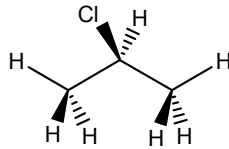
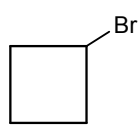


### Assessment for Chem 2320, 2006

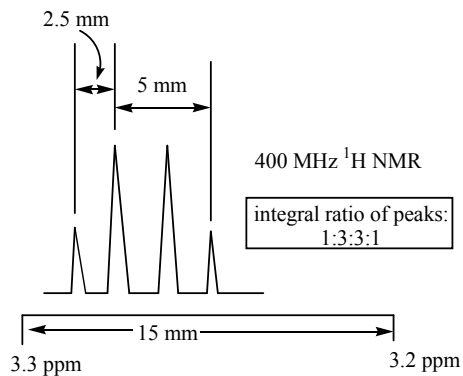
Question in final	% correct in final	Question originated	% correct in exam	Difference (%)
1	61.5	Exam 1, Q 4	70.9	- 9.4
2	70.4	Exam 1, Q 9	76.0	- 5.6
3	63.3	Exam 1, Q 19	71.4	- 8.1
4	97.0	Exam 1, Q 20	72.6	+ 24.4
5	67.5	Exam 2, Q 14	73.3	- 5.8
6	62.1	Exam 2, Q 15	53.5	+ 8.6
7	90.5	Exam 2, Q 16	72.1	+ 18.4
8	51.5	Exam 3, Q 9	51.6	- 0.1
9	42.0	Exam 3, Q 11	59.6	- 17.6
10	62.1	Exam 3, Q 15	54.0	+ 8.1

#### Questions from Exam 1.

1.  (a) 3  
(b) 4  
(c) 5  
(d) 6  
(e) None of the above
- From  $^1\text{H NMR}$

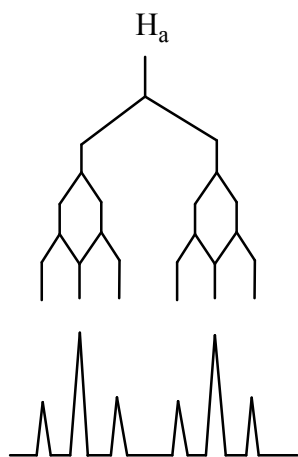
2.  (a) 4  
(b) 5  
(c) 6  
(d) 7  
(e) None of the above
- From  $^1\text{H NMR}$

3. Base on the following enlarged signal from a 400 MHz  $^1\text{H NMR}$  spectrum, what could be the coupling constant(s)



- (a) 6.7 Hz and 13.3 Hz  
(b) 6.7 Hz  
(c) 13.3 Hz  
(d) 5 Hz  
(e) None of the above

4. How will you describe the splitting pattern (diagram) of the following signal ( $H_a$ ) from  $^1H$  NMR?

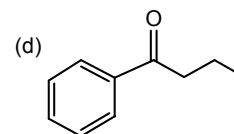
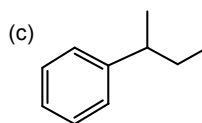
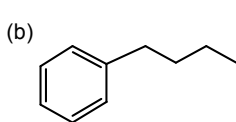
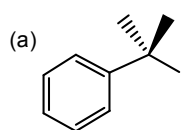
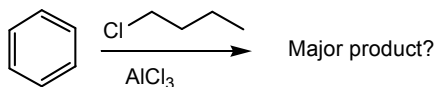


- (a) sextet
- (b) triplet of doublet (or doublet of triplet)
- (c) triplet
- (d) doublet
- (e) None of the above

integral ratio: 1 : 2 : 1 : 1 : 2 : 1

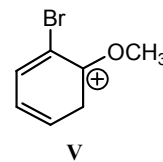
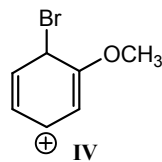
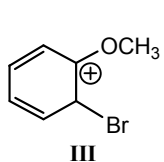
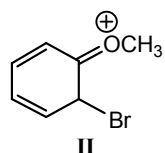
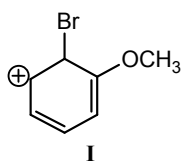
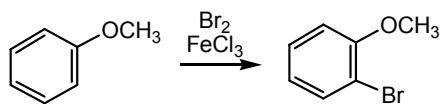
### Questions from Exam 2.

