	Marks
• Show clearly the reagents you would use to carry out the following chemical conversion. More than one step is required. Give the structure of any intermediate compounds formed.	**3**

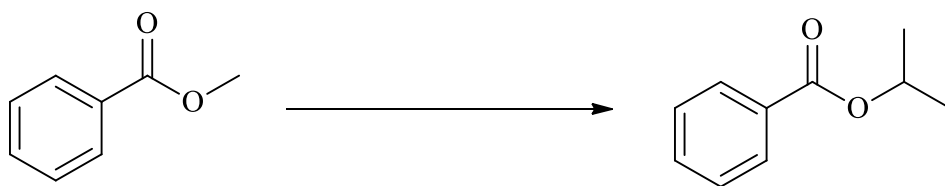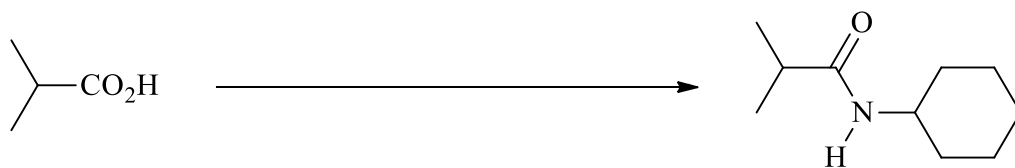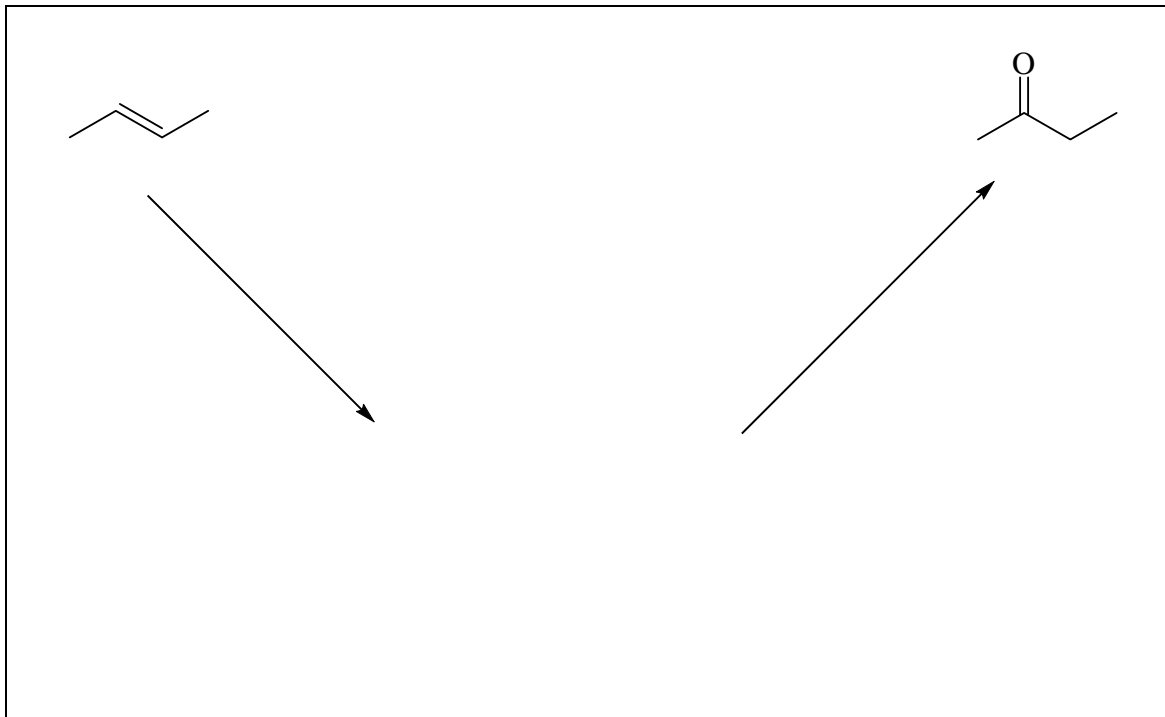|	Marks
• Show clearly the reagents you would use to carry out the following chemical conversion. More than one step is required. Give the structure of any intermediate compounds formed.	**3**

Marks
3

- Show clearly the reagents you would use to carry out the following chemical conversion. More than one step is required. Give the structure of any intermediate compounds formed. You have a supply of cyclohexylamine available.

