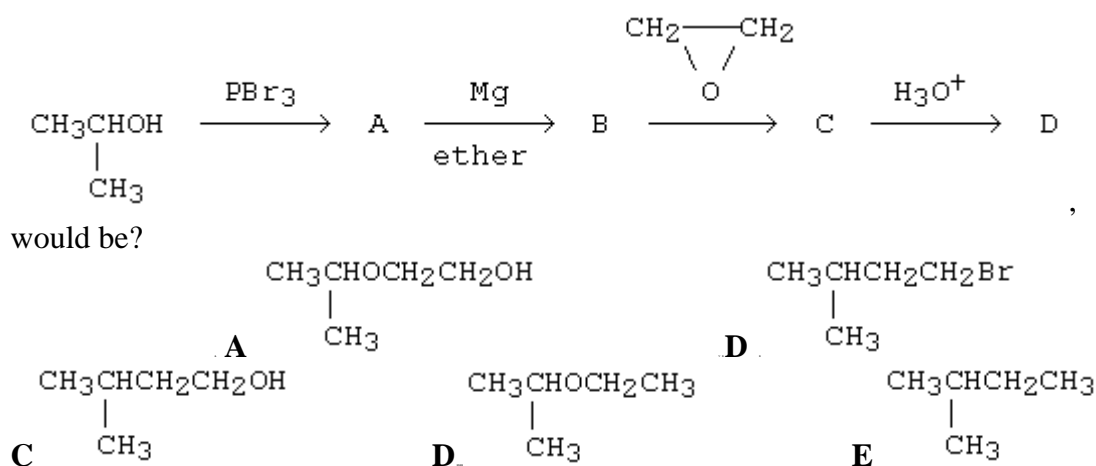


Homework/Problem Set #12
Chapter 12. Alcohols & Organometallic

1. Which of the reagents listed below would serve as the basis for a simple chemical test to distinguish between $\text{CH}_3\text{CH}=\text{CHCH}_2\text{OH}$ and $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$?

- A) CrO_3 in H_2SO_4
- B) Cold conc. H_2SO_4
- C) Br_2 in CCl_4
- D) $\text{NaOH}/\text{H}_2\text{O}$
- E) NaBH_4

2. The final product, D, in the following reaction sequence,



3. Which of the following synthetic procedures would be employed most effectively to transform ethanol into ethyl propyl ether?

- A) Ethanol + HBr , then Mg/ether , then H_3O^+ , then NaH , then $\text{CH}_3\text{CH}_2\text{Br}$
- B) Ethanol + HBr , then Mg/ether , then HCHO , then H_3O^+ , then NaH , then $\text{CH}_3\text{CH}_2\text{Br}$
- C) Ethanol + $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ + $\text{H}_2\text{SO}_4/140^\circ\text{C}$
- D) Ethanol + NaH , then HCHO , then H_3O^+ , then HBr , then Mg/ether , then $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$
- E) Ethanol + $\text{H}_2\text{SO}_4/180^\circ\text{C}$, then $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$

4. Show how a Grignard reagent can be used in the following synthesis. Name the product **A**.

