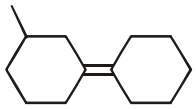
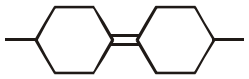
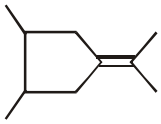
1. Molecular weight of a hydrocarbon containing minimum number of C-atom to show optical isomerism:-
(1) 100 (2) 80 (3) 68 (4) 70

2. Compounds which can show both optical as well as geometrical isomerism :

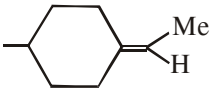
(1) 

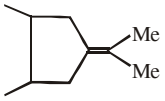
(2) 

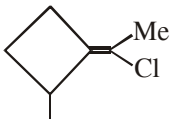
(3) 

(4) 

3. Which of the following will not show optical isomerism :-

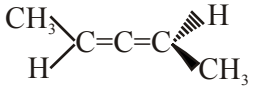
(1) 

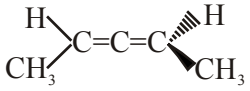
(2) 

(3) 

(4) 

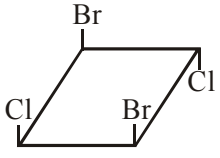
4. Relation between given compound

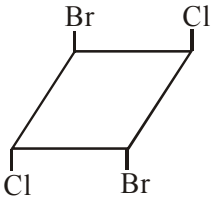


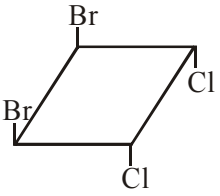


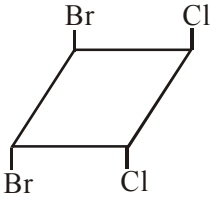
(1) Both are identical (2) Diastereomer
(3) Enantiomer (4) Geometrical isomer

5. Which of the following structure is chiral ?

(1) 

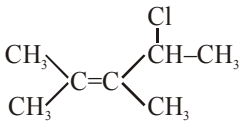
(2) 

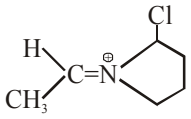
(3) 

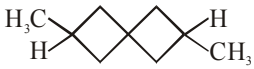
(4) 

6. The No. of optically active stereoisomer of:-
CH_3–CH=CH–CH(OH)–CH=CH–CH_3
(1) 2 (2) 3
(3) 4 (4) 6

7. Which of the following compounds are chiral?

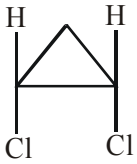
(1) 

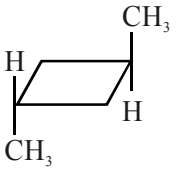
(2) 

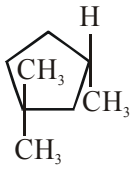
(3) 

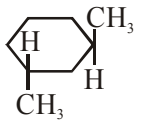
(4) All of these

8. Which does not show geometrical isomerism?

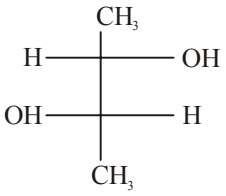
(1) 

(2) 

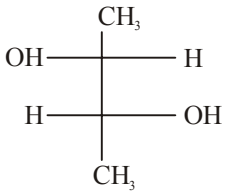
(3) 

(4) 

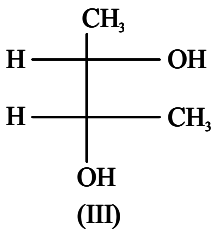
9. The correct statement about the compounds I, II and III.



(I)



(II)

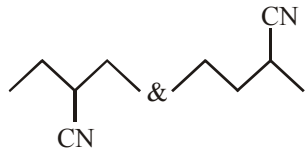


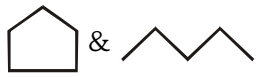
(III)

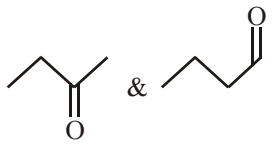
(1) I and II are identical
(2) I and II are diasteremers
(3) I and III are enantiomers
(4) I and II and enantiomers

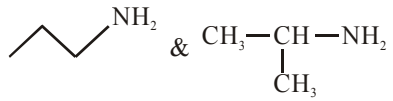
10. Which of the following compounds can exist i *meso* form ?
(1) 2, 3-Pentanediol (2) 2, 3-Butanediol
(3) 1, 2-Ethanediol (4) 1, 2-Propanediol

11. Which of the following is correct matching :-

(1)  : Position Isomers

(2)  Ring Chain Isomers

(3)  : Position Isomers

(4) 

