

## First Hour Exam

Name: Answer Key

Recitation instructor's name: \_\_\_\_\_

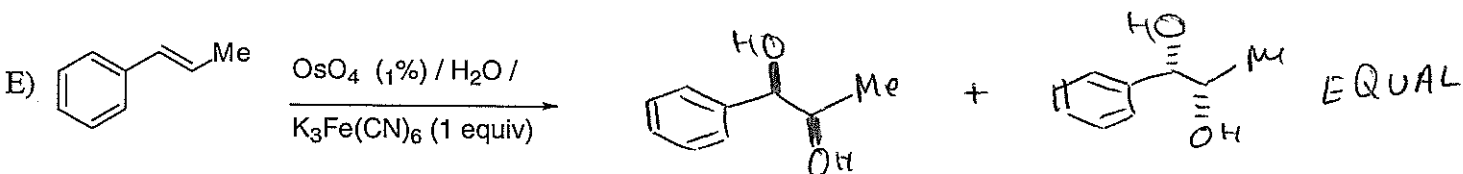
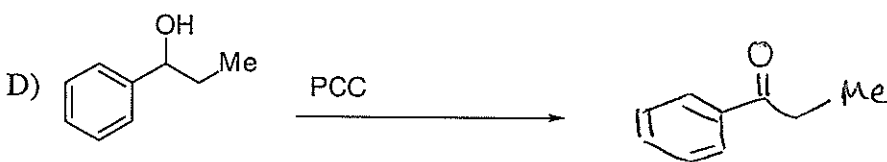
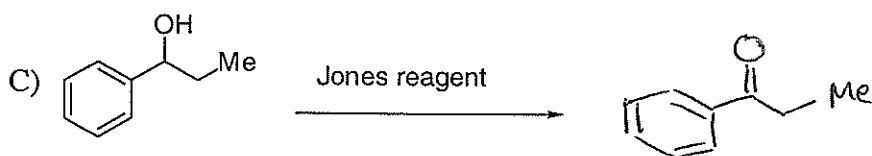
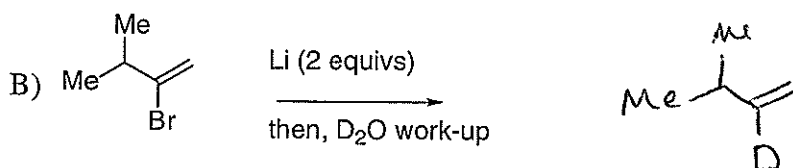
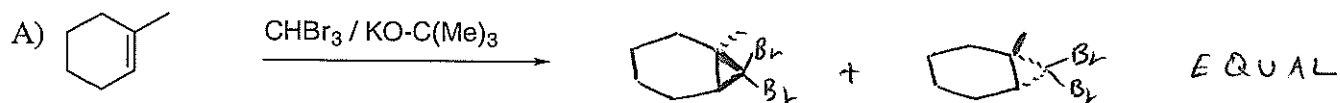
Recitation day and time: \_\_\_\_\_

Page	Possible points	Score
2	<u>15</u>	_____
3	<u>24</u>	_____
4	<u>23</u>	_____
5	<u>21</u>	_____
6	<u>17</u>	_____
TOTAL	<u>100</u>	_____

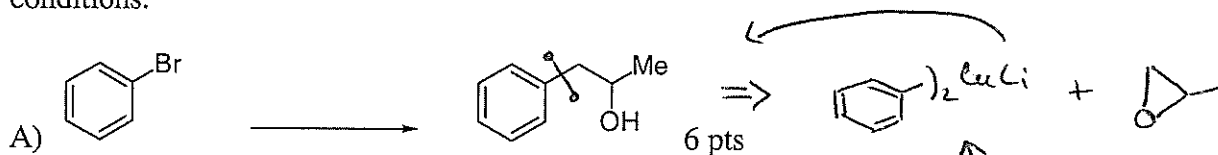
You have 2 hours to complete the exam.

If you are caught cheating, you will receive at best an F on this exam!

