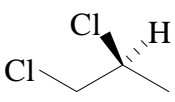
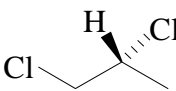
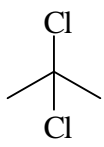
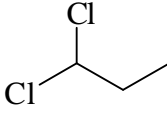
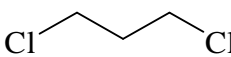


Marks
5

- 1,2-Dichloropropane can exist in two enantiomeric forms, compounds I and II. In the boxes below draw structures of the two enantiomers of 1,2-dichloropropane clearly showing the stereochemistry at the chiral carbon.

<p>compound I</p>  <p>(S)-enantiomer</p>	<p>compound II</p>  <p>(R)-enantiomer</p>
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There are three other compounds, III, IV and V with molecular formula $C_3H_6Cl_2$. In the boxes below, give the constitutional formulas and names of these compounds.

Structure	Name
<p>compound III</p> 	<p>2,2-dichloropropane</p>
<p>compound IV</p> 	<p>1,1-dichloropropane</p>
<p>compound V</p> 	<p>1,3-dichloropropane</p>

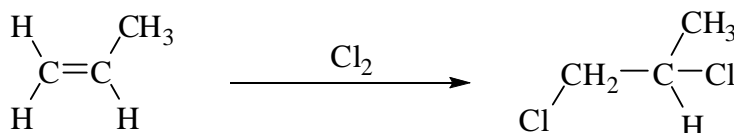
ANSWER CONTINUES ON THE NEXT PAGE

Compounds I, II, III, IV and V are isomers. From the list *enantiomers*, *diastereomers*, *conformers*, *constitutional isomers* complete the following table.

Marks
4

PAIR OF COMPOUNDS	ISOMERIC RELATIONSHIP BETWEEN PAIR OF COMPOUNDS
I and III	constitutional isomers
I and IV	constitutional isomers
II and IV	constitutional isomers

1,2-Dichloropropane can be synthesised in the laboratory by treatment of propene with chlorine as is shown in the following equation.



Which of the following best describes the product: (*R*)-enantiomer, (*S*)-enantiomer, racemate?

racemate
(equal amounts of (*R*) and (*S*) will be formed)