# Chemistry 2542

# Fall 2012

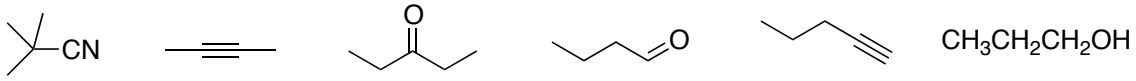
# Quiz 1

(25 points)

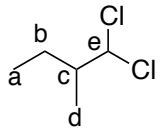
Printed Name (***Last***, First) _____

Good Luck!

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

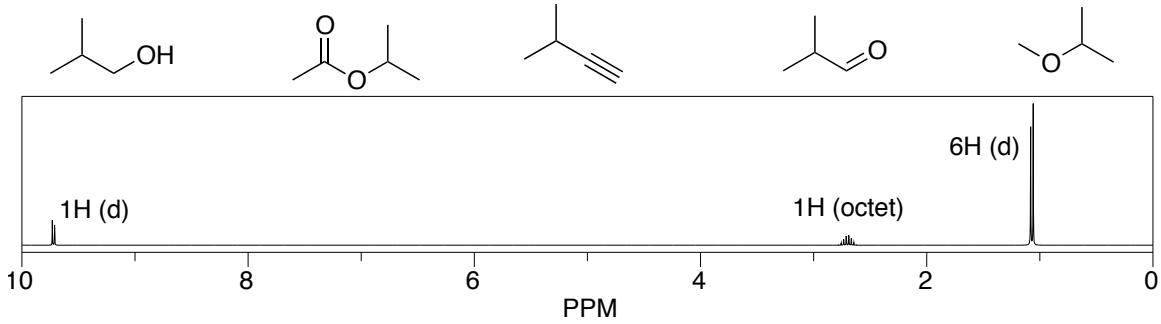



**2**. (5) Into how many **peaks** would you expect the $^1$H NMR **signals** of the indicated protons **a**-**e** to be **split**? (put number of peaks corresponding to the signals of **Ha**-**He** in each box; 1 pt each)

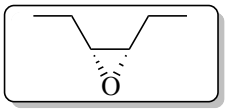



Ha ☐ Hb ☐ Hc ☐ Hd ☐ He ☐

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

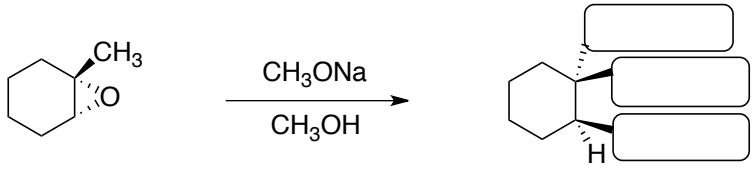



**4.** (3) Circle the correct **IUPAC** name for compound in the box:

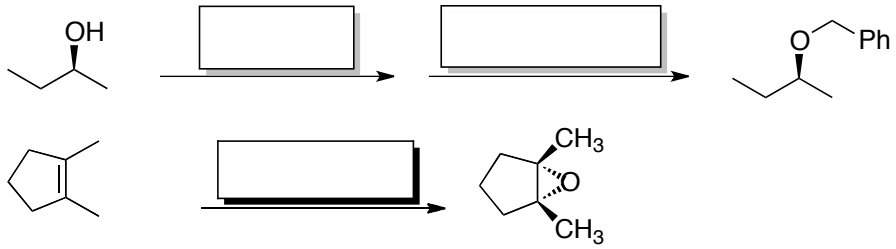



*cis*-2,3-diethyloxirane *trans*-2,3-diethyloxirane *trans*-3,4-diethyloxirane
*cis*-3,4-diethyloxirane *trans*-3,4-epoxyhexene *cis*-2,3-epoxyhexene

**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):

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Overall Score: _____