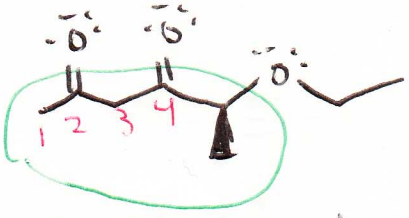
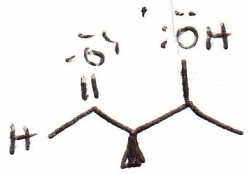
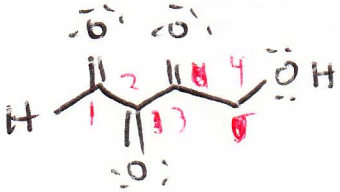


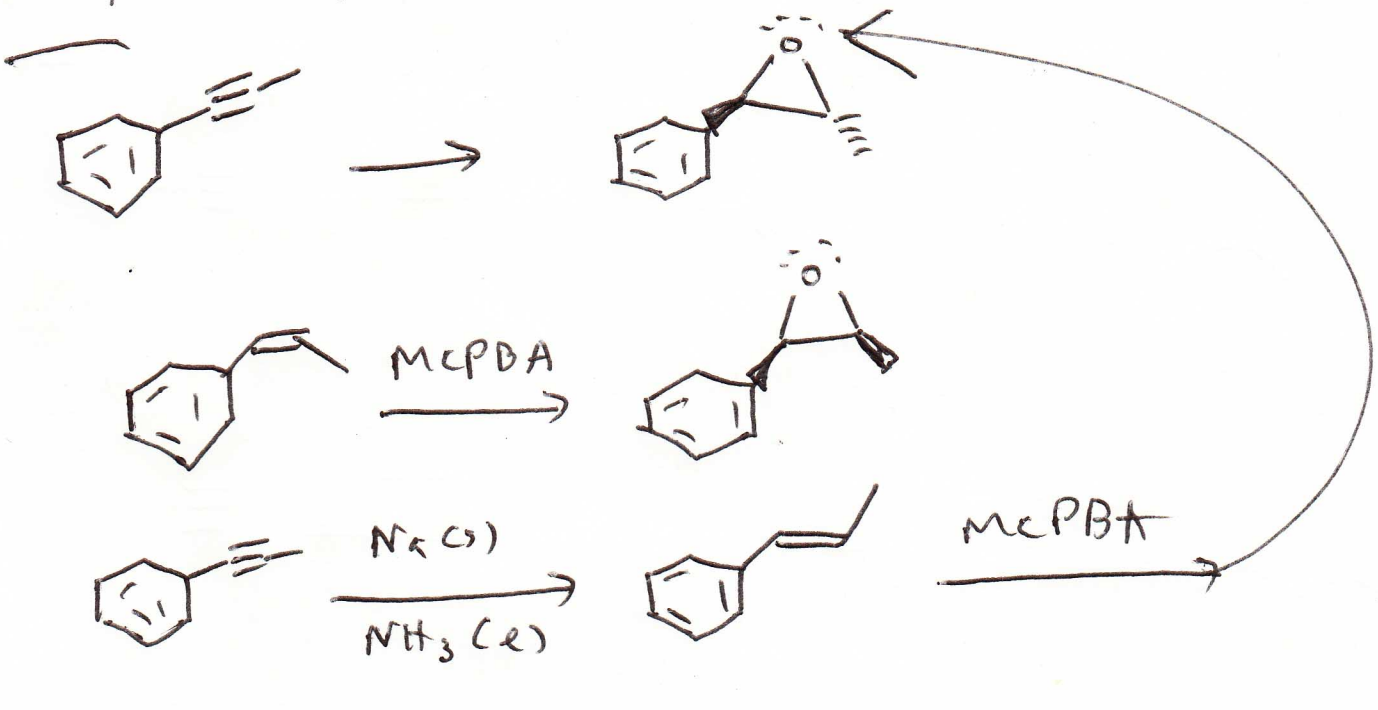
(S)-5-ethoxyhexane-2,4-dione



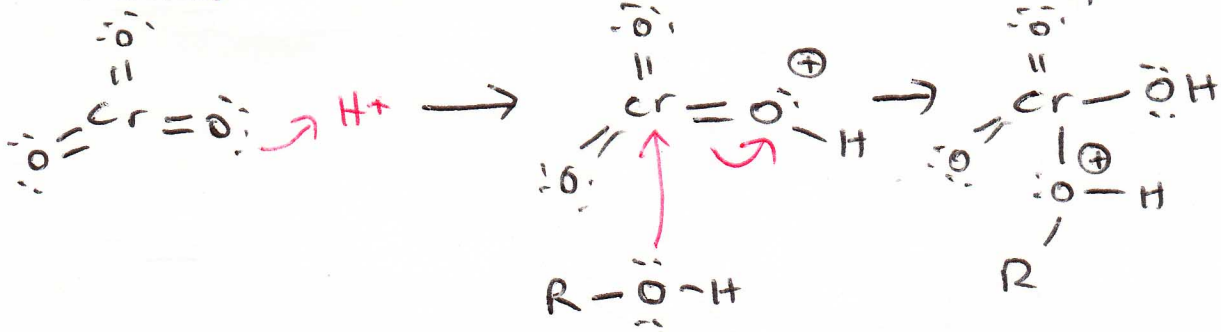
(R)-3-hydroxy-2-methyl-butanal



4-hydroxy-2,3-dioxobutanal



Jones Reagent — CrO_3, H_2O, H_2SO_4



Exam #1

- alcohol → chloride, bromide, iodide, sulfonate
- dehydration of alcohols
- oxidation - selective [O] of 1° alcohols
  - overoxidation of 1° alcohols (POAD)
