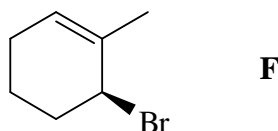


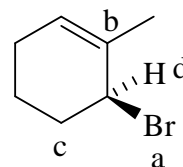
Marks
8

- Consider compound **F** shown below.



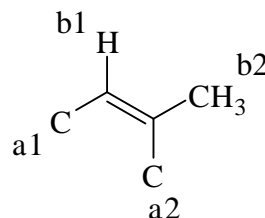
Assign the stereocentre in compound **F** as (*R*) or (*S*), explaining your reasoning.

(*S*) The four groups at the stereogenic centre are assigned priorities based on atomic numbers. Br has highest priority, H the lowest. The carbon labelled b, C(C,C,C) has higher priority than the carbon labelled c C(C,H,H) by examining the atoms attached to them. With d at the back, a→b→c is anticlockwise, so the configuration is (*S*).

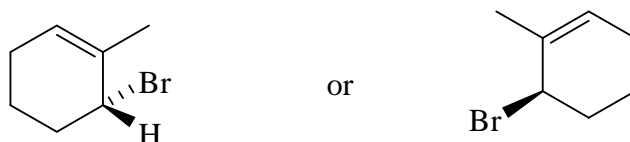


Assign the double bond stereochemistry in compound **F**, explaining your reasoning.

(*Z*) Compare the priorities of the two groups at each end of the double bond: i.e. a1 with b1 and a2 with b2. The two low priority groups (b) are on the same side of the double bond, so the configuration is (*Z*).



Draw the enantiomer of compound **F**.



When compound **F** is reacted with hydrogen gas in the presence of a palladium catalyst, two stereoisomeric products, **G** and **H**, are formed. Draw these products.



What word is used to describe the stereochemical relationship between **G** and **H**?

They are *diastereomers*. They differ in the arrangement of the bonds in space but are not mirror images.