## **Carbonyl Compounds Homework Key**

Draw the structures of the following compounds.

formic acid

ethyl acetate 
$$CH_3$$
- $C$ - $O$ - $CH_2$ - $CH_3$ 

benzyl benzoate

 $\begin{array}{c} & \text{O} \\ \text{II} \\ \text{acetaldehyde} & \text{CH}_3\text{CH} \end{array}$ 

diethyl ketone 
$$CH_3CH_2$$
- $C$ - $CH_2CH_3$ 

benzaldehyde H-C C-CH C=C

O 
$$\parallel$$
 2-hexanone  $CH_3$ - $C$ - $CH_2CH_2CH_2CH_3$ 

2-methylbutanal

4-methyl-2-pentanone 
$$CH_3$$
- $C$ - $CH_2$ CHC $H_3$ 

Provide all correct, reasonable names for the following. Question "g" has 3 possible names.

a) HO-C-CH-CH
$$_2$$
-C-OH CH $_3$ 

methylbutanedioic acid

phenyl butanoate

c) 
$$CH_3-CH_2-CH$$

propanal

d) 
$$CH_2$$
  $CH_2$   $C=0$   $CH_2$   $CH_2$ 

cyclopentanone

e) 
$$\begin{array}{ccc} & & Br & O \\ & & & & II \\ & CH_3-CH-CH_2-CH \end{array}$$

3-bromobutanal

2-ethyl-3-methylbutanoic acid 2-isopropylbutanoic acid (poor)

$$^{\mathrm{g})}$$
  $\overset{\mathrm{O}}{\underset{\mathrm{CH}_{3}}{\parallel}}$   $^{\mathrm{C}}$   $^{\mathrm{C}}$   $^{\mathrm{CH}_{3}}$ 

acetone, propanone, (both preferred) dimethyl ketone

h) 
$$CH_3-CH_2-C-O-CH_2-CH_3$$

ethyl propanoate

i) 
$$\begin{matrix} O & OH \\ \parallel & \parallel \\ CH_3-CH_2-C-CH_2-CH-CH_2-CH_3 \end{matrix}$$

5-hydroxy-3-heptanone