**Exam 3: Chem 4524 Organic Chemistry II Alfred State College Spring 2017**

**The Final Boxing Match of the Season 70 pts**

**Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 pt**

**Fill in the boxes below. One (1) point for every correct answer**

**1)**

100% anti-Markovnikoff;

>90% yield;

~ 2 minutes



**2)**



**3)**



 **+**

**4)**





**5)**

**6)**

+



 **main product by-product**

**7)**





**\_\_\_/14 (includes name)**

**Chem 4524 Spring 2017 exam 3 boxes (continued) 2/6**



**8)**



**9)**

**10)**





**11)**

 **+H2O**

 **main product (party ! party !)**

**12)**



 **+ H2O**

 **main product**

**13)**



 **then H2O**

**14)**



**` hint: hydride**

 **+ (H-) involved.**



**15)**

 **+**

=PAr3

**\_\_\_/12 product by-product**

**Chem 4524 Spring 2017 exam 3 boxes (continued) 3/6**



**16) Product of problem 15**

**17)**



**hint: analogous to ozonolysis**

**18)**





 **vasectomy**

**19)**

**20) 3-methyl-3-pentanol; mark. only**



 **90% yield; < 2 minutes**



**21)**



**22)**



 **+**

**23)**



**\_\_\_/13**

**Chem 4524 Spring 2017 exam 3 boxes (continued) 4/6**

 **Main product here (enamine)**

**24)**





**25)**

 **(keto-enol tautomers)**

 **26)**



**27)**



intermediate product A

**28)**





**29)**



**30)**



**31)**

 **alkyl sulfonate**

 **intermediate A**

**A**

**\_\_\_/10**

 **+ -**

**Chem 4524 Spring 2017 exam 3 boxes (continued) 5/6**

**32)**



**33)**



 **+**

 **product by-product**

**34)**



**35)**



 **(aldol, kids!)**

**36)**



 **product by-product**

**37)**



\_\_/10

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38)



 2

39)



 +H2O

 Hint: an immine

40)



 Hint: α-H reaction

41)



 Hint: a poison

42)





43) hint: Brown

 2-step



**44)**

**45) Cats rule, dogs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**46) Any day doing organic chemistry is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_/11**