15. ISOMERISM & CLASSIFICATION OF ISOMERISM

SOLUTIONS

TEACHING TASK

JEE MAINS LEVEL QUESTIONS

1. Number of possible position isomers for Dibromobenzene is
   A) 2 B) 3 C) 4 D) 5

Answer:B

Solution:In benzene, when two bromine atoms are attached, the possible relative positions are:

1,2- (ortho)
1,3- (meta)
1,4- (para)
So, there are 3 distinct position isomers

2. The compound which is isomeric with methyl propyl ether is
   A) Butan-1-ol B) Pentan-2-ol
   C) 2-Methylbutan-2-ol D) Pentanal

Answer:A

Solution:Methyl propyl ether has the molecular formula $C_4H_{10}O$.
Butan-1-ol has the molecular formula $C_4H_{10}O$. Alcohols are functional isomers of ethers.
Pentan-2-ol has the molecular formula $C_5H_{12}O$.
2-Methylbutan-2-ol has the molecular formula $C_5H_{12}O$.
Pentanal has the molecular formula $C_5H_{10}O$.

3. Number of structural isomers for C_4H_9Cl are **(FA & SA- 5 Marks / 8 Marks)**
   A) 4 B) 5 C) 6 D) 7

Answer:A

Solution:For C_4H_9Cl, there are four possible structural isomers: 1-chlorobutane, 2-chlorobutane, 1-chloro-2-methylpropane, and 2-chloro-2-methylpropane.

4. Which of the following alkanes can form only one monochloro derivative?
   A) Pentane B) 2-Methylbutane
   C) 2,2-Dimethylpropane D) 2,3-Dimethylbutane

Answer:C

Solution:An alkane will form only one monochloro derivative if all hydrogens are equivalent (due to symmetry).
A) Pentane ($CH_3–CH_2–CH_2–CH_2–CH_3$)
Linear chain, hydrogens are not equivalent.
Chlorination can occur at terminal carbons (1°) or internal carbons (2°), giving multiple derivatives. $\rightarrow$Not correct.

B) 2-Methylbutane (isopentane)
Has different positions: primary, secondary, and tertiary hydrogens.
Multiple distinct monochloro derivatives possible. → Not correct.
C) 2,2-Dimethylpropane (neopentane)
Structure: $(CH_3)_4C$.
All 12 hydrogens are equivalent because of perfect symmetry.
Only one monochloro derivative possible. → Correct.
D) 2,3-Dimethylbutane
Has different sets of hydrogens (methyl groups, central carbons).
Multiple distinct monochloro derivatives possible. → Not correct

5. Propylene bromide and trimethylene bromide are **(FA & SA- 2 Marks)**
A) Chain isomers B) Position isomers
C) Functional isomers D) Metamers

Answer:B

Solution:Propylene bromide = 1,2-dibromopropane ($CH_3–CHBr–CH_2Br$)
Trimethylene bromide = 1,3-dibromopropane ($Br–CH_2–CH_2–CH_2–Br$)

Same $C_3H_6Br_2$ formula, differ in position of Br → position isomers.

6. The functional isomer of methyl cyanide is
A) Ethyl amine B) Methyl isocyanide
C) Acetamide D) Glycine

Answer:B

Solution:Methyl cyanide CH_3CN and methyl isocyanide CH_3NC are functional isomers. Both compounds have the same molecular formula, C_2H_3N, but they contain different functional groups: a cyanide group $-C \equiv N$ in methyl cyanide and an isocyanide group $-N \equiv C$ in methyl isocyanide.

7. The functional isomer of CH_3CH_2COOH is
A) CH_3COOCH_3 B) $HOCH_2CH_2CHO$
C) $CH_3CH_2CH_2OH$ D) CH_3OCH_2CHO

Answer:A

Solution:Propionic acid ($C_3H_6O_2$) and methyl acetate are functional isomers (carboxylic acid ↔ ester)

8. Which isomer of C_6H_{14} has two tertiary butyl groups?
A) n-Hexane B) 2,2-Dimethylbutane
C) 2,3-Dimethylbutane D) 2,2,3-Trimethylbutane

Answer:C

Solution:A tertiary carbon is a carbon atom bonded to three other carbon atoms.The structure of 2,3-dimethylbutane is $CH_3-CH(CH_3)-CH(CH_3)-CH_3$.In this structure, both the second and third carbon atoms in the main butane chain are bonded to one hydrogen atom, two other carbons in the main chain, and one methyl group carbon (a total of three other carbon atoms).Therefore, 2,3-

dimethylbutane has two tertiary carbons.

