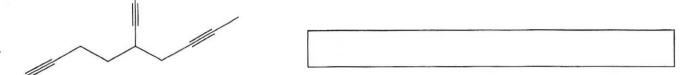
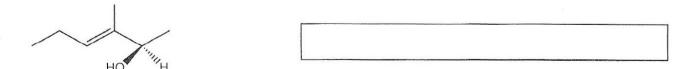
Exam 3A, Fall

A. Nomenclature: (16 points)
Give an acceptable IUPAC name for each of the following compounds. Be sure to include the stereochemistry when indicated and appropriate.

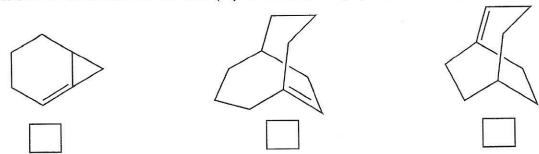


2.

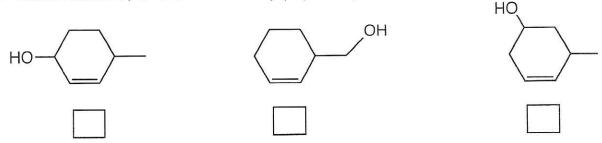




1. Label the alkenes as stable (S) or unstable (U). (6 points)

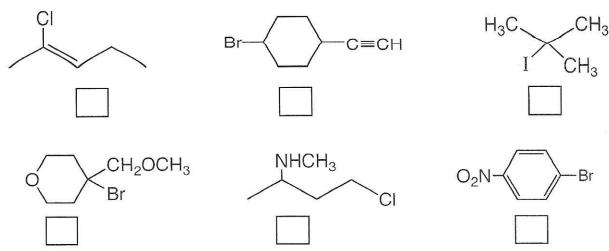


2. Place the alcohols in order of increasing reactivity in an acid catalyzed dehydration. (1=least reactive, 3=most reactive) (6 points)



3. Place the indicated bonds in order of increasing bond strength. (1=weakest, 3=strongest) (6 points)

4. Place a "Y" in the box below any halide that will produce a useful Grignard reagent. Place an "N" in the box below any that will not. (6 points)



C. Reactions: Total = 36 points, 6 points each

Please provide the major product in the answer box. Indicate stereochemistry if applicable. Full credit is awarded only when the product of each step in a multi-step reaction is shown below the reaction.

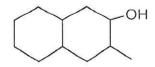
	^	\ \) (
1.		$ \downarrow $	

- 1. LiAlH₄, then H_3O^+
- 2. NaOCl



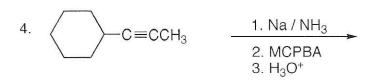
2.

- 1.NaNH₂ / 150 °C , then H₃O⁺
- 2. Sia₂BH
- 3. H₂O₂ / OH
- $4.CH_3C\equiv C: Na^+$, then H_3O^+



- 1. H₂SO₄ / Heat
- 2. KMnO₄ (warm, conc.) 3.NaBH₄ / EtOH







D. Mechanisms: (12 points)

The reaction below produces a mixture of products. Provide a clear mechanism to explain the formation of the products shown. Use curved arrows to indicate "electron flow". Remember to show only one step at a time. Show all intermediates and all formal charges. Do not show transition states.

E. Synthesis: (12 points)
Synthesize the molecule below from cyclohexanol and alcohols of **four** carbons or less, any oxidizing or reducing agents, and any other inorganic reagents. (Please do not include mechanisms.)

$$CH_2CH_2CH_3$$
 $C = CHCH_3$
 CH_3