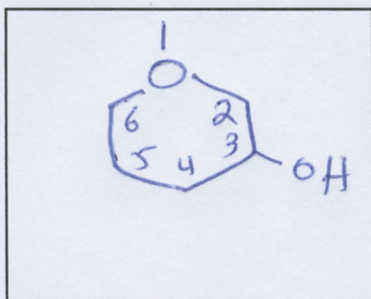
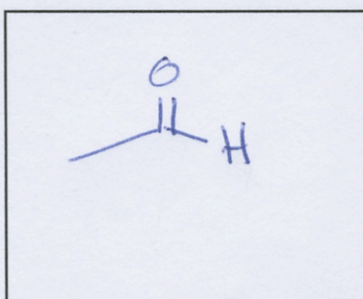


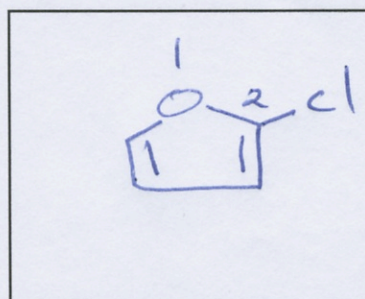
1. (12 Points, 2 points each) Give the structure for the following compounds:



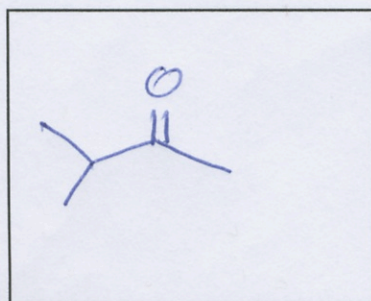
3-Hydroxytetrahydropyran



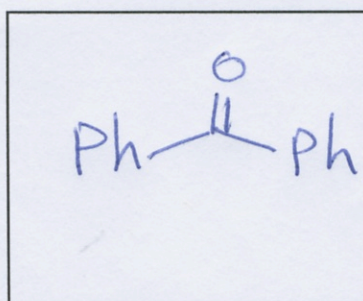
Acetaldehyde



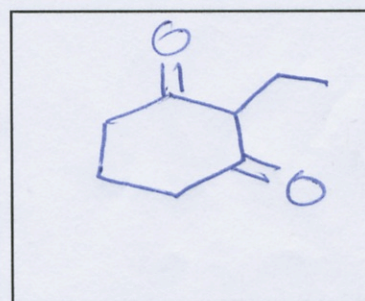
2-Chlorofuran



Isopropyl methyl ketone

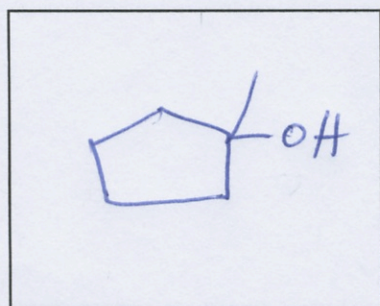


Diphenyl ketone



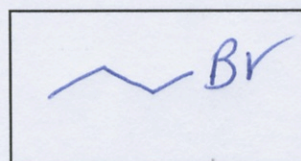
2-ethyl-3-oxocyclohexanone

2. (6 Points, 3 points each box) Complete the following Williamson ether synthesis.

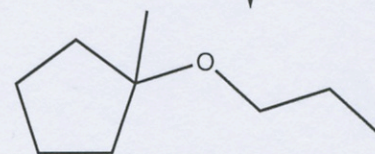


An alcohol

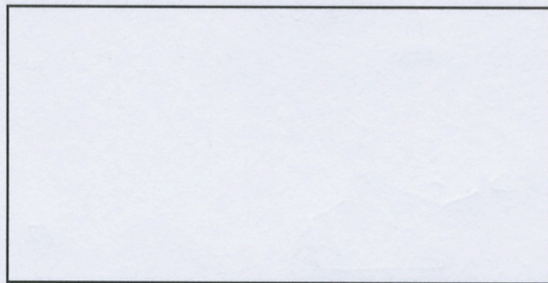
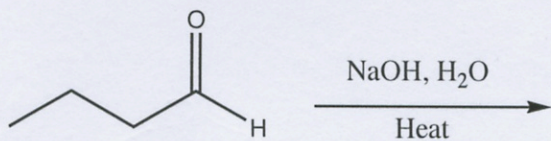
NaH → Alkoxide ion



An alkyl halide



3. (7 Points) Provide a stepwise mechanism for the following Aldol condensation reaction.



Mechanism (5 Points):