9. The number of isomers for the compound with molecular formula C_3H_8O is
A) Two B) Three C) Four D) Five

Answer:B

Solution:propan-1-ol, propan-2-ol and methoxyethane (ether) — three constitutional isomers.

10. Which of the following compounds is isomeric with triethyl amine?
A) 1-Hexanamine B) 2-Hexanamine
C) 3-Hexanamine D) N,N-Dimethylbutanamine

Answer:A,B,C,D

Solution:Triethylamine = $(C_2H_5)_3N = C_6H_{15}N$

Isomers:

A) 1-Hexanamine = $C_6H_{15}N \rightarrow$ Yes
B) 2-Hexanamine = $C_6H_{15}N \rightarrow$ Yes
C) 3-Hexanamine = $C_6H_{15}N \rightarrow$ Yes
D) N,N-Dimethylbutanamine = $C_6H_{15}N \rightarrow$ Yes, all same formula

11. Isomers of butanoic acid ($C_4H_8O_2$) are: **(FA & SA- 3 Marks / 4 Marks)**
A) $CH_3CH_2COOCH_3$ and $HCOOCH_2CH_2CH_3$
B) $CH_3COOCH_2CH_3$ and $HCOOCH(CH_3)_2$
C) $CH_3CH_2CH_2COOH$ and $CH_3COCH_2CH_3$
D) $CH_3CH_2OCH_2CH_3$ and $CH_3CH_2CH_2CHO$

Answer:A

Solution:$CH_3CH_2COOCH_3$ and $HCOOCH_2CH_2CH_3$. — (Both are esters with formula $C_4H_8O_2$ and are structural isomers of butanoic acid.)

12. The number of secondary amines of formula $C_4H_{11}N$ is:
A) 2 B) 3 C) 4 D) 1

Answer:B

Solution:Secondary amines with total 4 C: diethylamine, N-methyl-n-propylamine, N-methyl-isopropylamine $\rightarrow$ 3.

13. Which is not an isomer of methyl propyl ether?
A) Butan-1-ol B) 2-Methylpropan-2-ol
C) Diethyl ether D) Butanal

Answer:D

Solution:Methyl propyl ether = $C_4H_{10}O$.

Isomers: butan-1-ol, butan-2-ol, 2-methylpropan-1-ol, 2-methylpropan-2-ol, diethyl ether.

A) Butan-1-ol $\rightarrow C_4H_{10}O \rightarrow$ isomer $\rightarrow$ Yes (so is an isomer)
B) 2-Methylpropan-2-ol $\rightarrow C_4H_{10}O \rightarrow$ isomer $\rightarrow$ Yes
C) Diethyl ether $\rightarrow C_4H_{10}O \rightarrow$ isomer $\rightarrow$ Yes
D) Butanal $\rightarrow C_4H_8O \rightarrow$ different formula $\rightarrow$ NOT an isomer of $C_4H_{10}O$

JEE ADVANCED LEVEL QUESTIONS

Multicorrect Answer Type

14. Which of the following statements are correct?
    A) Chain isomerism arises due to difference in the arrangement of atoms in the carbon chain.
    B) For a substance to show chain isomerism it must contain at least four carbon atoms
    C) Butane has two chain isomers namely n-Butane & iso butane .
    D) Pentane has 3 chain isomers namely n-pentane,isopentane and neopentane.

Answer:A,B,C,D

Solution:A) True — chain isomerism arises from different arrangements of the carbon skeleton.
B) True — the smallest example is butane (C_4); fewer than 4 C's cannot give chain isomers.
C) True — n-butane and isobutane (2-methylpropane) are the two chain isomers of C_4H_{10}.
D) True — C_5H_{12} has three chain isomers: n-pentane, isopentane (2-methylbutane), neopentane (2,2-dimethylpropane).

