

29. An introduction to A Level organic chemistry Starter Quiz · 课前小测

A-Level Chemistry

Name: _____ Score: _____

1. Aromatic compounds are built on a:

- ☐ benzene ring (six carbons)
- ☐ single C=C bond
- ☐ long straight chain
- ☐ metal ion

2. Electrophilic substitution is when:

- ☐ an electrophile replaces a hydrogen atom on a benzene ring
- ☐ a nucleophile adds across a double bond
- ☐ two molecules join with no loss
- ☐ a radical removes an electron

3. Each carbon in benzene is:

- ☐ sp^2 hybridised, forming a flat ring of sigma bonds
- ☐ sp^3 hybridised and tetrahedral
- ☐ sp hybridised and linear
- ☐ not bonded to hydrogen

4. Two enantiomers differ in that they:

- ☐ rotate plane-polarised light in opposite directions (and may differ in biological effect)
- ☐ have different melting points
- ☐ have different molecular formulas
- ☐ react completely differently

5. When naming an aromatic compound, you:

- ☐ use the benzene ring as the parent and number the substituents
- ☐ ignore the ring
- ☐ never use numbers
- ☐ name only the longest chain

6. A compound containing a benzene ring is described as _____.

7. Benzene is a flat, regular hexagon.

- ☐ True ☐ False

8. A single pure enantiomer is optically active (it rotates plane-polarised light).

- ☐ True ☐ False

9. Benzene has the molecular formula C_6H_6 .

- ☐ True ☐ False

10. Reduction adds hydrogen (or removes oxygen) to a molecule.

- ☐ True ☐ False

A-Level Chemistry

1. **benzene ring (six carbons)**

Aromatic compounds contain a benzene ring; new families also include the amide group.

2. **an electrophile replaces a hydrogen atom on a benzene ring**

Benzene reacts by electrophilic substitution, keeping its stable ring while swapping an H for the electrophile.

3. **sp² hybridised, forming a flat ring of sigma bonds**

sp² carbons give the flat hexagon; the leftover p-orbitals form the delocalised π system.

4. **rotate plane-polarised light in opposite directions (and may differ in biological effect)**

Enantiomers are otherwise identical; they rotate plane-polarised light oppositely and can act differently in the body.

5. **use the benzene ring as the parent and number the substituents**

e.g. 3-nitrobenzoic acid puts a –NO₂ on carbon 3 of the ring.

6. **aromatic**

Aliphatic compounds have no benzene ring.

7. **True**

Its sp² σ framework and delocalised π system make it planar and symmetrical.

8. **True**

A pure enantiomer rotates the plane of polarised light; only a racemic mixture cancels out.

9. **True**

Six carbons in a ring, each with one hydrogen.

10. **True**

The opposite of oxidation.