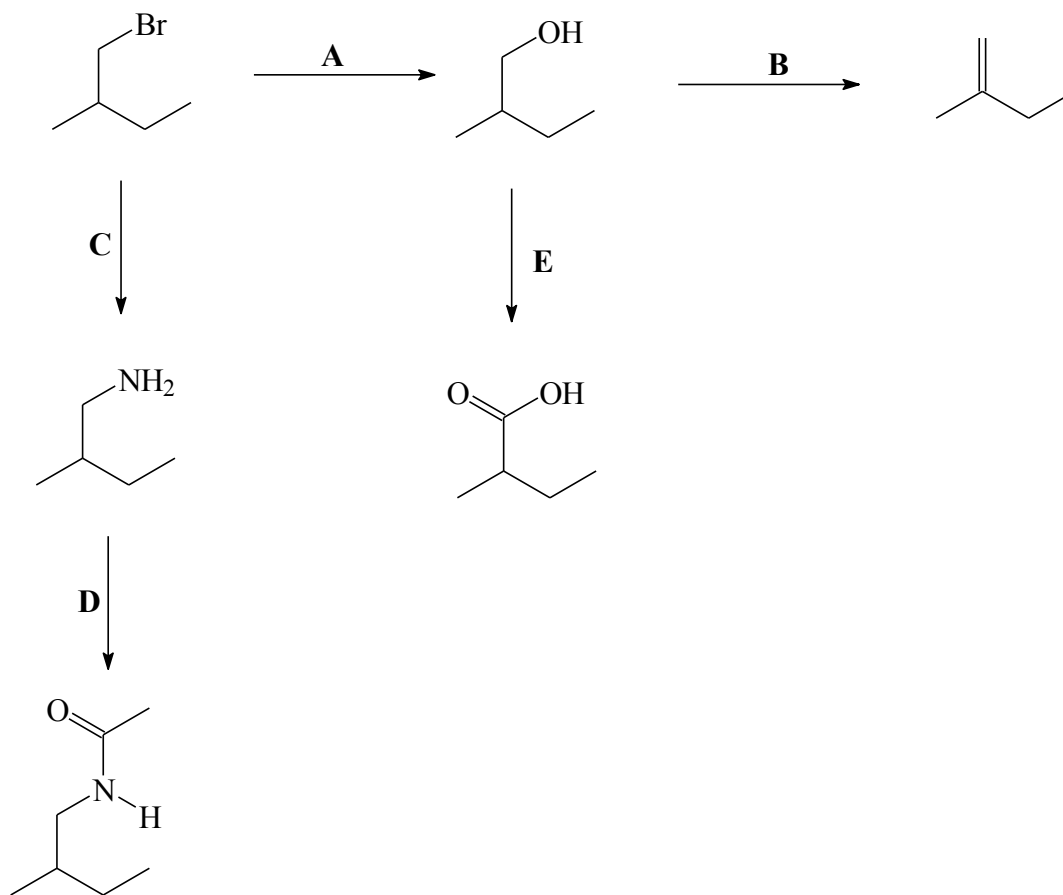


Marks
5

- Consider the following reaction sequences.



List the reagents A - E.

A	NaOH
B	hot, concentrated H ₂ SO ₄
C	NaNH ₂
D	CH ₃ COCl or (CH ₃ CO) ₂ O
E	Cr ₂ O ₇ ²⁻ / H ⁺

- Compare the acidity of a phenol to that of a carboxylic acid.

2

Phenols are less acidic than carboxylic acids. Phenols react with aqueous hydroxide solution to form the phenoxide ion; carboxylic acids react with either aqueous hydroxide or aqueous hydrogen carbonate to form the carboxylate ion.

The difference in stability arises from the relative stability of the conjugate base: there is delocalisation of the charge in the carboxylate ion over two electronegative oxygen atoms. The resonance stabilisation of the charge in the phenoxide ion is over the much less electronegative carbon atoms of the ring.