15. Which of the following statements are incorrect?
    A) 1-propanol and 2- propanol are chain isomers
    B) ethyl Alcohol and Dimethyl Ether are functional isomers
    C) Acetic acid and Methyl Formate are positional isomers
    D) As the number of carbon atoms increases the number of chain isomers increases.

Answer:A,C

Solution:
A) Incorrect — 1-propanol and 2-propanol are positional isomers (same chain, different position of –OH), not chain isomers.
B) Correct — ethanol and dimethyl ether are functional isomers (alcohol vs ether).
C) Incorrect — acetic acid and methyl formate are functional isomers (acid vs ester), not positional isomers.
D) Correct — increasing carbon number generally increases the count of possible chain isomers.

Reason and Assertion type

A) Both A and R are true and R is the correct explanation of A
B) Both A and R are true and R is not the correct explanation of A
C) A is true and R is false
D) A is false and R is true

16. **Assertion :** 1- Butene and 2- Butene are positional isomers
    Reason : Positional isomerism arises due to difference in the position of a substituent (or) C = C (or) C ≡ C bond or functional group

Answer:A

Solution:1-Butene vs 2-butene differ only in the position of the C=C — that is positional isomerism.

17. **Assertion** : Carboxylic acids with Esters shows functional isomerism
Reason : Functional isomerism arises due to difference in the functional group.

Answer:A

Solution:Carboxylic acids and their corresponding esters are functional isomers because they contain different functional groups.

Comprehension Type

When the isomerism is due to difference in the arrangement of atoms with in the molecule, with out any reference to space, the phenomenon is known as **structural isomerism**.

18. Which of the following statement is incorrect
A) Minimum carbons required for chain isomerism & position isomerism in alkanes ® 4, 6
B) Minimum carbons required for chain isomerism & position isomerism in alkenes ® 4, 4
C) Minimum carbons required for chain isomerism & position isomerism in alkynes ®4, 4
D) Alkane with cycloalkane and alkyne and alkadiene with cycloalkenes show Ring-chain Isomerism.

Answer:C

Solution:Minimum carbons required for chain isomerism & position isomerism in alkynes ®5, 4

19. The number of chain isomers possible for formula C_9H_{20} is
A) 20 B) 18 C) 35 D) 75

Answer:C

Solution:This is counting alkane isomers (nonane isomers). Known number of alkane isomers:
C4=2, C5=3, C6=5, C7=9, C8=18, C9=35, C10=75.
So C_9H_{20} has 35 chain isomers.

Integer Type

20. The minimum number of required to show positional isomerism is _____

Answer:4

Solution:Positional Isomerism:It occurs when a functional group, multiple bond, or substituent can occupy different positions on the same carbon skeleton.
To allow this, the molecule must have enough carbons so that shifting the group/bond gives distinct compounds.
Minimum carbons required
Alkanes $\rightarrow$ 6 carbons (e.g., hexane derivatives where substituents can shift positions).

Alkenes → 4 carbons (but-1-ene vs but-2-ene).
Alkynes → 4 carbons (1-butyne vs 2-butyne).
The minimum number of carbons required to show positional isomerism is 4.

21. The difference in number of chain isomers formed between formula C_6H_{14} C_7H_{16} is _____

Answer:4

Solution:Difference between C_6H_{14} and C_7H_{16} chain isomers:
C_6H_{14} → 5 isomers
C_7H_{16} → 9 isomers
Difference = 9-5=4

Matrix Matching Type

22.