- williamson ether systhesis (alkoxide formation)
- reduction of aldehydes + ketones ($LiAlH_4$ vs $NaBH_4$)
- epoxides - formation and opening
- pinacol rearrangement
- reactivity of aldehydes vs ketones
  - formal charge vs oxidation state

Problems

Nomenclature
Fill-in-the-blank
Mechanism
Synthesis
theory

End of Exam 1

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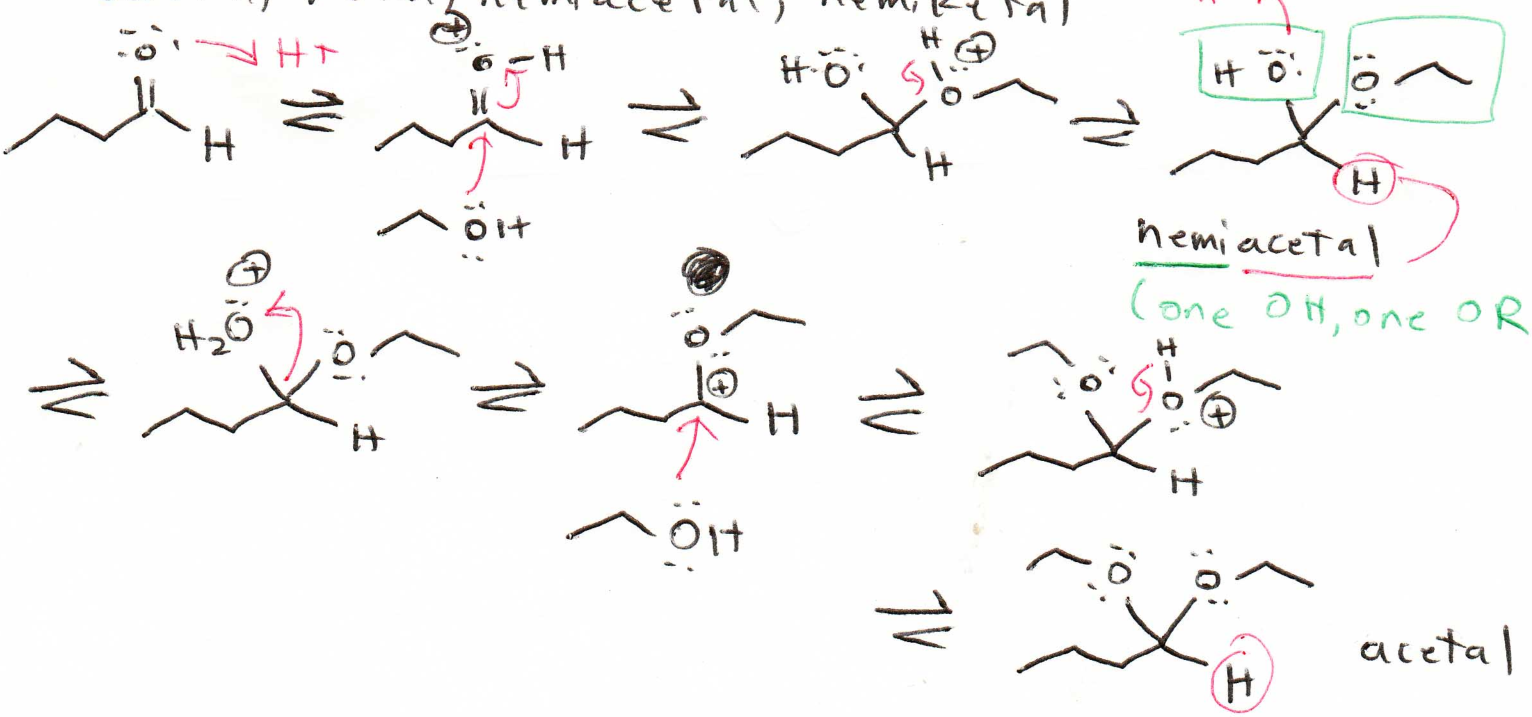
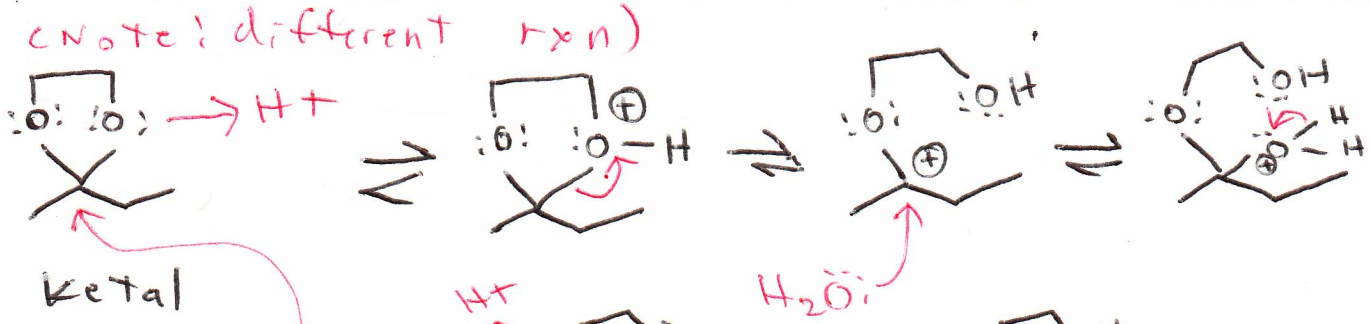
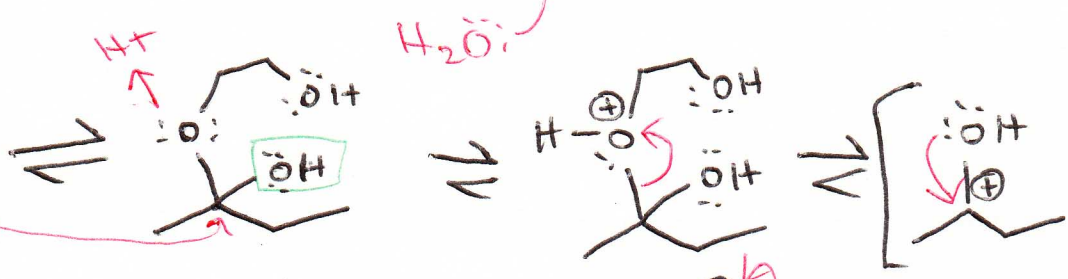
acetal, ketal, hemiacetal, hemiketal