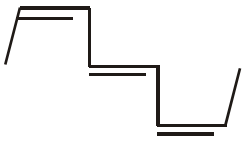
: Position Isomers

12. The number of geometrical isomers for following structure is :-

$ClHC = CH - CH_2 - CH = CH - CH = \ddot{N}OH$

(1) 2 (2) 4
(3) 3 (4) 8

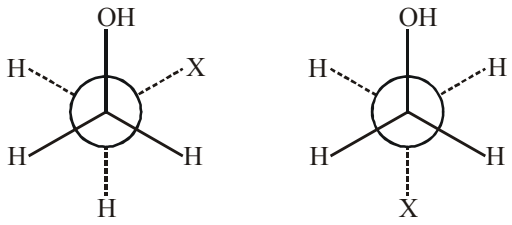
13. The IUPAC name of following structure is:-



(1) (2E, 4E, 6Z) Octa - 2, 4, 6 - Triene
(2) (2E, 4E, 6E) Octa - 2, 4, 6 - Triene
(3) (2Z, 4E, 6Z) Octa - 2, 4, 6 - Triene
(4) (2Z, 4Z, 6Z) Octa - 2, 4, 6 - Triene

14. Which confirmation of cyclohexane is least stable?
(1) Chair form (2) Half chair form
(3) Boat form (4) Twist boat

15.



(A) (B)

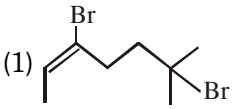
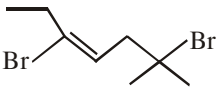
A is more stable than B, if X is :-
(1) $-CH_3$ (2) F
(3) Br (4) $-C_2H_5$

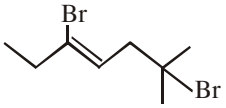
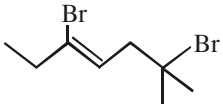
16. Which of the following does not show geometrical isomerism :-
(1) 1, 2-dichloro- 1-pentene
(2) 1, 3-dichloro- 2-pentene
(3) 1, 1-dichloro- 1-pentene
(4) 1, 4-dichloro- 2-pentene

17. The number of cis-trans isomer possible for the following compound :-

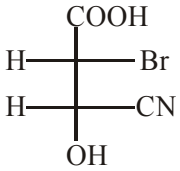
(1) 2 (2) 4 (3) 6 (4) 8

18. Which of following represent (E)-3,6-dibromo-6-methyl-3-heptene :

(1)  (2) 

(3)  (4) 

19. The absolute configuration of the two chiral center in the following molecule are –



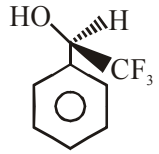
(1) 2–R, 3–S (2) 2–R, 3–R
(3) 2–S, 3–S (4) 2–S, 3–R

20. Which of the following compounds is a meso compound :-

(1)  (2) 

(3)  (4) 

21. The R/S configuration of these compounds are respectively :-

(1) R, R (2) R, S (3) S, R (4) S, S

ANSWER KEY

Exercise-I

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	**3**	**3**	**4**	**1**	**4**	**1**	**4**	**3**	**4**	**2**
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	**4**	**4**	**3**	**2**	**2**	**3**	**1**	**2**	**1**	**3**
Que.	21									
Ans.	**2**									

PREVIOUS YEARS' QUESTIONS EXERCISE-II

1. The enolic form of acetone contains **[IIT-90]**

(1) 9σ bonds, 1π bond and 2 lone pairs

(2) 8σ bonds, 2π bonds and 2 lone pairs

(3) 10σ bonds, 1π bonds and 1 lone pair

(4) 9σ bonds, 2π bond and 1 lone pair

2. An organic molecule necessarity shows optical activitiy if it – **[IIT-93]**

(1) Contains asymmetric carbon atoms

(2) is non polar

(3) is non superimposable on its mirror image

(4) is superimposable on its mirror image

3. The compound which is not isomeric with diethyl ether is – **[IIT-93]**

(1) butan–1–ol

(2) butanone

(3) 2–methyl propan–2–ol

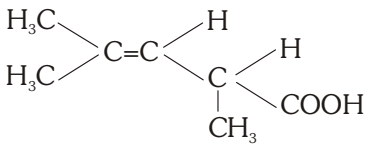
(4) n–propyl methyl ether

4. Ordinary light can be converted into plane polarized light with the help of a– **[IIT-93]**

(1) Nickel prism (2) Nicol prism

(3) Diffraction grating (4) Quartz cell

5. The structure shows : **[IIT-95]**



(1) Geometrical isomerism

(2) Optical isomerism

(3) Geometrical & optical isomerism

(4) tautomerism

6. How many optically active stereoisomers are possible for butane –2,3–diol – **[IIT-97]**

(1) 1 (2) 2 (3) 3 (4) 4

7. Isomers which can be interconverted through rotation around of single bond are - **[IIT-97]**

(1) Conformers

(2) Diastereomers

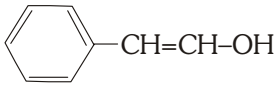
(3) Enantiomers

(4) Positional isomers

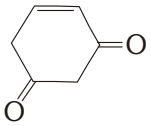
8. The number of possible enantiomeric pairs that can be produced during monochlorination of 2–methyl butane is – **[IIT-97]**

