

CHE 173

Winter, 2005

Practice Quiz 4 Answer Key

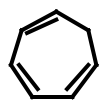
Name _____

Section: 201 202 203 204 205 206

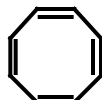
M T W Th F Th nt.

(circle one)

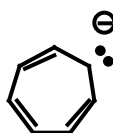
1. Identify each of the following compounds as aromatic, anti-aromatic, or not aromatic and explain your answer for each. (10 pts)



(a)



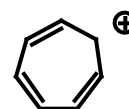
(b)



(c)



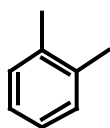
(d)



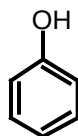
(e)

- (a) *This compound is NOT aromatic because it is not fully conjugated.*
(b) *This compound is NOT aromatic because it is not planar.*
(c) *This compound is anti-aromatic with $4n$ π electrons.*
(d) *This compound is anti-aromatic with $4n$ π electrons.*
(e) *This compound is aromatic; it's cyclic, fully conjugated, planar and has $4n + 2$ π electrons.*

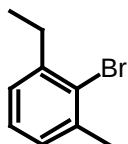
2. Give an IUPAC or common name for each of the following compounds. (10 pts)



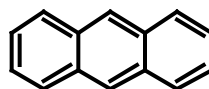
(a)



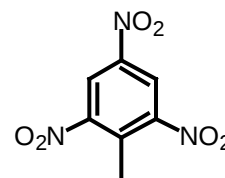
(b)



(c)



(d)

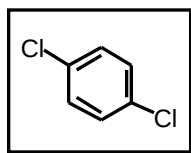


(e)

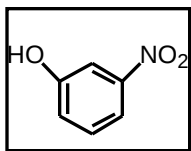
- (a) *o-xylene or 1,2-dimethylbenzene.*
(b) *phenol or benzenol.*
(c) *2-bromo-3-ethyltoluene.*
(d) *anthracene.*
(e) *2,4,6-trinitrotoluene (or TNT, dynamite!)*

3. Draw the structure for each of the compounds named below. (10 pts)

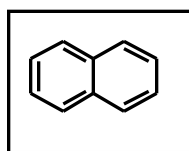
- (a) p-dichlorobenzene (c) naphthalene
 (b) m-nitrophenol (d) 4-nitrobenzoic acid (e) o-bromoanisole



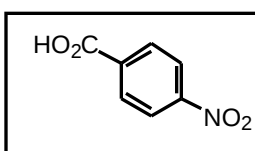
(a)



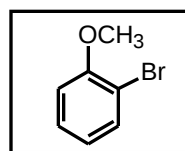
(b)



(c)

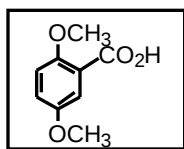
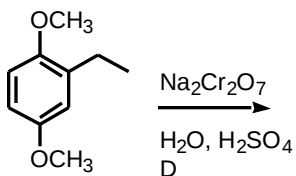


(d)

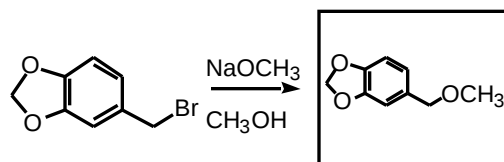


(e)

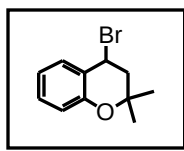
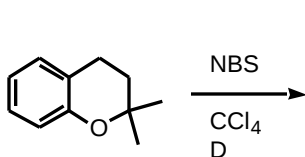
4. Show the organic product(s) that would form from the following reactions. (10 pts)



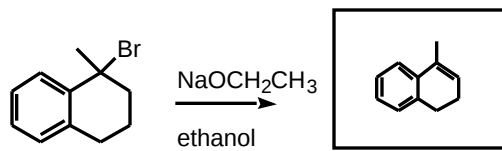
(a)



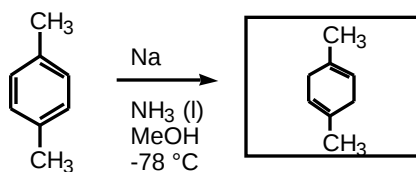
(c)



(b)

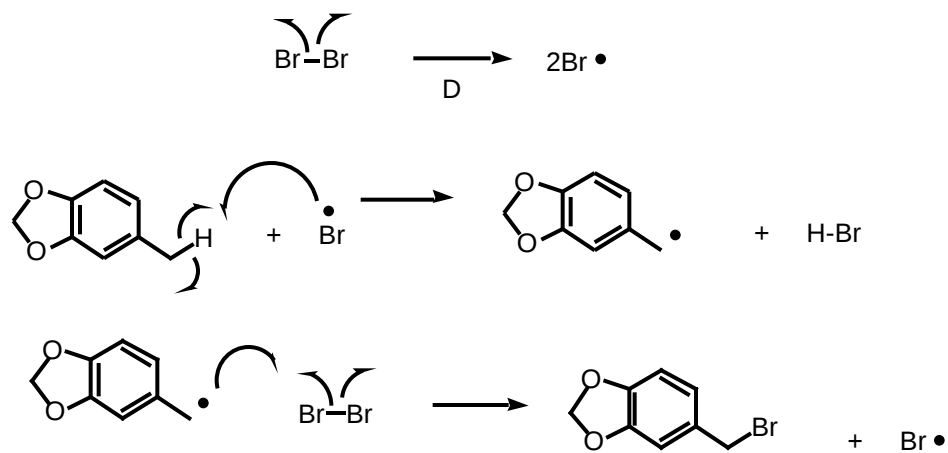


(d)



(e)

5. Show a detailed mechanism for the reaction shown below. (5 pts)



6. Show how you could you carry out the following multi-step synthesis. (5 pts)