Column-I	**Column-II**
A) Glucose & Fructose	P) Position Isomerism
B) Butene & Cyclobutane	Q) Chain Isomerism
C) n-Butane & iso butane	R) Ring chain Isomerism
D) 1-Butyne & 2-Butyne	S) Functional Isomerism

Answer:A-S, B-R, C-Q, D-P

Solution:

A) Glucose & Fructose	S) Functional Isomerism
B) Butene & Cyclobutane	R) Ring chain Isomerism
C) n-Butane & iso butane	Q) Chain Isomerism
D) 1-Butyne & 2-Butyne	P) Position Isomerism

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS(CQU'S)

1. Ethanol and dimethyl ether are a pair of:
A) chain isomers B) position isomers
C) metamers D) functional isomers

Answer:D

Solution:Ethanol (–OH) and dimethyl ether (–O–) have same formula C_2H_6O but different functional groups

2. Which of the following are isomers?
A) Acetic acid and methyl formate B) Methanol and ethanol
C) Propanol and propanal D) Butane and pentane

Answer:A

Solution:
A) Acetic acid (CH_3COOH, $C_2H_4O_2$) and methyl formate ($HCOOCH_3$, $C_2H_4O_2$) → same formula → functional isomers → YES.
B) Methanol (CH_3OH, C) and ethanol (C_2H_5OH) → different formulas → NO.
C) Propanol (C_3H_8O) and propanal (C_3H_6O) →different formulas → NO.

D) Butane (C_4H_{10}) and pentane (C_5H_{12}) $\rightarrow$ different formulas $\rightarrow$ NO.

3. Aldehydes and ketones of same molecular formula are:
   A) Chain isomers B) Position isomers
   C) Functional isomers D) Tautomers

Answer:C

Solution:Aldehydes and ketones with the same formula differ in functional group placement (e.g. propanal vs acetone)

4. Cyclopropane is isomeric with:
   A) Propane B) Propene C) Propyne D) Propanol

Answer:B

Solution:Cyclopropane and propene both have formula C_3H_6 (they are ring $\leftrightarrow$ unsaturated isomers)

5. n-hexane and 2-methylpentane are ___ isomers:
   A) Chain B) Position C) Geometrical D) Optical

Answer:A

Solution:Chain — n-hexane and 2-methylpentane differ in carbon skeleton.

6. How many chain isomers are possible for C_7H_{16}?
   A) Seven B) Eight C) Nine D) Ten

Answer:C

Solution: Number of isomers for C_7H_{16} = 9.

7. A functional isomer of ethyl acetate is:
   A) Methyl propanoate B) Propanoic acid
   C) Butanoic acid D) Butanal

Answer:A,C

Solution:Functional isomers must have same molecular formula but different functional groups.
Ethyl acetate = $C_4H_8O_2$
A) Methyl propanoate $\rightarrow$ $C_4H_8O_2$ $\rightarrow$ (ester) $\rightarrow$ functional isomer
B) Propanoic acid $\rightarrow$ $C_3H_6O_2$ $\rightarrow$ (different formula)
C) Butanoic acid $\rightarrow$ $C_4H_8O_2$ $\rightarrow$ (acid) $\rightarrow$ functional isomer
D) Butanal $\rightarrow$ C_4H_8O $\rightarrow$ (different formula)

8. $CH_3CH_2OCH_2CH_3$ and $CH_3OCH_2CH_2CH_3$ are:
   A) Metamers B) Functional isomers
   C) Positional isomers D) Chain isomers

Answer:A

Solution:Both ethers, same functional group, differ in alkyl group size $\rightarrow$ metamers.

9. Which are functional isomers?
   A) Acetone and propanal B) Ethanol and dimethyl ether

C) Butanoic acid and ethyl acetate D) All of the above

Answer:D

Solution:Each pair listed are functional isomers (A: ketone vs aldehyde; B: alcohol vs ether; C: carboxylic acid vs ester)

10. Only one isomeric monochloro derivative is possible for:
A) n-Pentane B) 2,2-Dimethylpropane
C) 2-Methylbutane D) Cyclohexane

Answer:B

Solution:2,2-Dimethylpropane (also called "neopentane") has all its hydrogen atoms equivalent, so when a chlorine atom substitutes any of them, it will result in the same molecule, meaning only one isomeric monochloro derivative is possible.