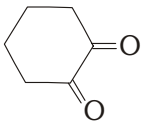
(1) 2 (2) 3 (3) 4 (4) 1

9. Tautomerism is not exhibited by– **[IIT-98]**

(1) 

(2) 

(3) 

(4) 

10. Rotation of polarised light can be measured by– **[IIT-98]**

(1) Monometer

(2) Galvanometer

(3) Polarimeter

(4) Viscometer

11. The optically active tartaric acid is named as D–(+) tartaric acid because it has a positive – **[IIT-99]**

(1) optical rotation and is derived from D–glucose

(2) pH in an organic solvent

(3) optical rotation and is derived from D–(+)– glyceraldehyde

(4) optical rotation only when substituted by deuterium

12. Which of the following compound will exhibits geometrical isomerism– **[IIT-2000]**

(1) 1–phenyl–2–butene

(2) 3–phenyl–1–butene

(3) 2–phenyl–1–butene

(4) 1, 1–diphenyl–1–propene

13. Which of the following exhibits stereoisomerism– **[IIT-2000]**

(1) 2–Methylbutene–1

(2) 3–Methylbutyne–1

(3) 3–Methylbutanoic acid

(4) 2–Methylbutanoic acid

14. Recemic mixture is formed by mixing two-

[AIEEE-2002]

(1) isomeric compounds

(2) chiral compounds

(3) meso compounds

(4) enantiomers with chiral carbon

15. Geometrical isomerism is not shown by-

[AIEEE-2002]

(1) 1,1–dichloro–1–pentene

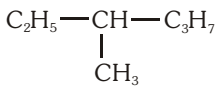
(2) 1,2–dichloro–1–pentene

(3) 1,3–dichloro–2–pentene

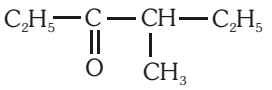
(4) 1,4–dichloro–2–pentene

16. Among the following four structures I to IV

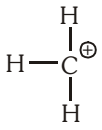
[AIEEE-2003]



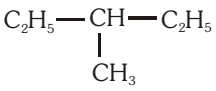
(I)



(II)



(III)



(IV)

It is true that-

(1) All four are chiral compounds

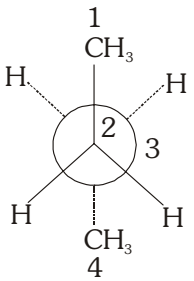
(2) only I and II are chiral compounds

(3) only III is a chiral compound

(4) only II and IV are chiral compounds

17. If C_2 in below compound is rotated by 120° angle in anticlockwise direction along C_2–C_3, which of the following form will be produced –

[IIT-2004]



(1) Staggered

(2) Perfectly eclipsed

(3) Perfectly staggered

(4) Gauche conformation

18. Which of the following will have a meso-isomer also-

[AIEEE-2004]

(1) 2–chlorobutane

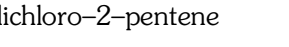
(2) 2,3–dichlorobutane

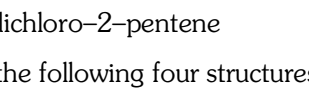
(3) 2,3–dichloropentene

(4) 2–hydroxy propanoic acid

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

[AIEEE-2004]

(1) 

(2) 

(3)

(4)

20. Which of following compounds is not chiral

[AIEEE-2005]

(1) 1–chloropentane

(2) 2–chloropentane

(3) 1–chloro–2–methyl pentane

(4) 3–chloro–2–methyl pentane

21. Of the five isomeric hexanes, the isomer which can give two monochlorinated compounds is-

[AIEEE-2005]

(1) 2-methyl pentane

(2) 2,2–dimethyl butane

(3) 2,3–dimethyl butane

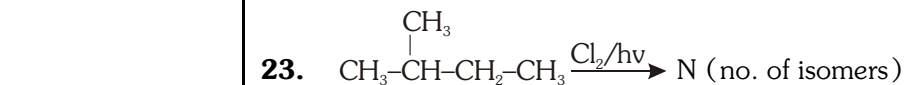
(4) n-hexane

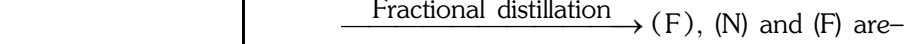
22. Which types of isomerism is shown by 2,3–dichloro butane-

[AIEEE-2005]

(1) structural (2) geometric

(3) optical (4) diastereo

23. 



