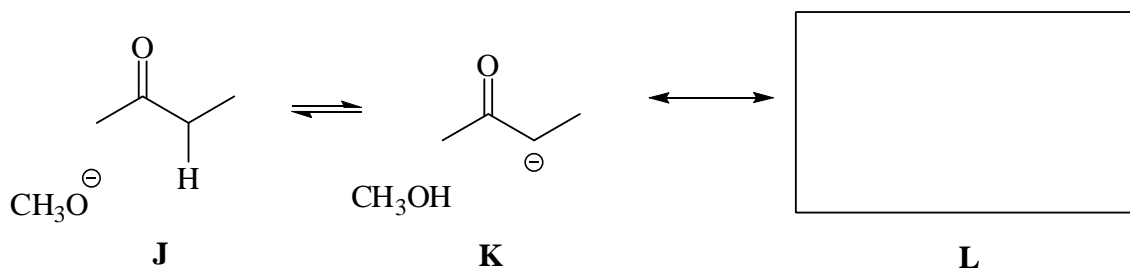


Marks
6

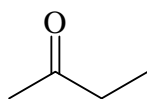
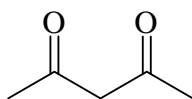
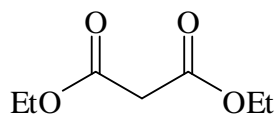
- Protons next to a carbonyl group can be removed by alkoxide bases as shown below.



Apply your understanding of resonance to propose a structure **L** that explains how the carbonyl group increases the acidity of these hydrogens.

Add curly arrows to the reaction scheme above to complete a mechanism for the deprotonation of **J** to give **K**, and the stabilisation of **K** by resonance.

The $\text{p}K_a$ values of compounds **J**, **M** and **N** are 9, 13 and 19, but not in that order. Match each compound with the correct $\text{p}K_a$, and explain your answer.

**J****M****N**
 $\text{p}K_a$ values:
J =**M** =**N** =

Reasoning for above assignments