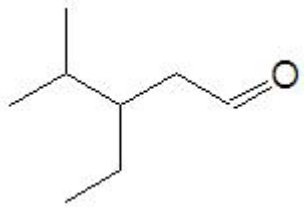
CHE 102 - Extra Practice Exam 2 - Chapter 22-23 Score: _____/165

Name: _____ Class: _____ Date: _____

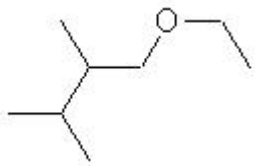
[20 pt] 1. Give the IUPAC name of the following molecules

(a)

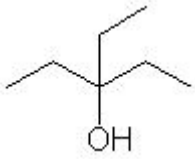


(b)

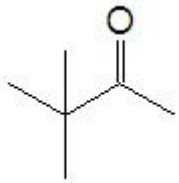
(c)



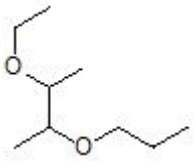
(d)



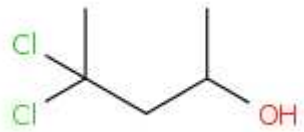
(e)



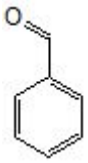
(f)



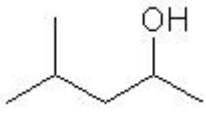
(g)



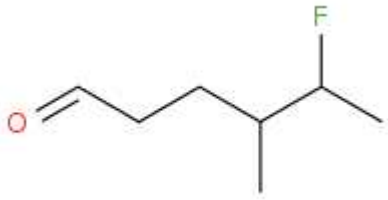
(h)



(i)



(j)



[20 pt] 2. Draw the following organic molecules:

(a) 2-ethoxy-2-methyloctane

(b) 3,4-dimethyl-1-pentanol

(c) 2,4-dimethylhexanal

(d) 2,2-dimethyl-3-pentanone

(e) phenol

(f) 1-butoxy-4-hydroxynonanal

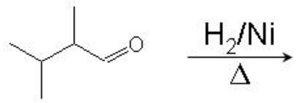
(g) 4-hydroxy-2-heptanone

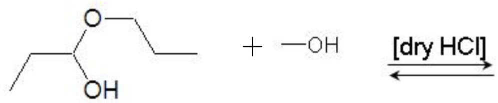
(h) 5-methyl-2-heptanone

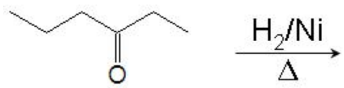
(i) 1,2-butanediol

(j) 2-chlorobutanal

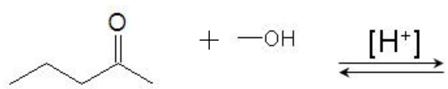
[40 pt] 3. Complete the following reactions in the format given. If one product is favoured in a reaction, circle that product. Include states where appropriate. Be sure to balance any combustion reactions. If no reaction occurs put NR for the products.

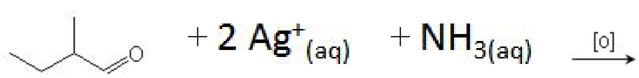
(a) 

(b) 

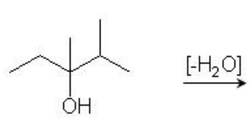
(c) 

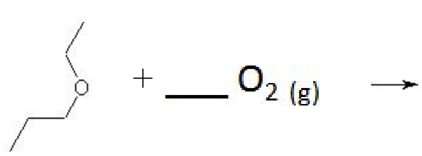
(d) 

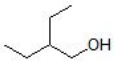
(e) 

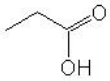
(f) 

(g) 

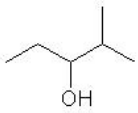
(h) 

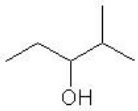
(i) 

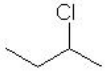
(j)  + HCl $\xrightarrow{[ZnCl_2]}$

(k)  +  $\xrightarrow{[-H_2O]}$

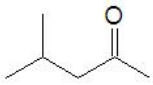
(l)  + 2 $Cu^{+2}_{(aq)}$ + NaOH $\xrightarrow{[o]}$

