorrect option (second option in this case), will result in +1 marks. Selecting any incorrect option(s) (second option in this case), with or without selection of any correct option(s) will result in -2 marks.

13. Which of the following are E isomer :



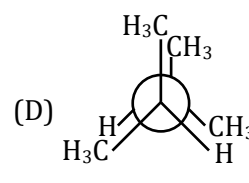
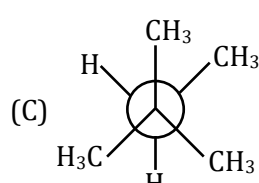
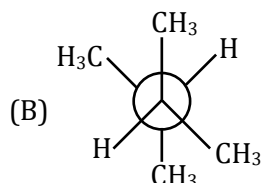
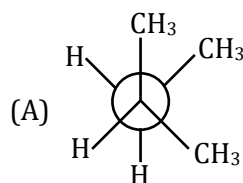
CGI055

14. Which will show geometrical isomerism -



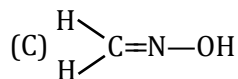
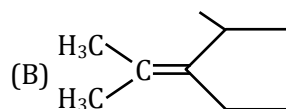
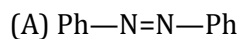
CGI056

15. Which of the following is/are the Newman projection formula of 2,3-Dimethylbutane across C₂ and C₃ bond ?



CGI057

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



CGI058

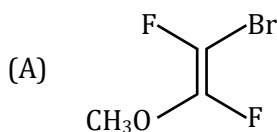
SECTION-III

- This section contains **TWO** questions.
- Each question has matching lists. The codes for the lists have choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct
- For each question, marks will be awarded in one of the following categories :
 Full Marks : +3, if only the bubble corresponding to the correct option is darkened.
 Zero Marks : 0, if none of the bubbles is darkened.
 Negative Marks : -1, in all other cases.

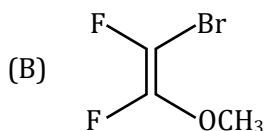
17. Match the column-I with Column-II

Column - I

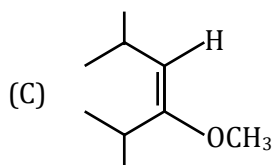
Column - II



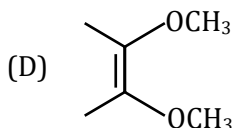
(P) cis



(Q) trans



(R) E



(S) Z

(A) (A) → Q,S; (B) → P,R; (C) → P,R; (D) → P,S

(B) (A) → S; (B) → P,R; (C) → R; (D) → P,S

(C) (A) → Q,S; (B) → S,R; (C) → S,R; (D) → P,R

(D) (A) → P,S; (B) → P,R; (C) → P,R; (D) → Q,S

CGI059

18. Match the column-I with Column-II

Column-I (Modified Newman projection)		Column-II (Conformers)	
(a)		(p)	Fully eclipsed
(b)		(q)	Partially eclipsed
(c)		(r)	Gauche
(d)		(s)	Staggered

(A) (a - q) (b - p) (c - s) (d - r)

(B) (a - p) (b - r) (c - s) (d - q)

(C) (a - p) (b - q) (c - s) (d - r)

(D) (a - r) (b - q) (c - p) (d - s)

CG1060

SECTION-IV

- This section contains **TWO** questions.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value (in decimal notation, truncated/rounded-off to the second decimal place; e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30, if answer is 11.36777..... then both 11.36 and 11.37 will be correct).
- Answer to each question will be evaluated according to the following marking scheme:
 Full Marks : +3, If **ONLY** the correct numerical value is entered as answer.
 Zero Marks : 0, In all other cases.

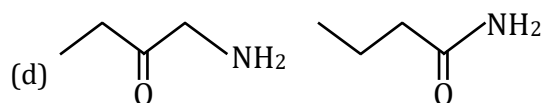
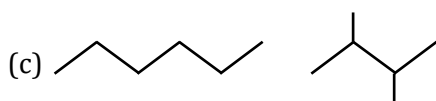
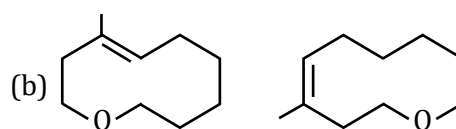
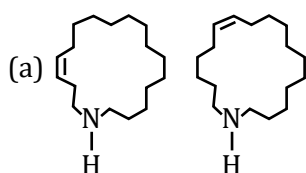
19. Analyse the following pairs of compounds.

Write 1 if they are Geometrical isomers.

Write 2 if they are Chain isomers.

Write 3 if they are position isomers.

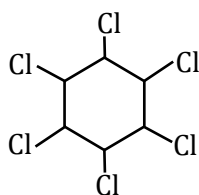
Write 4 if they are Functional group isomers.



Write answer of part (a), (b), (c) & (d) in the same order and present the four digit number as answer in OMR sheet. For example: If all these answers are 9 then fill 9999 in OMR sheet.

CGI061

20. How many geometrical isomers are possible for



CGI062

ANSWER KEY

EXERCISE - O

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	C	C	C	B	B	B	D	C	B	A
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	D	A	C	C	B	C	A	B	D	B
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	B	C	D	B	C	C	B	B	B	A
Que.	31	32	33							
Ans.	A	A	C							

EXERCISE - S

1. 9 2. 5 3. 3 4. 23 5. 4 6. 8 7. 5 8. 5.55

EXERCISE - JEE (Main) PYQ

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	3	3	3	2	3	6	60	4	3	1

EXERCISE - JEE (Advanced) PYQ

Que.	1	2	3	4	5	6	7	8	9
Ans.	B	D	BCD	C	BD	BC	3	C	B

JEE (Main) Practice Paper

Section-A	Q.	1	2	3	4	5	6	7	8	9	10
	A.	1	4	4	2	4	1	1	2	3	4
	Q.	11	12	13	14	15	16	17	18	19	20
	A.	1	1	3	4	2	2	2	4	3	2
Section-B	Q.	1	2	3	4	5	6	7	8	9	10
	A.	4	2112	4	6	2	6	3	5	3	2

JEE (Advanced) Practice Paper

Section-I	Q.	1	2	3	4	5	6	7	8
	A.	C	D	C	A	C	B	D	D
	Q.	9	10	11	12				
	A.	A	D	C	C				
Section-II	Q.	13	14	15	16				
	A.	AB	ABC	BD	BC				
Section-III	Q.	17	18						
	A.	A	C						
Section-IV	Q.	19	20						
	A.	3124	8						