**Exam 3: Chemistry 4524 Wednesday 30 April 2014 \_\_/50**

***The Final Boxing Match with Organic Chemistry***

**Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Supply the missing reagents, reactants or products in the indicated boxes.

There are 55 boxes. Your best score out of 50 will be recorded.

A table of o,m,p ring director character is attached.



1)

2)



3)



most preferred only



4)

Benzoic acid

5)



6) most preferred only



\_\_/9

7)



**Styrene**



8)

n

9)





10)

+

11)



12)



13)



Dry ether



14)

2**-methylpropene**

\_\_\_/12

15)



Only !!



16)



17)

Major

18)



major minor

19)



20) Only !



2

21)



+ +

\_\_\_/15

22)

+



\\\\\\\

23)



24)





25)

26)



27)



2

28)





+

Major minor

\_\_\_/15

29)



30)



**2-methylpropanal**

31)



\_\_\_/4