p. 572-579
and 591-592

**CHE 102 - Homework - Ch 22b**
**Alcohols and Ethers - Reactions**

Score: _____/50

Name: _____ Date: _____

[2 pt] 1. Answer the following questions about some dude named Saytzeff:

(a) What does his rule say?

(b) Give an example illustrating the rule.

[6 pt] 2. Complete the following reactions by filling in the missing reactants or products. You should answer each part in the format the reaction is presented in. Balance combustion reactions. If multiple products are made, circle the more stable product. If "No Reaction" occurs write NR in space.

(a) Primary Alcohol $\xrightarrow{[O]}$ $\xrightarrow{[O]}$

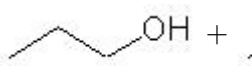
(b) Secondary Alcohol $\xrightarrow{[O]}$ $\xrightarrow{[O]}$

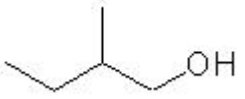
(c) Primary Alcohol + Primary Alcohol $\xrightarrow{-H_2O}$

(d) Primary Alcohol + Carboxylic Acid $\xrightleftharpoons{[H^+]}$

[42 pt] 3. Complete the following reactions by filling in the missing reactants or products. Balance combustion reactions. If it is a diagnostic test indicate what visual or speed observation would be made. If multiple products are made, circle the more stable product. If "No Reaction" occurs write NR in space. Note any diagnostic results (color changes, ppt, gas's, rates etc).

(a)  $\xrightarrow{-H_2O}$

(b)  +  $\xrightarrow{-H_2O}$

(c)  $\xrightarrow{[O]}$ $\xrightarrow{[O]}$

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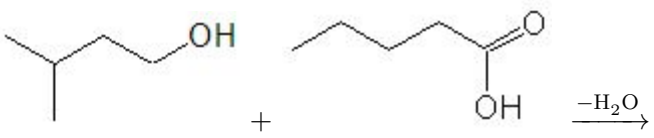
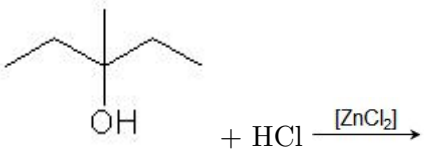
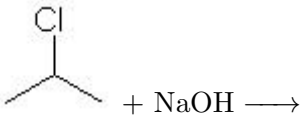
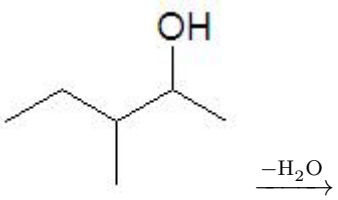
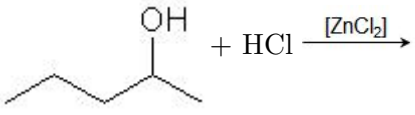
(d) 


(e) 


(f) 


(g) 


(h) 


(i) 

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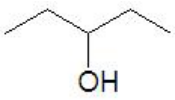
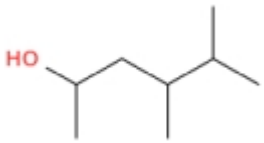
(j) 

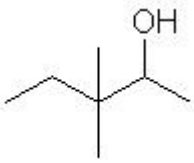
$+ \_\_O_2 \longrightarrow$

(k) 

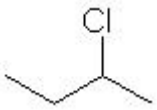
$\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$ $\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$

(l) 

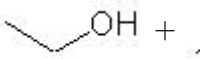
$\xrightarrow{-H_2O}$

(m) 

$\xrightarrow{-H_2O}$

(n) 

$+ \text{NaOH} \longrightarrow$

(o) 

$\xrightarrow{-H_2O}$

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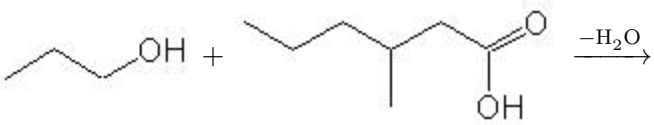
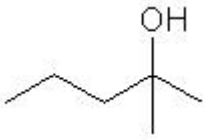
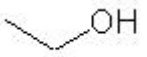
(p)  $\xrightarrow{-H_2O}$

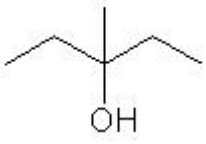
(q)  $\xrightarrow{-H_2O}$

(r)  $\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$ $\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$

(s)  $\xrightarrow{-H_2O}$

(t)  + HCl $\xrightarrow{[ZnCl_2]}$

(u)  + HCl $\xrightarrow{[ZnCl_2]}$

(v)  $\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$ $\xrightarrow[\Delta]{K_2Cr_2O_7/H_2SO_4}$