

NAME: _____

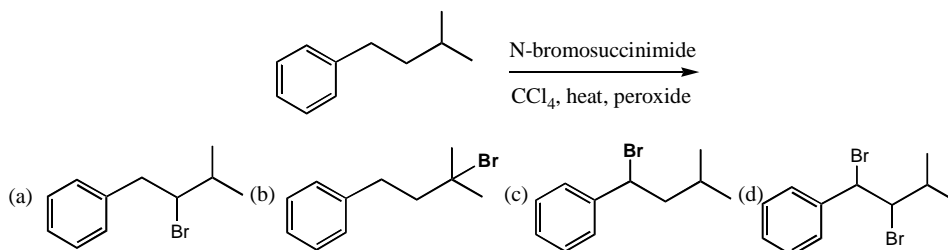
Chemistry 891G

Basic Quiz Material #3

11 October 2002

You must bring this problem set with answers written in your own hand (do not use computer software to generate pictures) to the teaching assistant. If you get 80% correct, you are finished with the assignment. If you get a lower grade, the teaching assistant will return the problem set to you with the indication that you are to try again. You must get 80% correct to move along to the next basic quiz, and you must finish *all* the basic quiz assignments at 80% correct level to get a total of 10% of the grade points for the organic section. This is an all or nothing set of assignments. You may discuss this assignment with anyone, but you must prepare the answer keys yourself, in your own hand. You are also responsible for knowing the material covered in this set of questions, and knowing it by heart.

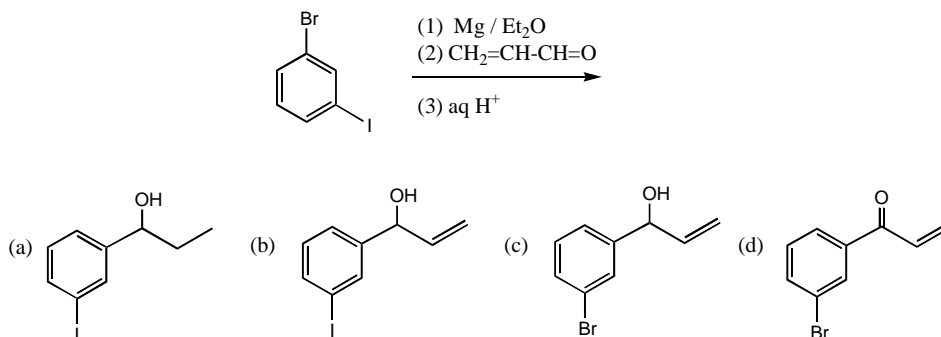
(1) Circle the major product of the reaction shown below



(2) Which compound shown below will NOT be able to give an ylid upon treatment with base?

- (a) $\text{C}_6\text{H}_5\text{CH}_2\text{PPh}_3^+\text{Br}^-$ (C_6H_5 is the phenyl group)
(b) $\text{Ph}_3\text{PCH}(\text{CH}_3)\text{C}_6\text{H}_5^+\text{Cl}^-$
(c) $\text{CH}_3\text{CH}_2\text{C}(\text{CH}_3)_2\text{PPh}_3^+\text{I}^-$ (d) $\text{CH}_2=\text{CH}-\text{CH}_2\text{PPh}_3^+\text{Br}^-$

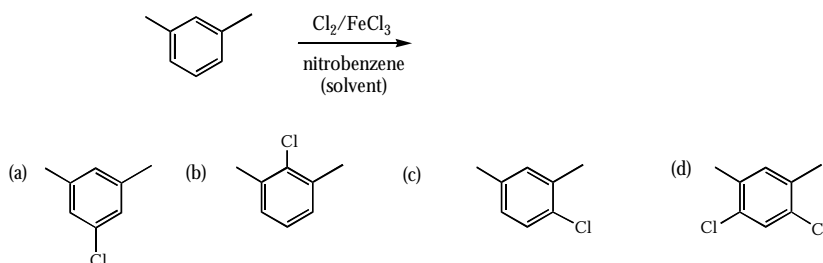
(3) Circle the major product of the reaction shown below



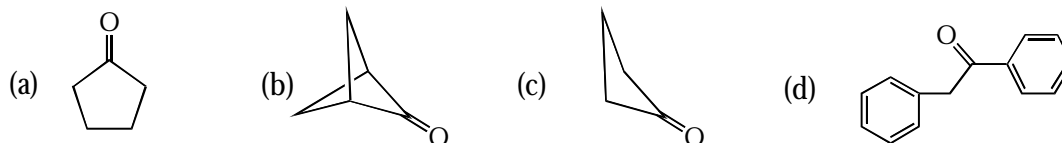
(4) Identify the compound shown below which should have the UV-visible spectrum with the lowest *energy* transitions.

- (a) 1,4-cyclohexadiene (b) 1,3-cyclohexadiene
(c) 1,3,5-hexatriene (d) 1,3,4-hexatriene

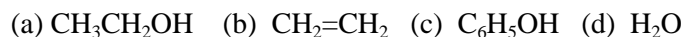
(5) Which molecule should be the major product of the reaction shown below?



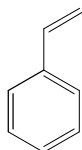
(6) Which of the molecules shown below will *not* form its corresponding enolate under typical basic conditions?



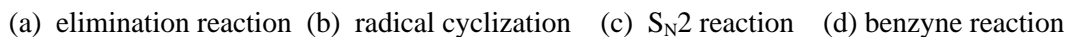
(7) Which molecule shown below is expected to affect the rate of a radical chain reaction, if added to a reacting mixture?



(8) Draw a simple scheme that shows the addition of the $\text{HO}\bullet$ radical to styrene, shown below. Be sure to show a proper use of electron pushing arrow(s), and to show the structure of the product that is formed after the addition of the radical (one step only! you do not have to describe the final isolated product).



(9) Which type of reaction mechanism would you expect always to give products with known stereochemistry?



(10) Which polymer is likely to be most swiftly degraded by oxidation in air?