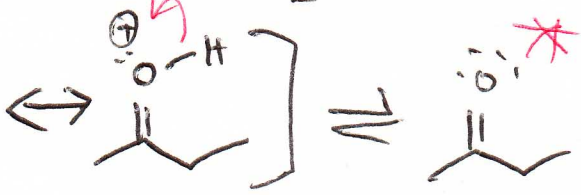
(note: different rxn)



ketal
(double OR)
(no H on C)



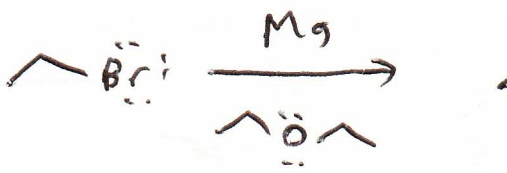
hemiketal
(one OH, one OR)



* Although the same conditions that convert a ketal to a ketone will also convert the ketone to a hydrate, most hydrates are not thermodynam. favorable and will therefore not be isolatable.

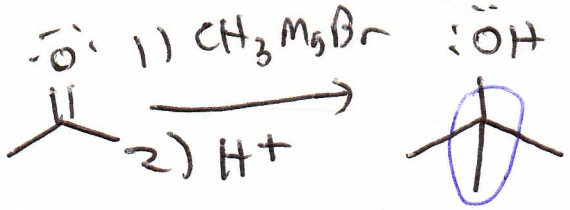
ethane-1,2-diol
ethylene glycol

Grignard (grin-yard)



organometallic reagent

furan — tetrahydrofuran THF



new C-C bond!!