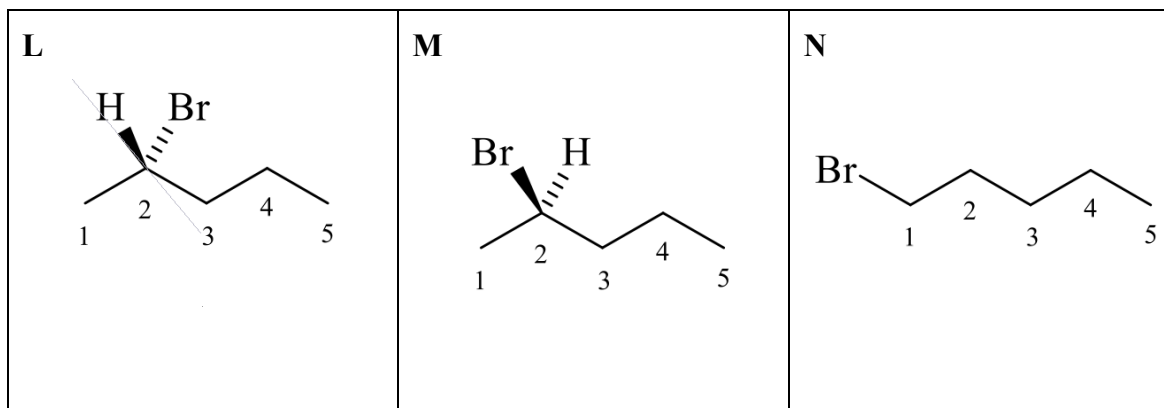


Marks
6

- When HBr reacts with 1-pentene, three products, **L**, **M** and **N**, are formed. **L** and **M** are enantiomers, whilst **L** and **N** (and **M** and **N**) are constitutional isomers. Give the structures of these products and explain how they form? Discuss the relative amounts of each product, paying attention to the regioselectivity and stereoselectivity of the reaction.

Hint: You need to discuss important aspects of the reaction mechanism, including the relative stabilities of any intermediates, but you do not need to give the full mechanism using curly arrows.



Electrophilic addition of H^+ to the double bond gives 2 possible carbocations.

The more stable carbocation leads to the major products **L and **M**, which are formed in equal amounts as attack by Br^- ion on the planar carbocation is equally likely from either top or bottom.**

The minor product, **N, comes from the less stable carbocation.**

THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY.