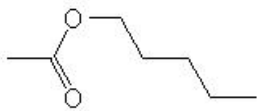
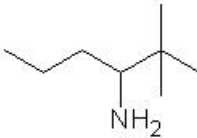
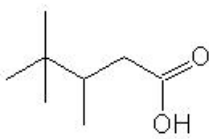
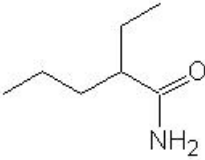

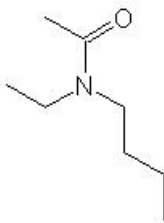
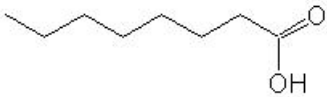
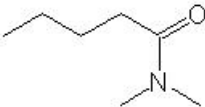
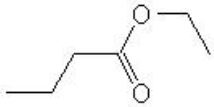
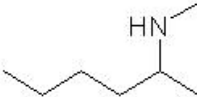


Name: _____

Class: _____

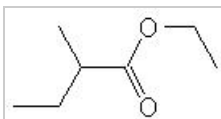
Date: _____

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

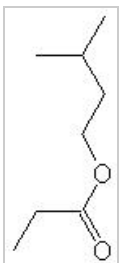
<p>(a)</p>  <p>1-pentyl ethanoate</p>	<p>(b)</p>  <p>2,2-dimethyl-3-hexanamine</p>
<p>(c)</p>  <p>3,4,4-trimethylpentanoic acid</p>	<p>(d)</p>  <p>2-ethylpentanamide</p>
<p>(e)</p>  <p>N,N-dimethyl-1-butanamine</p>	<p>(f)</p>  <p>N-butyl-N-ethylethanamide</p>
<p>(g)</p>  <p>octanoic acid</p>	<p>(h)</p>  <p>N,N-dimethylpentanamide</p>
<p>(i)</p>  <p>ethyl butanoate</p>	<p>(j)</p>  <p>N-methyl-2-hexanamine</p>

[20 pt] 2. Draw the following molecules using line structures or Lewis structures:

