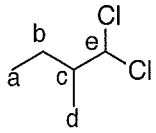
Quiz 1, Key, Chem 2542, F2012

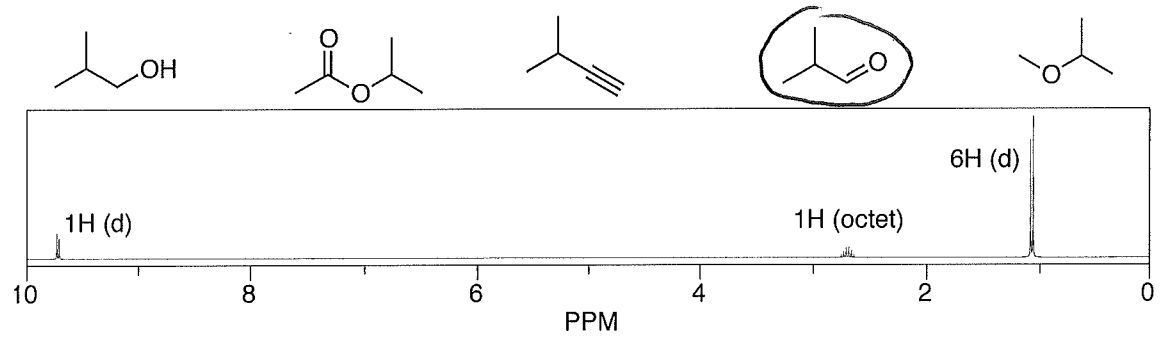
1. (4) Which of the following compounds will have the *characteristic* **IR** peak at about 1720 cm^{-1} and four signals in the **^{1}H NMR** spectrum?

2. (5) Into how many **peaks** would you expect the ^{1}H NMR **signals** of the indicated protons **a**-**e** to be **split**? (put number of peaks corresponding to the signals of **Ha**-**He** in each box; 1 pt each)

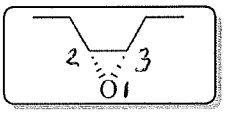


Ha	Hb	Hc	Hd	He
3	5	7	2	2

3. (4) **Circle** the molecule that is in agreement with the following ^{1}H NMR spectrum:

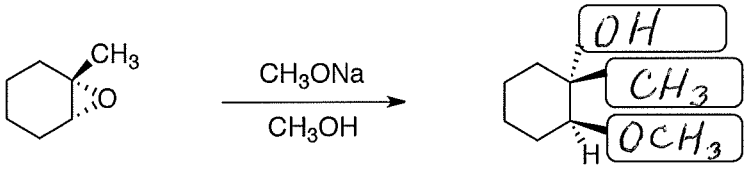


4. (3) Circle the correct **IUPAC** name for compound in the box:

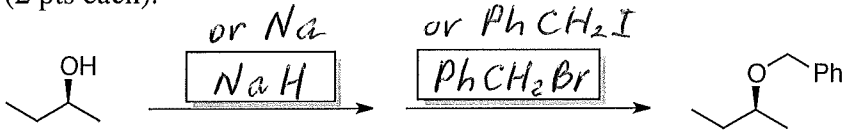


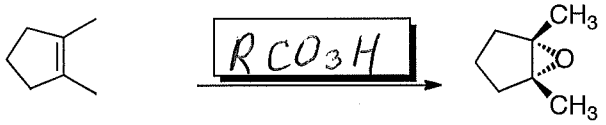
cis-2,3-diethyloxirane *trans*-2,3-diethyloxirane *trans*-3,4-diethyloxirane
cis-3,4-diethyloxirane *trans*-3,4-epoxyhexene *cis*-2,3-epoxyhexene

5. (3) Finish drawing the structure of the **product** in the following reaction by placing appropriate substituents in the boxes (1 pt each substituent):



6. (6) Place in each box the molecule of a reagent that is required to perform each of the following reactions (2 pts each):





Overall Score: 25