(m)  $\xrightarrow{[-H_2O]}$

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

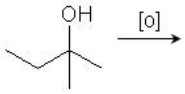
(o)  + NaOH $\longrightarrow$

(p)  $\xrightarrow{[o]}$

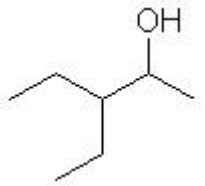
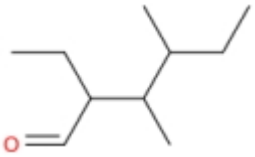
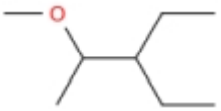
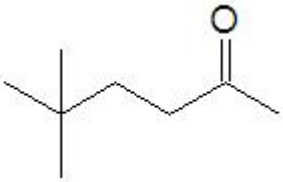
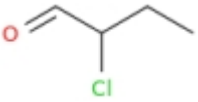
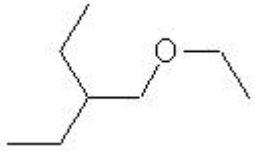
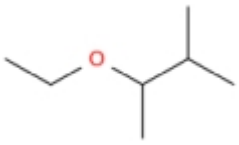
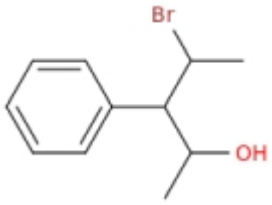
(q)  + HCN $\xrightarrow{[OH^-]}$

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

(s)  + 2 $Ag^{+}_{(aq)}$ + $NH_{3(aq)}$ $\xrightarrow{[o]}$

(t) 

[20 pt] 4. Give the IUPAC name of the following molecules

(a) 	(b) 
(c) 	(d) 
(e) 	(f) 
(g) 	(h) 
(i) 	(j) 

[20 pt] 5. Draw the following organic molecules:

(a) 2,2-dimethylhexanal

(b) 2-ethoxypentane

(c) benzaldehyde

(d) 3,4-dihydroxypentanal

(e) 2,2,4-trimethyl-3-pentanone

(f) 3,3-dimethoxypentane

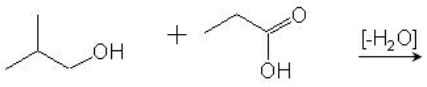
(g) 2-ethoxy-3-ethylhexane

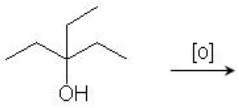
(h) 1-chloro-2-pentanone

(i) 4-ethylhexanal

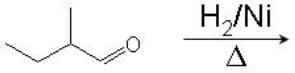
(j) phenol

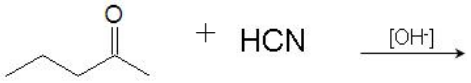
[45 pts] Complete the following reactions in the format given. If one product is favoured in a reaction, circle that product. Include states where appropriate. Be sure to balance any combustion reactions. If no reaction occurs put NR for the products.

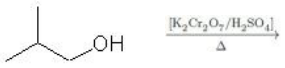
(a) 

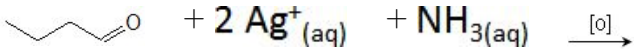
(b) 

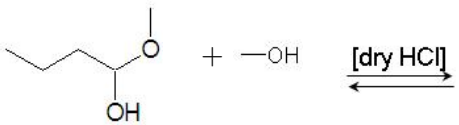
(c) 

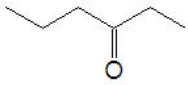
(d) 

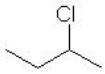
(e) 

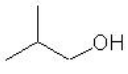
(f) 

(g) 

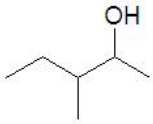
(h) 

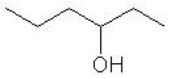
(i)  $+ 2\ Ag^{+}_{(aq)} + NH_{3(aq)} \xrightarrow{[o]}$

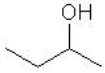
(j)  $+ NaOH \longrightarrow$

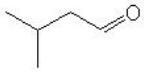
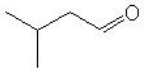
(k)  $+$  $\xrightarrow{[-H_2O]}$

(l)  $+$  $\xrightarrow{[-H_2O]}$

(m)  $\xrightarrow{[o]}$

(n)  $\xrightarrow{[-H_2O]}$

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

(p)  $+$  $\xrightarrow{[\text{dilute NaOH}]}$