

13. An introduction to AS Level organic chemistry Starter Quiz · 课前小测

A-Level Chemistry

Name: _____ Score: _____

1. A functional group is:

- ☐ the reactive part of a molecule that decides its properties
- ☐ the carbon skeleton only
- ☐ the number of atoms
- ☐ the molecule's mass

2. Homolytic fission of a covalent bond produces:

- ☐ two free radicals (one electron to each atom)
- ☐ two ions
- ☐ one molecule
- ☐ no products

3. In an addition reaction:

- ☐ two molecules join to make one
- ☐ a molecule is split by water
- ☐ a group is swapped
- ☐ a small molecule is lost

4. An sp^3 carbon (four single bonds) is:

- ☐ tetrahedral, 109.5°
- ☐ planar, 120°
- ☐ linear, 180°
- ☐ bent, 104.5°

5. Isomers are compounds with:

- ☐ the same molecular formula but a different arrangement of atoms
- ☐ different molecular formulas
- ☐ the same arrangement of atoms
- ☐ no functional group

6. A group of atoms that gives an organic molecule its characteristic reactions is a _____ group.

7. Breaking a bond so each atom keeps one electron is _____ fission.

8. A carbon atom forming four single bonds is tetrahedral with bond angles of about 109.5° .

- ☐ True ☐ False

9. Compounds with the same molecular formula but different structures are structural _____.

10. E/Z (cis-trans) isomerism arises because there is no rotation about a C=C double bond.

- ☐ True ☐ False

1. the reactive part of a molecule that decides its properties

Molecules with the same functional group behave alike, because the group is the reactive part.

2. two free radicals (one electron to each atom)

Homolytic = even split, one electron each $\rightarrow$ two radicals; heterolytic = uneven $\rightarrow$ two ions.

3. two molecules join to make one

Addition combines two molecules into a single product (e.g. across a C=C bond).

4. tetrahedral, 109.5°

Four single bonds (sp^3) give a tetrahedral shape at 109.5°.

5. the same molecular formula but a different arrangement of atoms

Isomers share a molecular formula but differ in how the atoms are arranged.

6. functional

e.g. $-OH$, $-COOH$.

7. homolytic

It forms free radicals.

8. True

Four bonding pairs repel equally.

9. isomers

Chain, position and functional-group isomerism.

10. True

The restricted rotation fixes the groups' positions.