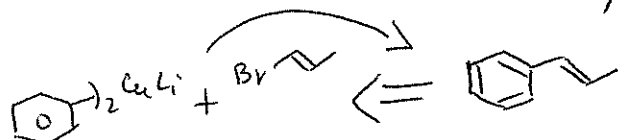
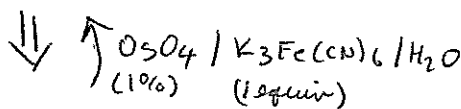
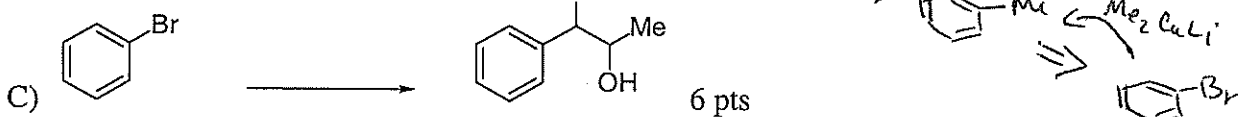
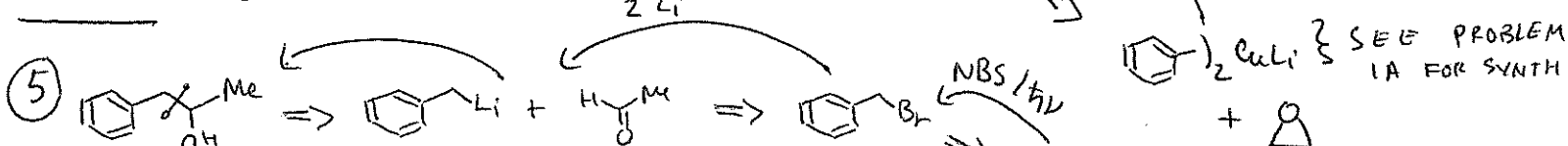
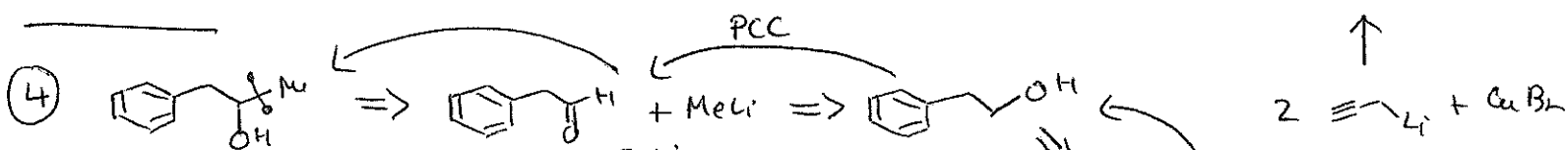
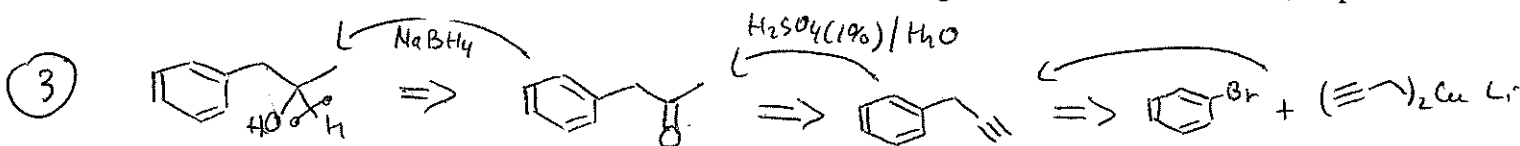
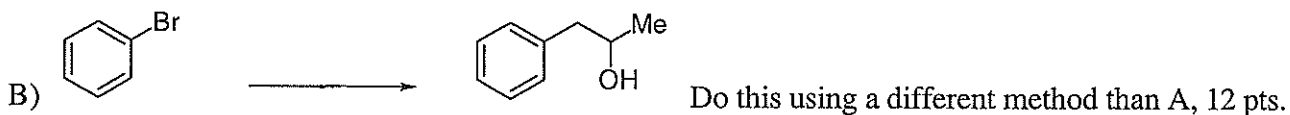
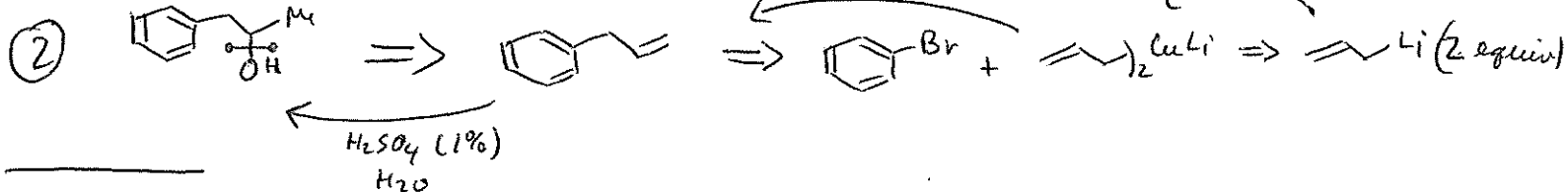
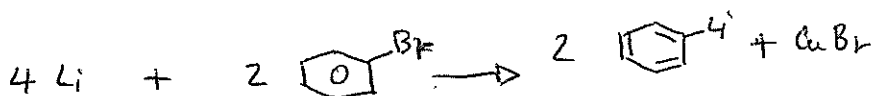
1) Provide the products of the following reactions. If no reaction would occur, then write NR. Draw all possible stereoisomers (i.e., draw dashed and bold lines as needed) and indicate if they would be produced in equal or unequal amounts. There is an appropriate aqueous work up for each reaction **UNLESS OTHERWISE NOTED** (3 points each answer except where indicated).