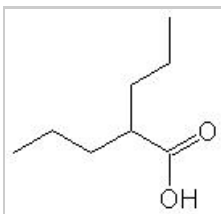
(a) ethyl 2-methylbutanoate



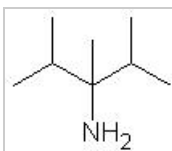
(b) 3-methylbutyl propanoate



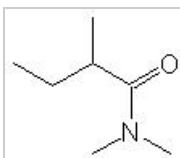
(c) 2-propylpentanoic acid



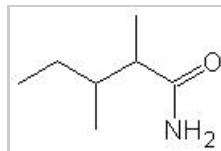
(d) 2,3,4-trimethyl-3-pentanamine



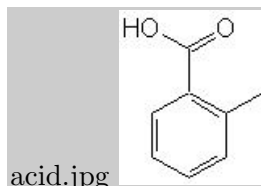
(e) N,N,2-trimethylbutanamide



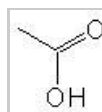
(f) 2,3-dimethylpentanamide



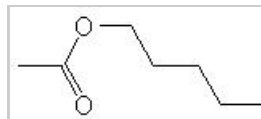
(g) o-methylbenzoic acid



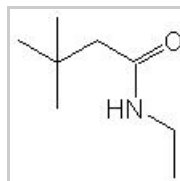
(h) ethanoic acid



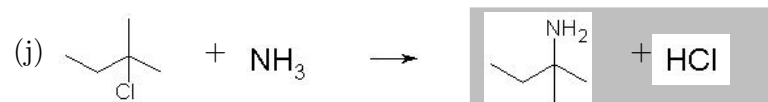
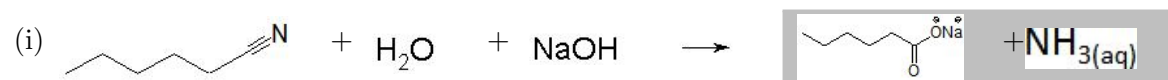
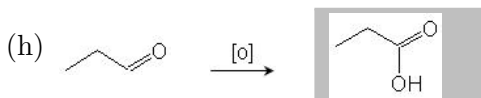
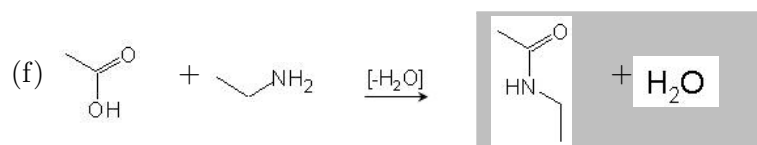
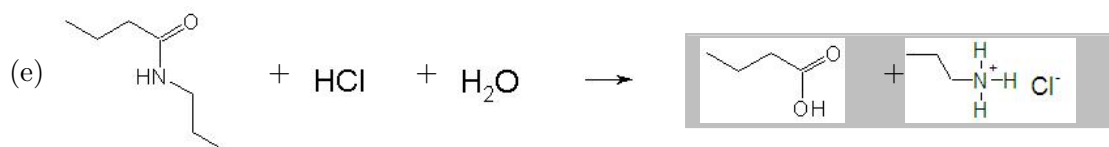
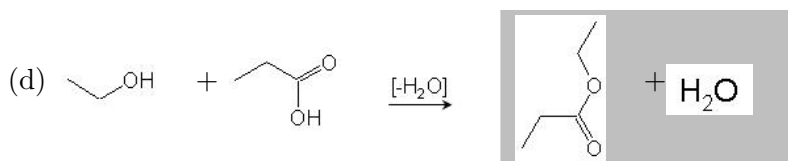
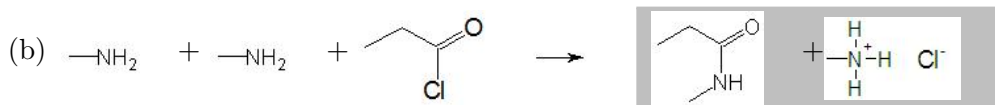
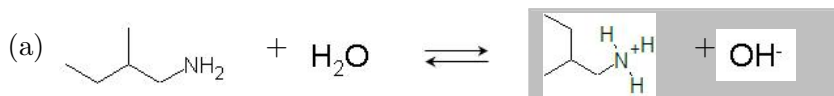
(i) 1-pentyl ethanoate

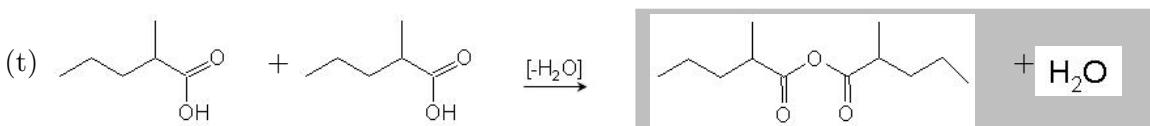
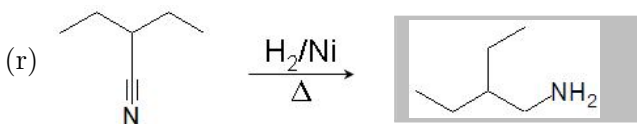
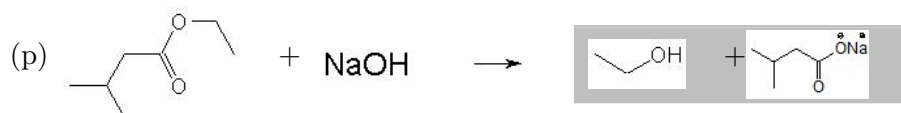
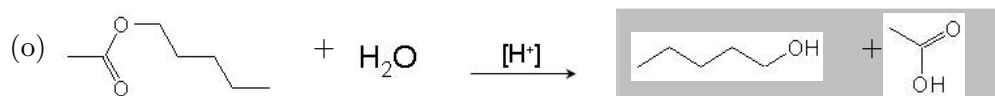
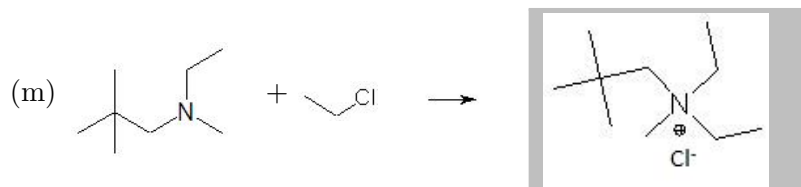


