**Chem 3514: Organic I Exam 2 REVIEW SHEET FALL 2013 Exam date: Friday 15 Nov**

**Coverage: Reactions to and From Alkyl Halides; SN1 and SN2 Mechanisms; Road maps and little boxes**

**Exercises 7-14**

**Homework 6-9**

**Powerpoint drill and practice: “Reactions of Alkyl Halides Round Robin**

 **Reading from text:** *Naming and preparation of RX;*   **278-299**

 *Reactions of RX: SN1, SN2* **300-340;513-514**

**Snapshots of Exam section titles, point distributions, sample problems**

1. **Names and Structures** (2 pts each/12 points total)

Provide the correct name or structure below. Use IUPAC rules unless otherwise indicated.

 Draw 1,1,2-trimethyl-3-bromopentyl alcohol

##### Reactions to and from Alkyl Halides: Basic Facts and Vocabulary (16 pts)

1. In the modern, solution phase reaction of alcohols to alkyl chlorides, the common chloride source is the compound: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What solvent is commonly employed in the Grignard reaction ? \_\_\_\_\_\_\_\_\_\_\_

##### Mechanisms: Just the Facts (13 pts total)

**In each pair, circle the outcome associated with SN2 halogenation of alcohols (7 pts)**

a) product is inverted vs initial alcohol products are racemized

**In each pair, circle the outcome associated with SN1 halogenation of alcohols (6 pts)**

 a) both alcohol and halide affect rate only alcohol affects rate

##### Mechanisms: U-Tube Movies ( 10 pts)

Be prepared to write out and briefly describe an SN1 and SN2 reaction and predict all the likely produces

**VI. Mechanism: Sooth-Saying (21 pts)**

#### On speed ( 1 pt each/8 pts total)

Which will react faster assuming HBr/ aqueous w/reflux is applied in each case ?

a) 1-butanol or tert-butyl alcohol **or ~ same**

**Matchmaking (1 pt ea/5 pts total)**

You’ll be asked to identify the mechanism connected with 5 reactions or reaction outcomes

**Carbocat House (5 pts)**

Draw all the possible unique **carbocations** that can form from acid-catalyzed SN1 bromination of the compound drawn below. Circle the most likely (stable) species to form (5 pts)



 **VI) Little Boxes (17 pts)**



 **Neat or in ether**

**1)PBr3**(g) +

2)



##### VII. Willie Nelson time...On the road again synthesis (15 points/5 pts each)

3 simple road map problems will be posed. See back of exercise 10 and exercise 13