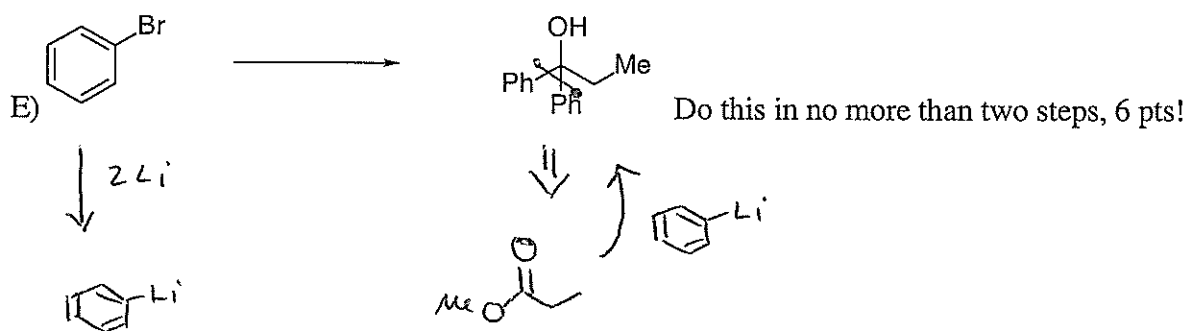
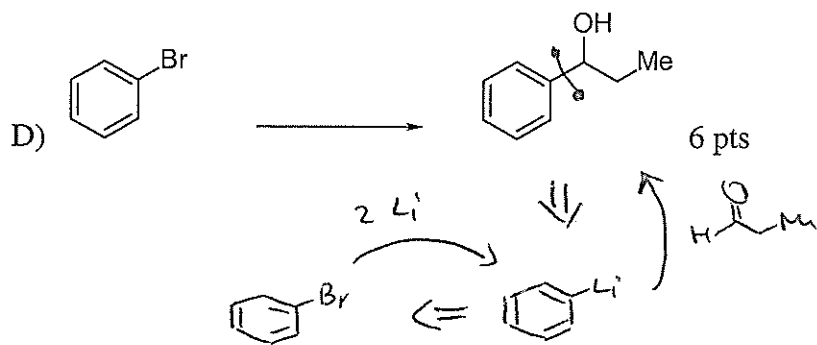
2) Provide the most efficient syntheses of the molecules shown below using organic reagents of 4 carbons or less and any common organic or inorganic reagents you wish. **If your synthesis requires more than one step, you must write the product of each step.** You do not have to include aqueous work up conditions.



