

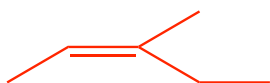


ISOMERISM

- 1 Define these terms.
- a stereoisomerism **same structure but different arrangement of atoms in space** (1)
- b structural isomerism **same molecular formula but different structure** (1)

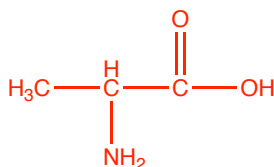
- 2 3-methylpent-2-ene exists as *E* and *Z* isomers. Explain why these isomers exist and draw the structure of the *Z* isomer.

each C atom in C=C has two different groups attached
no rotation around C=C



(3)

- 3 The amino acid alanine (also known as 2-aminopropanoic acid) is optically active.
- a Draw the structure of alanine.



(1)

- b What structural feature does this compound contain that causes it to be optically active.

C with four different groups attached

(1)

- c Give one physical property that is different between the two enantiomers of alanine.

rotates plane of polarised light in opposite directions

(1)

- d Give one chemical property that is different between the two enantiomers of alanine.

react differently with chiral molecules

(1)