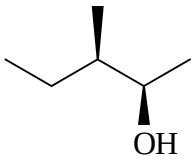
Marks 8

- The structure of a chiral molecule, **P**, is shown below. **P** has a specific optical rotation of +26˚.



P

Assign the stereochemistry at the two stereogenic centres, showing your working.

Draw the structure of a molecule that will have a specific optical rotation of –26˚.

Draw a diastereoisomer of **P**.

The addition of hot concentrated sulfuric acid causes **P** to transform into another molecule, **Q** (C_6H_{12}) that is optically inactive. What is the structure of molecule **Q** and why is it optically inactive?

Name molecule **Q**.

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