

Third Hour Exam

Name: _____

Recitation instructor's name: _____

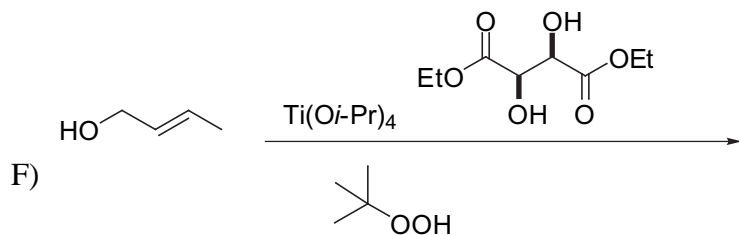
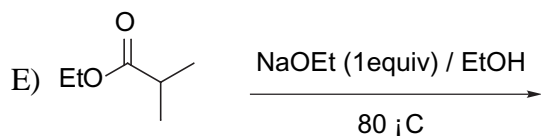
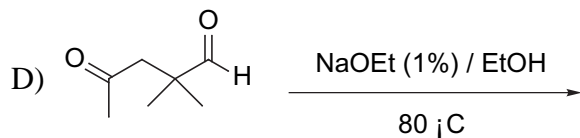
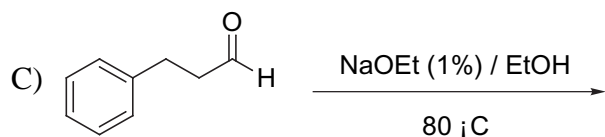
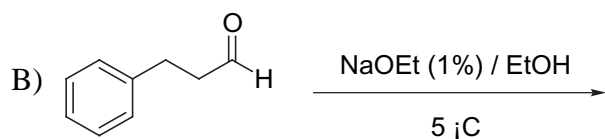
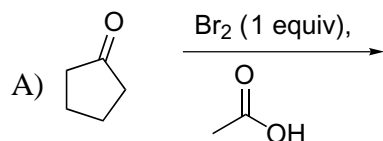
Recitation day and time: _____

Page	Possible points	Score
2	<u>18</u>	_____
3	<u>15</u>	_____
4	<u>27</u>	_____
5	<u>27</u>	_____
6	<u>13</u>	_____
TOTAL	<u>100</u>	_____

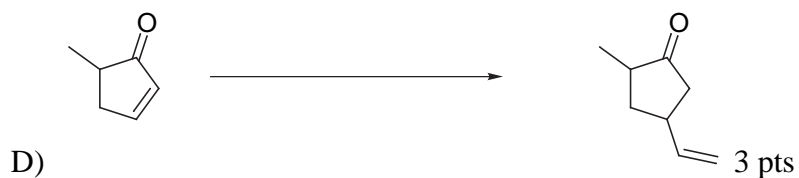
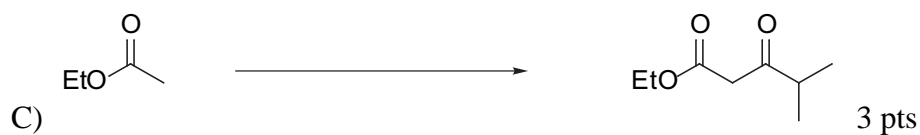
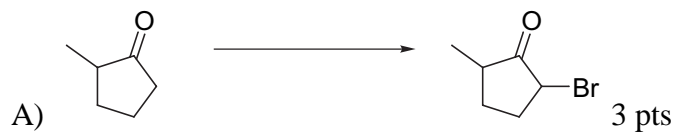
You have 2 hours to complete the exam.

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

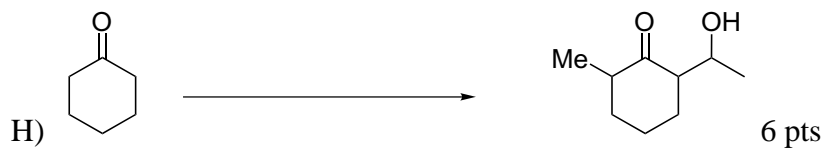
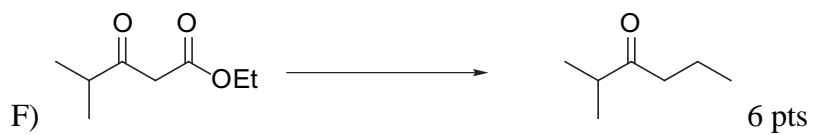
1) Provide the products of the following reactions. If no reaction would occur, then write NR. **Draw all possible stereoisomers (i.e., draw dashed and bold lines as needed) and indicate if they would be produced in equal or unequal amounts.** There is an appropriate aqueous work up for each reaction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



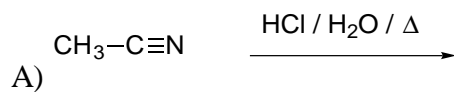
2) Provide the most efficient syntheses of the molecules shown below using common inorganic reagents and organic reagents of 20 carbons or less. **If your synthesis requires more than one step, you must write the product of each step.** You do not have to include aqueous work up conditions. All chiral products are racemic mixtures.



Problem 2 continued...

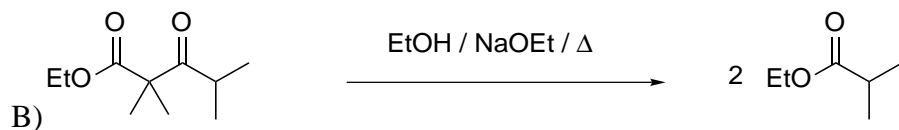


3) Provide the products and mechanisms for the reactions shown below. Be sure to show all arrows, charges, etc.



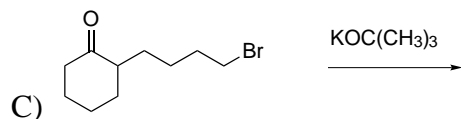
3 pts product
14 pts mech

Does the above reaction require **catalytic** amounts of HCl, or **1 equivalent** of HCl (circle ur answer 1 pt)



9 pts

Question 3 continued



3 pts product
6 pts mech

4) a) Reactions which proceed via enantiomeric transition states and produce stereoisomers will [always, never] provide the products in a 50/50 ratio (circle correct answer, 2 pts).

b) Reactions which proceed via diastereomeric transition states of different energies and produce stereoisomers will [always, never] provide the products in a 50/50 ratio (circle correct answer, 2 pts).

Scratch paper (this page intentionally left blank).