JEE MAINS LEVEL QUESTIONS

11. Which of the following is the functional isomer of methyl acetate?
A) Ethyl acetate B) Propanoic acid C) Ethyl formate D) Propanone

Answer:C

Solution:Methyl acetate = $CH_3COOCH_3 \rightarrow C_3H_6O_2$.
Functional isomer = same formula, different functional group.
A) Ethyl acetate $C_4H_8O_2 \rightarrow$ different formula $\rightarrow$no.
B) Propanoic acid $C_3H_6O_2 \rightarrow$ same formula, acid vs ester $\rightarrow$functional isomer ?
C) Ethyl formate $C_3H_6O_2 \rightarrow$ same formula, also ester (structural isomer, not functional isomer with methyl acetate) $\rightarrow$no, both esters.
D) Propanone $C_3H_6O \rightarrow$ different formula $\rightarrow$ no.

12. A hydrocarbon has molar mass 86. Number of chain isomers possible is **(FA & SA- 5 Marks / 8 Marks)**
A) Five B) Six C) Four D) Ten

Answer:B

Solution:The general formula for an alkane is C_nH_{2n+2}. The molar mass is given as 86.The equation for the molar mass is:

$$12n + 1(2n + 2) = 86$$
$$14n + 2 = 86$$
$$14n = 84$$
$$n = 6$$

Molar mass 86 $\rightarrow$ formula C_6H_{14} (alkane).
Number of chain isomers of hexane = 5.

13. The number of geminal dihalides possible with formula $C_4H_8Br_2$ is
A) 4 B) 3 C) 2 D) 5

Answer:B

Solution:Geminal dihalides = two bromines on the same carbon.
Actually, total geminal dibromides for C4:

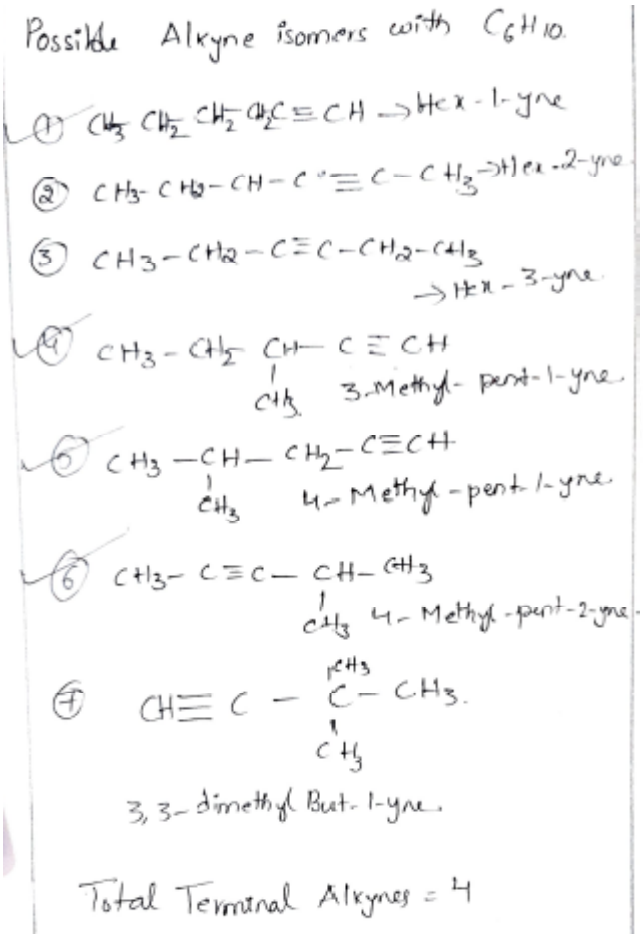
1,1-dibromobutane
2,2-dibromobutane
1,1-dibromo-2-methylpropane

14. The number of possible terminal alkynes with molecular formula C_6H_{10} is **(FA & SA- 3 Marks / 4 Marks)**

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

Answer:C

Solution:



15. The number of structural isomers of dichlorobenzene ($C_6H_4Cl_2$) is:

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

Answer:B

Solution:Dichlorobenzene:
1,2-dichloro (ortho)
1,3-dichloro (meta)
1,4-dichloro (para)
Total = 3.