(j) N-ethyl-3,3-dimethylbutanamide

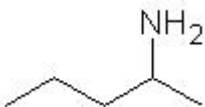
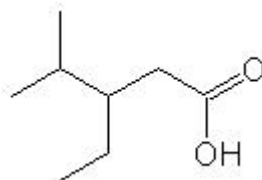
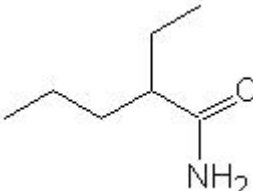
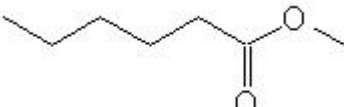
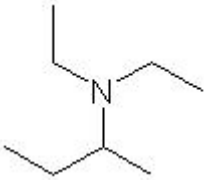
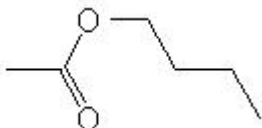
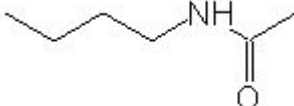
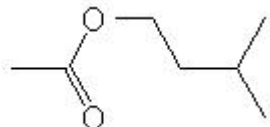
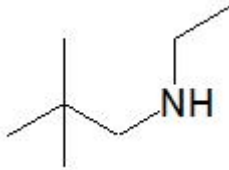
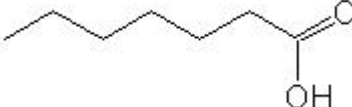


[40 pt] 3. Complete the following reactions in the format given. Assume all substitution reactions are mono-substitutions only. If one product is favored in a reaction circle that product. Include states where appropriate. Be sure to balance any combustion reactions. If no reaction occurs put NR for the products.



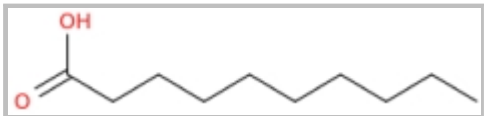


[20 pt] 4. Give the IUPAC name of the following molecules

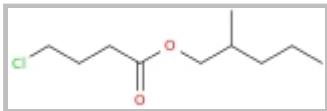
<p>(a) </p> <p>2-pentanamine</p>	<p>(b) </p> <p>3-ethyl-4-methylpentanoic acid</p>
<p>(c) </p> <p>2-ethylpentanamide</p>	<p>(d) </p> <p>methyl hexanoate</p>
<p>(e) </p> <p>N,N-diethyl-2-butanamine</p>	<p>(f) </p> <p>butyl ethanoate</p>
<p>(g) </p> <p>N-butylethanamide</p>	<p>(h) </p> <p>3-methylbutyl ethanoate</p>
<p>(i) </p> <p>N-ethyl-2,2-dimethyl-1-propanamine</p>	<p>(j) </p> <p>heptanoic acid</p>

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

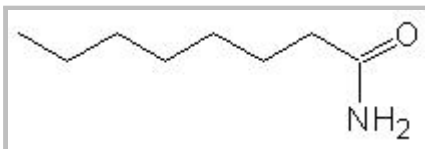
(a) decanoic acid



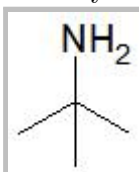
(b) 2-methylpentyl 4-chlorobutanoate



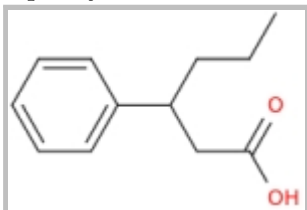
(c) octanamide



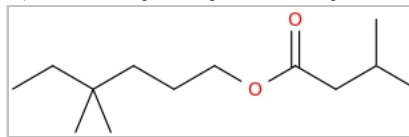
(d) 2-methyl-2-propanamine



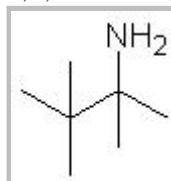
(e) 3-phenylhexanoic acid



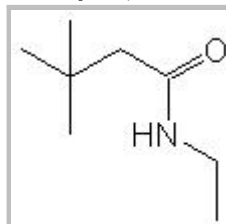
(f) 4,4-dimethylhexyl 3-methylbutanoate



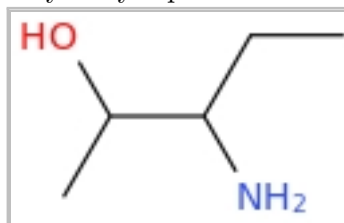
(g) 2,3,3-trimethyl-2-butanamine



(h) N-ethyl-3,3-dimethylbutanamide



(i) 2-hydroxy-3-pentanamine



(j) benzoic acid



[45 pt] 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.

