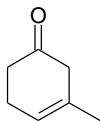
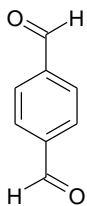
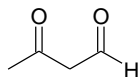
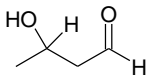


CHM 2211 – Ch 19 Homework

1. Provide systematic names for the following. (2 pts)



2. Show how to create ethanal (acetaldehyde) by reduction of an ester and by oxidation of an alcohol. (1 pt)

3. Show reactions with mechanisms for a hydride and a Grignard reagent, along with either an aldehyde or ketone, to produce a) 1-pentanol and b) 1-phenylcyclohexanol. Include all lone pairs and curved arrows in your mechanisms. (2 pts)
4. The product of the reaction between 2-butanone and HCN has a chiral center. Show the reaction mechanism with 3D details, and include all product stereoisomers. Include all lone pairs and curved arrows in your mechanisms. Explain if the products show optical rotation. Refer to Fig. 19.1 and sections 9.8 & 9.13. (2 pts)

5. Show the nucleophilic-addition reactions with mechanisms for cyclohexanone with a) $\text{CH}_3\text{CH}_2\text{NH}_2$ (ethylamine) and b) $(\text{CH}_3\text{CH}_2)_2\text{NH}$ (diethylamine). Include all lone pairs and curved arrows in your mechanisms. Provide names for the types of intermediates and products as well. (2 pts)

6. Show the mechanism of conjugated Nu addition to methylamine (CH_3NH_2) with cyclohex-1-enecarbaldehyde (below). The reaction follows the diagram in the class notes, with an H^+ moving from the N to the alpha C in the last step. Include all lone pairs and curved arrows in your mechanisms. (1 pt)