5. What should be the major product for the following reaction?



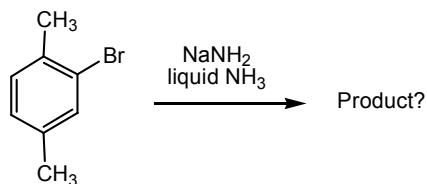
(e) None of the above

6. Which of the following is **not** the resonance structure of intermediate from the listed electrophilic aromatic substitution?



- (a) I
- (b) II
- (c) III
- (d) IV
- (e) V

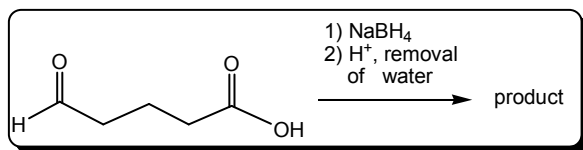
7. What could be the product for the following reaction?



- (a) (b) (c) (d) (e) None of the above

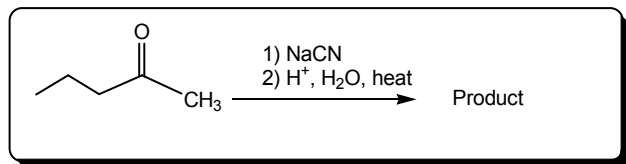
**Questions from Exam 3.**

8. What should be the product from the following reaction?



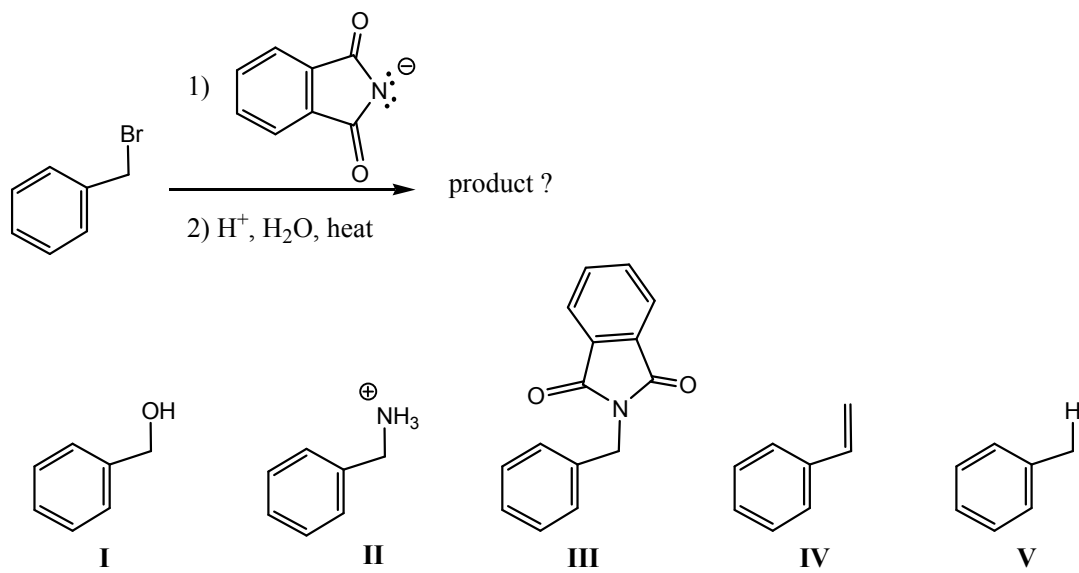
- (a) (b) (c) (d) (e) none of the above

9. What should be the product from the following reaction?



- (a) (b) (c) (d) (e) none of the above

10. What could be the product for the following reaction?



- (a) **I**
- (b) **II**
- (c) **III**
- (d) **IV**
- (e) **V**