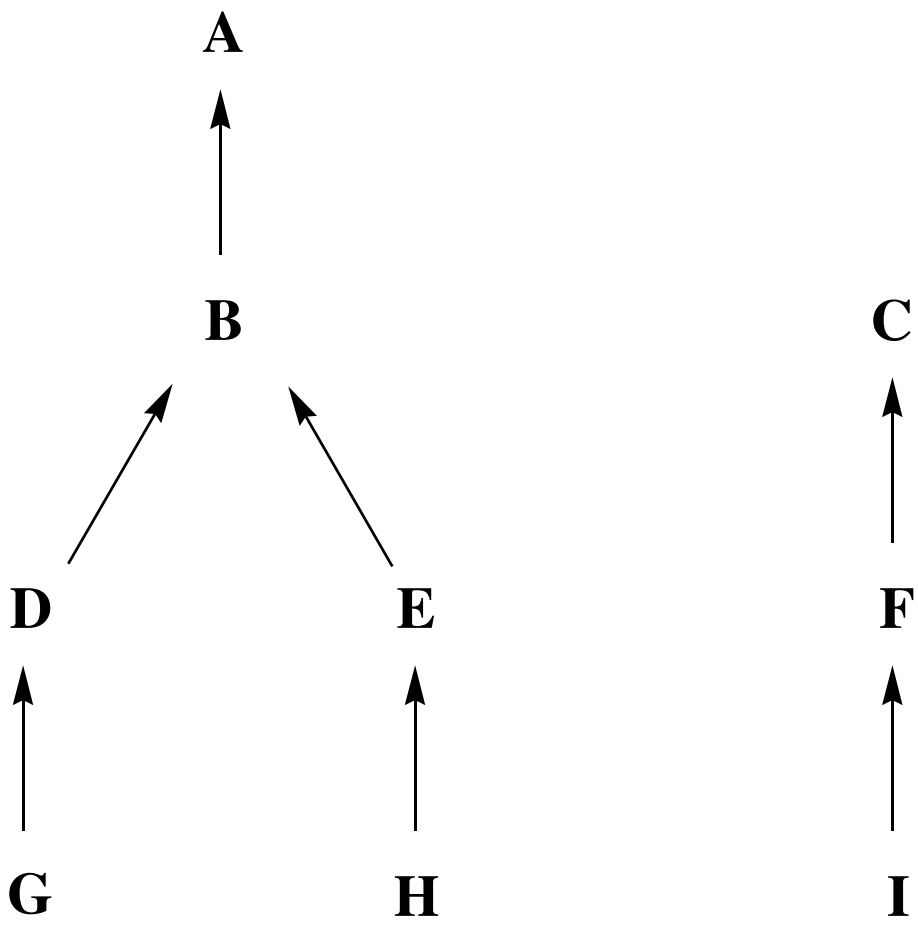
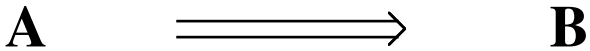
Chemistry 334

Organic Synthesis

1. retrosynthetic analysis

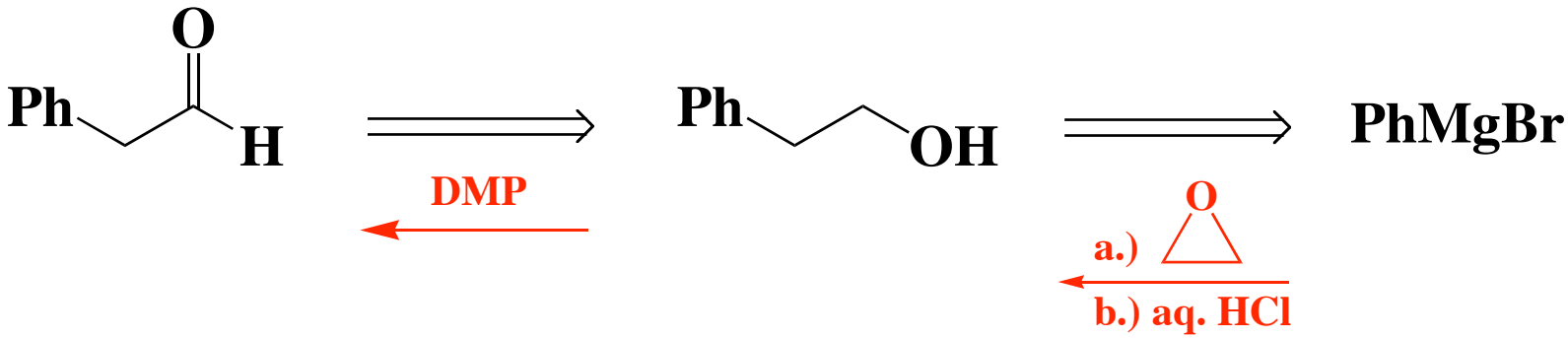


retrosynthetic direction:



synthetic direction:

an example:



2. efficiency

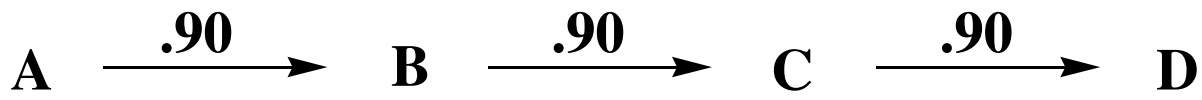
avoid product mixtures

obtain highest yields

use fewest number of steps

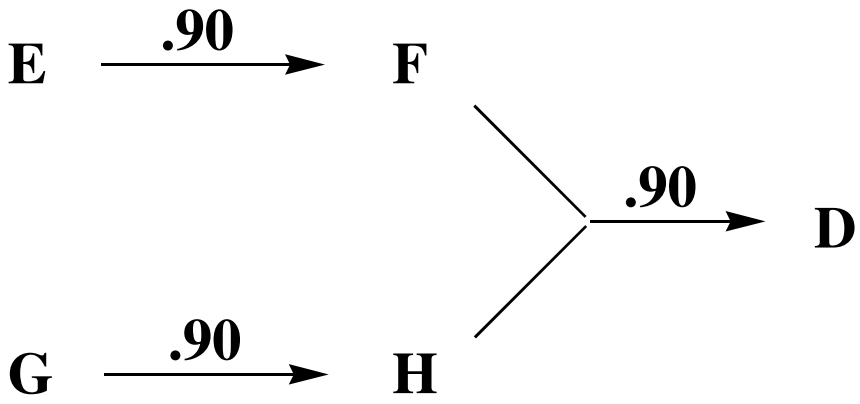
use convergent syntheses

linear:



overall yield: (.90)(.90)(.90) = .73

convergent:



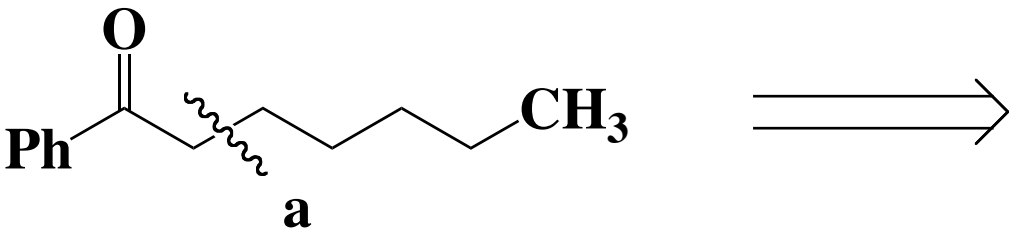
overall yield: (.90)(.90) = .81

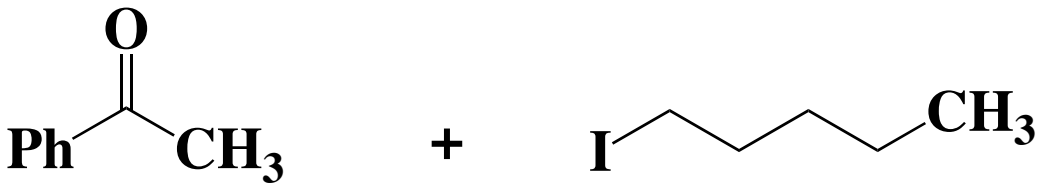
3. carbon framework

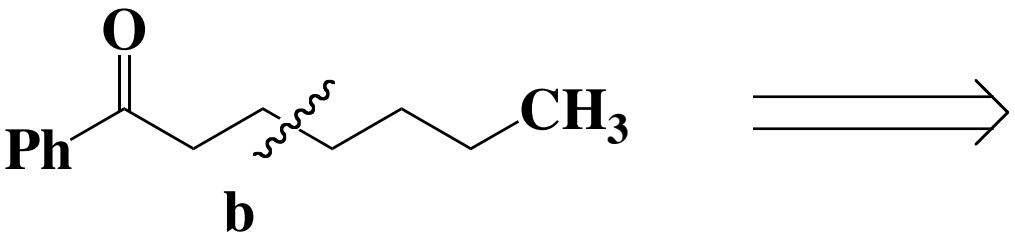
Construction of the C - C framework often

is one of the most difficult tasks.

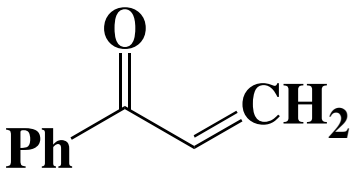
4. nearby functional groups



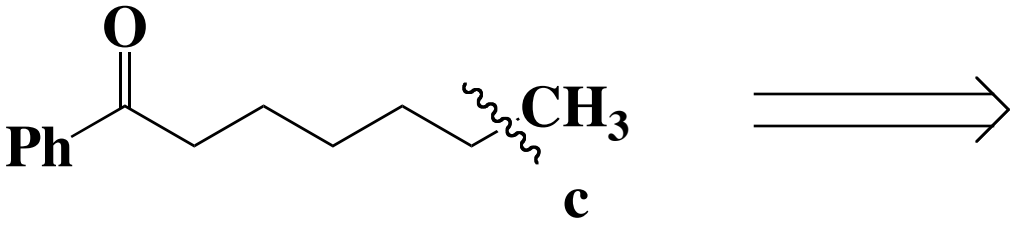




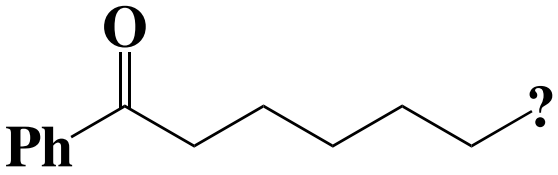
b



+ $(^{n}Bu)_2CuLi$



c



+ ICH_3

5. oxidation levels

6. stereochemistry

7. regiochemistry

8. functional group compatibility