Marks
8

- Show clearly the reagents you would use to carry out the following chemical conversion. Two steps are required. Give the structure of the intermediate compound.

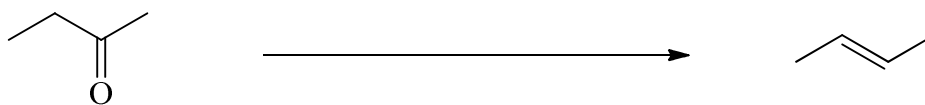How can IR spectroscopy distinguish between the starting material, the intermediate and the product?

How can ^{13}C NMR spectroscopy distinguish between the starting material and the product?

Page Total:

**Marks
8**

- Show clearly the reagents you would use to carry out the following chemical conversion. Two steps are required. Give the structure of the intermediate compound.

How can IR spectroscopy distinguish between the starting material, the intermediate and the product?

How can ^{13}C NMR spectroscopy distinguish between the starting material, the intermediate and the product?

Marks
5

- Show clearly the reagents you would use to carry out the following chemical conversion. Two steps are required. Give the structure of the intermediate compound.
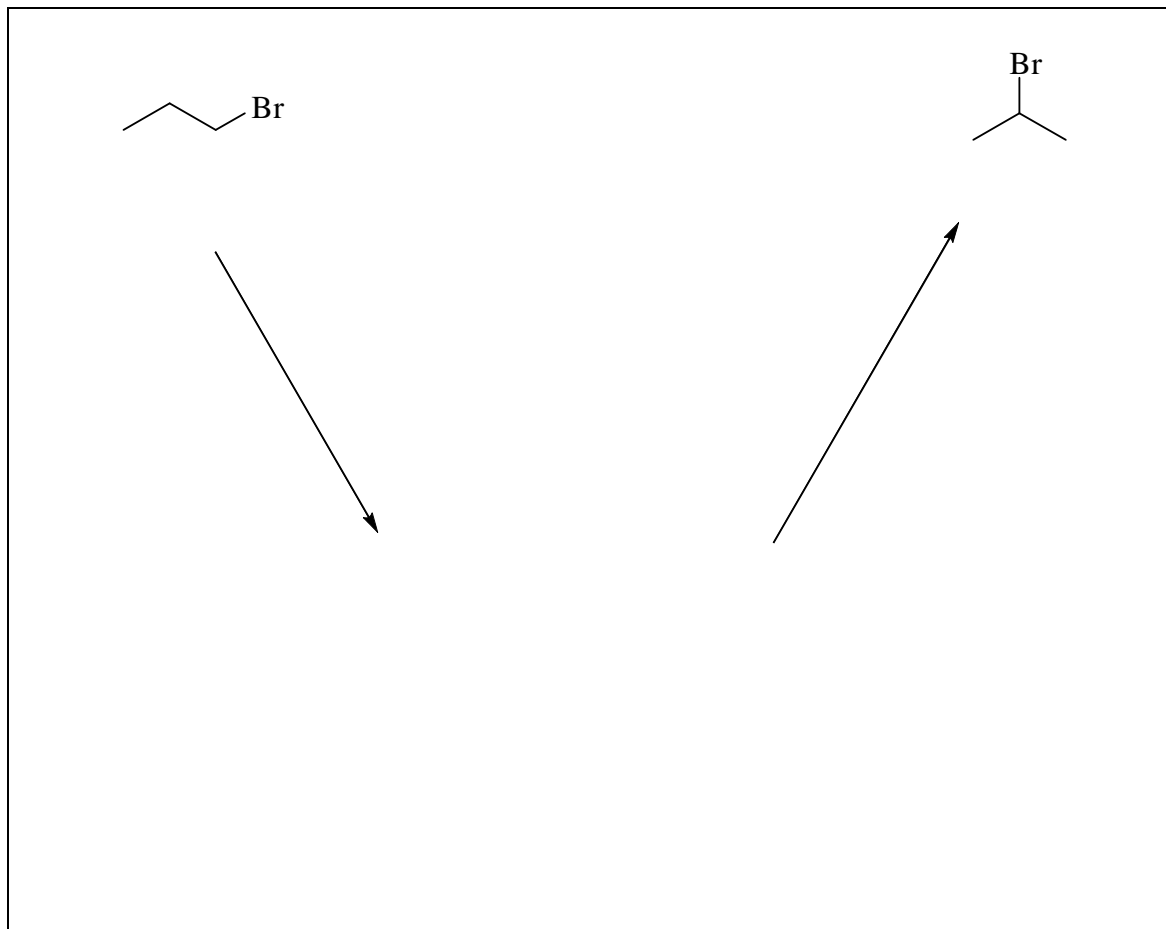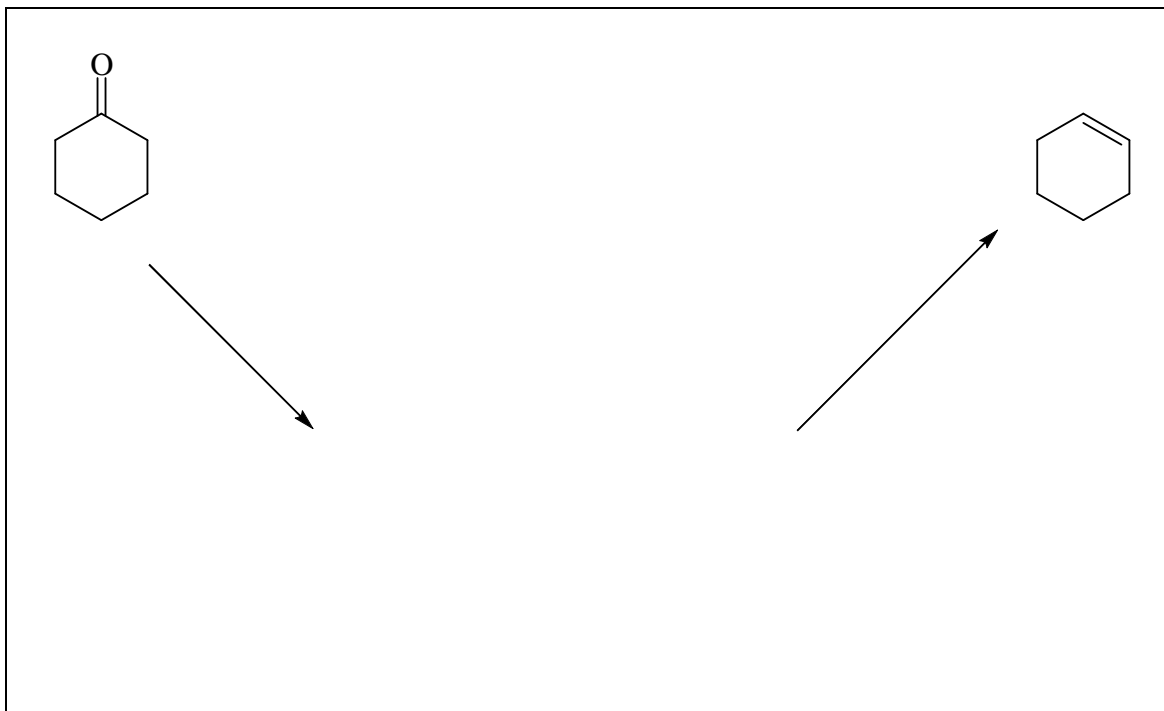
How could you distinguish between the starting material and the product by ^{13}C NMR spectroscopy?

Marks
6

- Show clearly the reagents you would use to carry out the following chemical conversion. Exactly one intermediate compound and hence two steps are required. Give the constitutional formula of the intermediate compound.

How could you distinguish between the starting material, the intermediate compound and the final product using infrared spectroscopy?

**Marks
2**

• Draw the repeating unit of the polymer formed in the following reactions.