16. Which compound is not an isomer of butyl alcohol (C_4H_9OH)?
A)Diethyl ether B) 2-Methylpropan-2-ol
C)2-Methylpropan-1-ol D)Butanone

Answer:D

Solution:$C_4H_{10}O$ formula for butyl alcohol.
A) Diethyl ether ($C_4H_{10}O$) $\rightarrow$ same formula, different functional group $\rightarrow$ is functional isomer
B) 2-Methylpropan-2-ol ($C_4H_{10}O$) $\rightarrow$ alcohol, structural isomer
C) 2-Methylpropan-1-ol ($C_4H_{10}O$) $\rightarrow$ alcohol, structural isomer
D) Butanone C_4H_8O $\rightarrow$ different formula $\rightarrow$ not an isomer of $C_4H_{10}O$. $\rightarrow$ correct "not isomer"

17. The number of ether isomers with the formula $C_4H_{10}O$ is
A) 2 B)3 C)4 D)5

Answer:B

Solution:Ethers with C4:
$CH_3–O–CH_2CH_2CH_3$ (methyl propyl ether)
$CH_3–O–CH(CH_3)_2$ (methyl isopropyl ether)
$CH_3CH_2–O–CH_2CH_3$ (diethyl ether)

18. The number of cyclic structural isomers of $C_3H_4Cl_2$ (dichloropropene excluded, only cyclics) is
A) 2 B)3 C) 4 D)1

Answer:A

Solution:Cyclic C3 = cyclopropane derivatives: geminal (1,1-) and vicinal (1,2-) $\rightarrow$ 2 constitutional isomers (vicinal also has cis/trans stereoisomers but asked structural) .

19. Which of the following has the largest number of chain isomers?
(FA & SA- 2 Marks)
A) C_6H_{14} B)C_7H_{16} C)C_5H_{12} D)C_8H_{18}

Answer:D

Solution:Counts: C_5H_{12} = 3, C_6H_{14} = 5, C_7H_{16} = 9, C_8H_{18} = 18 $\rightarrow$ largest is C_8H_{18}.

20. Which of the following compounds will exhibit geometrical isomerism?
A) 2-Butene B)1-Butene
C)2-Methyl-2-butene D)Propene

Answer:A

Solution:2-Butene has cis/trans; 1-butene, propene and 2-methyl-2-butene do not (2-methyl-2-butene has identical groups on one double carbon).

JEE ADVANCED LEVEL QUESTIONS

Multicorrect Answer Type

21. Which of the following are characteristics of chain isomers?

A)Same molecular formula
B) Different carbon skeletons
C)Same functional group
D) Different functional groups

Answer:A,B,C

Solution:Chain isomers have:
Same molecular formula
Different carbon skeletons
Same functional group (functional group remains unchanged)
They do NOT have different functional groups.

22. Which of the following pairs of functional groups can exhibit functional isomerism with each other?
A)Nitroalkanes and Alkyl nitrites
B) Monocarboxylic acids and Esters
C)Aldehydes and Ketones
D) Alkyl halides and Haloalkenes

Answer:A,B,C

Solution:Functional isomerism means same molecular formula, different functional groups.
A) Nitroalkanes ($R–NO_2$) and Alkyl nitrites (R–O–N=O)
Example: $CH_3–NO_2$ (nitromethane) and $CH_3–O–NO$ (methyl nitrite) both have formula CH_3NO_2 $\rightarrow$ possible.
B) Monocarboxylic acids and Esters
Example: $C_3H_6O_2$ $\rightarrow$Propanoic acid (C2H5COOH) and methyl acetate (CH_3COOCH_3) $\rightarrow$ possible.
C) Aldehydes and Ketones
Example: C_3H_6O $\rightarrow$ Propanal (CH_3CH_2CHO) and acetone ($(CH_3)_2C=O$) $\rightarrow$ possible.

Reason and Assertion type

A) Both A and R are true and R is the correct explanation of A
B) Both A and R are true and R is not the correct explanation of A
C) A is true and R is false
D) A is false and R is true

23. **Assertion :** 2-Methylpentane and 3-Methylpentane are chain isomers.
Reason : Chain isomerism arises due to a difference in the branching of the carbon skeleton.