[IIT-2006]

(1) 6, 4 (2) 4, 4 (3) 6, 6 (4) 3, 3

24. Increasing order of stability among the three main conformations (i.e. Eclipse, Anti, Gauche) of 2-fluoroethanol is **[AIEEE-2006]**

(1) Gauche, Eclipse, Anti

(2) Eclipse, Anti, Gauche

(3) Anti, Gauche, Eclipse

(4) Eclipse, Gauche, Anti

25. The number of structural isomers C_6H_{14} is– **[IIT-2007]**

(1) 3 (2) 4

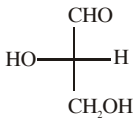
(3) 5 (4) 6

26. Which one of the following conformations of cyclohexane is chiral ? **[AIEEE - 2007]**

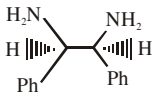
(1) Twist boat (2) Rigid

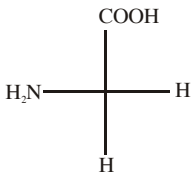
(3) Chair (4) Boat

27. Which of the following molecules is expected to rotated the plane of plane-polarised light ? **[AIEEE - 2007]**

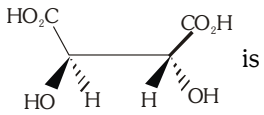
(1) 

(2) 

(3) 

(4) 

28. The absolute configuration of



is

[AIEEE - 2008]

(1) S, S (2) R, R

(3) R, S (4) S, R

29. The alkene that exhibits geometrical isomerism is :- **[AIEEE - 2009]**

(1) 2–butene

(2) 2–methyl–2–butene

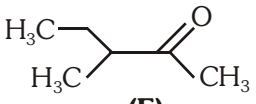
(3) Propene

(4) 2–methyl propene

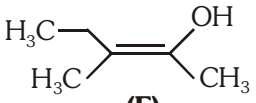
30. The number of stereoisomers possible for a compound of the molecular formula CH_3–CH=CH–CH(OH)–Me is:- **[AIEEE - 2009]**

(1) 4 (2) 6 (3) 3 (4) 2

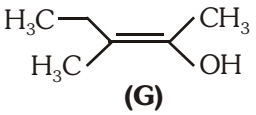
31. The correct statement(s) concerning the structures E, F and G is (are) **[IIT-2008]**



(E)



(F)



(G)

(1) **E, F** and **G** are resonance structures

(2) **E, F** and **E, G** are tautomers

(3) **F** and **G** are geometrical isomers

(4) **F** and **G** are diastereomers

32. Out of the following, the alkene that exhibits optical isomerism is :- **[AIEEE-2010]**

(1) 2-methyl-2-pentene

(2) 3-methyl-2-pentene

(3) 4-methyl-1-pentene

(4) 3-methyl-1-pentene

33. Identify the compound that exhibits tautomerism :- **[AIEEE-2011]**

(1) 2-Pentanone (2) Phenol

(3) 2-Butene (4) Lactic acid

34. How many chiral compounds are possible on monochlorination of 2–methyl butane ? **[AIEEE-2012]**

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

35. Which branched chain isomer of the hydrocarbon with molecular mass 72 u gives only one isomer of mono substituted alkyl halide ? **[AIEEE-2012]**

(1) Neohexane

(2) Tertiary butyl chloride

(3) Neopentane

(4) Isohexane

36. How many cyclic structures are possible for C_4H_6 :- **[AIEEE-2012(Online)]**

(1) 3 (2) 5

(3) 4 (4) 6

37. Maleic acid and fumaric acids are :- **[AIEEE-2012(Online)]**

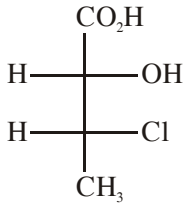
(1) Tautomers

(2) Chain isomers

(3) Geometrical isomers

(4) Functional isomers

38. The absolute configuration of : **[JEE MAINS-2016]**



(1) (2R, 3R) (2) (2R, 3S)

(3) (2S, 3R) (4) (2S, 3S)

PREVIOUS YEARS QUESTIONS				ANSWER KEY						Exercise-II
Que.	1	2	3	4	5	6	7	8	9	10
Ans.	**1**	**3**	**2**	**2**	**2**	**2**	**1**	**1**	**2**	**3**
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	**3**	**1**	**4**	**4**	**1**	**2**	**1**	**2**	**3**	**1**
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	**3**	**3**	**1**	**2**	**3**	**1**	**1**	**2**	**1**	**1**
Que.	31	32	33	34	35	36	37	38		
Ans.	**2,3,4**	**4**	**1**	**4**	**3**	**2**	**3**	**3**		