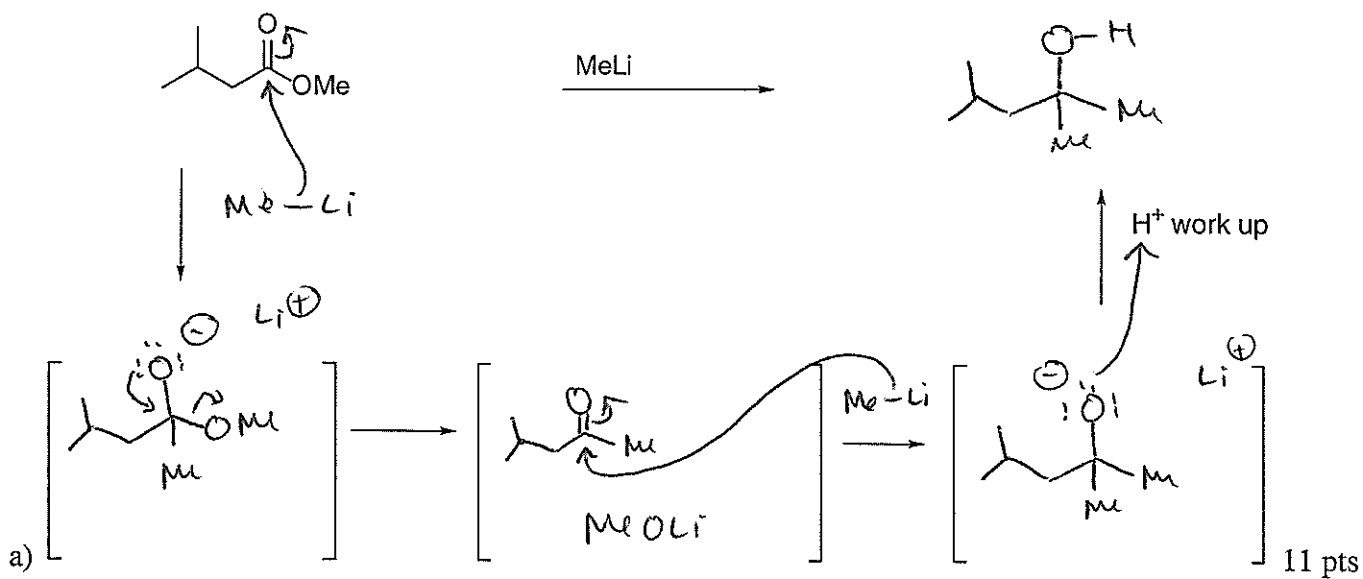
①

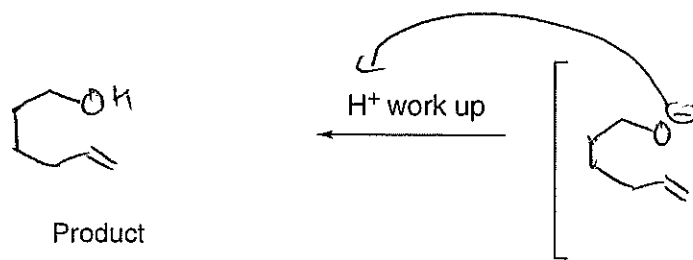
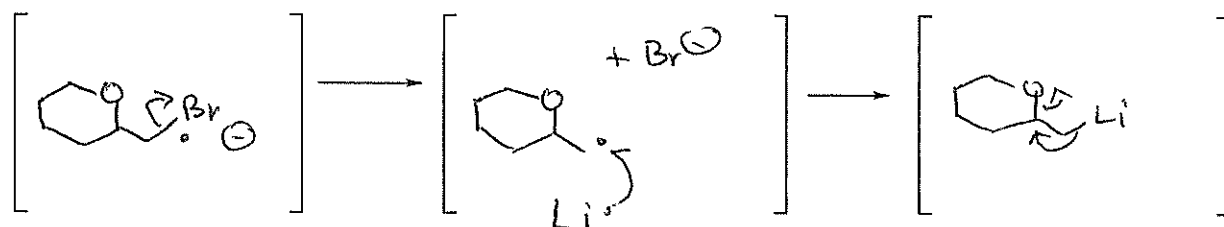
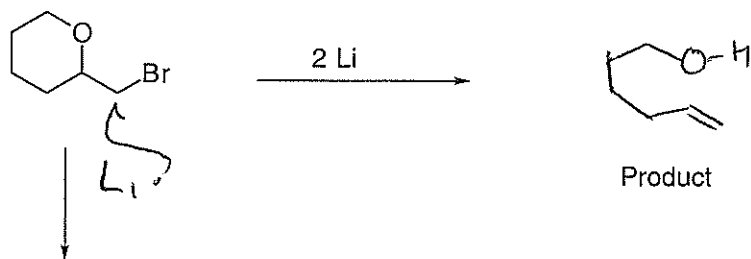


See PROBLEM  
1A FOR SYNTH



3) Provide the products and mechanisms for the reactions shown below. I have provided you with space to draw the intermediates, be sure to show all arrows, charges, etc., including the work up (continued on next page)!

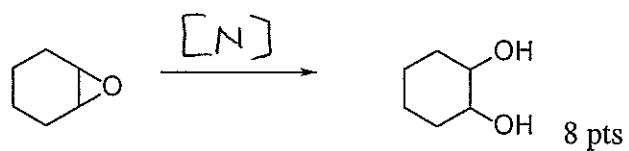
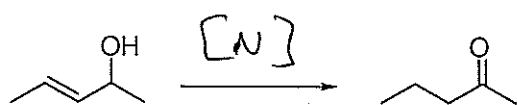
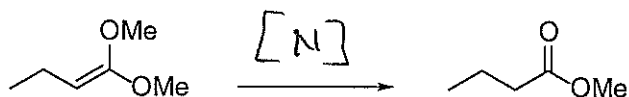
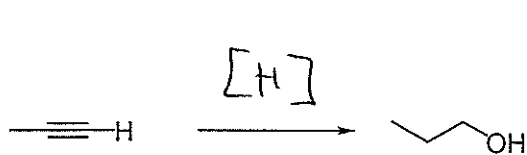




b)

13 pts

4) Label each of the following reactions as **oxidation**, **reduction**, **neither**, **can't tell**.



8 pts