Answer:D

Solution:The assertion is false — 2-methylpentane and 3-methylpentane have the same carbon skeleton (both are methyl-substituted pentanes); they differ only in the position of the methyl group, so they are position isomers, not chain isomers.
The reason is true — chain isomerism does arise from differences in the carbon skeleton/branching.

24. **Assertion :** Cyclohexene and 1,2-Hexadiene are not functional isomers.
Reason : They are not chain isomers because their molecular formulas are

different.

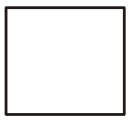
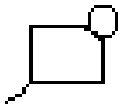
Answer:C

Solution:Both have the same molecular formula (C_6H_{10}) but differ as cyclic alkene vs acyclic diene; they are ring–chain isomers, not functional isomers. The reason is incorrect because their molecular formulas are the same, not different.

Comprehension Type

Ring chain Isomers possess same molecular formula but different mode of linking (open or closed chain) of carbon atoms.

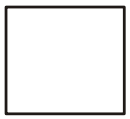
25. Which of the following is the correct isomer of butyne

A)  B)  C)  D) All the above

Answer:B

Solution:Butyne = C_4H_6 (an alkyne)

Isomers must have the same molecular formula (C_4H_6) but different structures.

A)  → Cyclobutane (C_4H8) → Not an isomer of butyne (C4H6).

Different formula.

B)  → Cyclobutene (C_4H_6) → Correct isomer of butyne

(same formula C_4H_6).

Cyclobutene and butyne are ring–chain isomers.

C) A substituted cyclobutane/other structure This appears to have too many atoms (more substituents), so formula → C_4H_6 → Not an isomer of butyne.

Integer Type

26. The minimum number of carbon atoms required in an alkane to show chain isomerism is_____

Answer:4

Solution:For a substance to show chain isomerism it must contain at least four carbon atoms

27. The minimum number of carbon atoms required for a cycloalkane to show geometrical (cis-trans) isomerism is _____

Answer:4

Solution:The minimum number of carbon atoms required for a cycloalkane to show geometrical (cis-trans) isomerism is four (4), as seen in cyclobutane derivatives or larger rings with substituents on non-adjacent carbons (e.g., 1,2-dimethylcyclobutane), allowing groups to be on the same side (cis) or opposite sides (trans) of the ring's plane, which is a key requirement for this type of

stereoisomerism.

Matrix Matching Type

28. **Column-I** **Column-II**

A) Alcohols and Ethers — P) Chain Isomerism
B) Aldehydes and Ketones — Q) Functional Isomerism
C) Alkyne and Cycloalkene — R) Ring-Chain Isomerism
D) Minimum 3 carbons in alkane — S) No Functional Isomerism

Answer:A-Q,B-Q,C-R,D-S

Solution:

A) Alcohols and Ethers — Q) Functional Isomerism
B) Aldehydes and Ketones — Q) Functional Isomerism
C) Alkyne and Cycloalkene — R) Ring-Chain Isomerism
D) Minimum 3 carbons in alkane — S) No Functional Isomerism

KEY

				TEACHING TASK					
			JEE MAINS& ADVANCED LEVEL QUESTIONS						
1	2	3	4	5	6	7	8	9	10
B	A	A	C	B	B	A	C	B	A,B,C,D
11	12	13	14	15	16	17	18	19	20
A	B	D	A,B,C,D	A,C	A	A	C	C	4
21	22								
4	A-S, B-R, C-Q, D-P								
				LEARNERS TASK					
			CONCEPTUAL UNDERSTANDING QUESTIONS(CQU'S)						
1	2	3	4	5	6	7	8	9	10
D	A	C	B	A	C	A,C	A	D	B
			JEE MAINS LEVEL QUESTIONS						
11	12	13	14	15	16	17	18	19	20
C	B	B	C	B	D	B	A	D	A
			JEE ADVANCED LEVEL QUESTIONS						
21	22	23	24	25	26	27	28		
A,B,C	A,B,C	D	C	B	4	4	A-Q,B-Q,C-R,D-S		