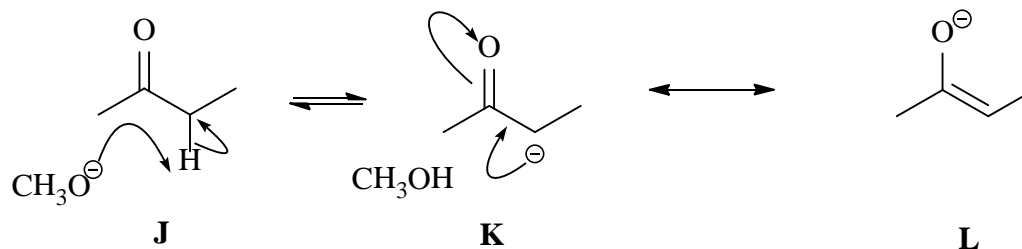


Marks
6

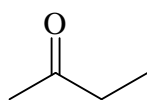
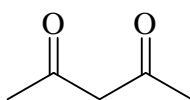
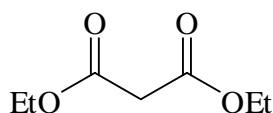
- Protons next to a carbonyl group can be removed by alkoxide bases as shown below.



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 pK_a values of compounds **J**, **M** and **N** are 9, 13 and 19, but not in that order. Match each compound with the correct pK_a , and explain your answer.

**J****M****N**

pK_a values:

| | | |
|------------|------------|------------|
| J = | M = | N = |
|------------|------------|------------|