## **ORGANIC PROBLEM SET 3**

- 1. Draw and name all the isomeric alcohols with the formula  $C_5H_{12}O$ .
- 2. Draw and name all the isomeric aldehydes with the formula  $C_5H_{10}O$ .
- 3. Name the following:

(a) 
$$OH$$
  $COOH$   $CI$   $CH_3$   $CH_3$   $CH_3$   $CH_4$   $CH_5$   $CH_5$   $CH_5$   $CH_5$   $CH_6$   $CH_7$   $CH_8$   $CH_8$   $CH_8$   $CH_8$   $CH_8$   $CH_9$   $CH_9$ 

- 4. Draw structures for:
  - (a) *m*-bromophenol

- (b) o-chloroisopropylbenzene
- (c) 2,4,6-trinitrotoluene (TNT)
- 5. Draw the structure of the major product(s) in each case:

(a) 
$$\leftarrow$$
 CH<sub>3</sub> + Br<sub>2</sub>  $\rightarrow$  light

(b) 
$$CH_3 \leftarrow CH_3 + Br_2 \rightarrow FeBr_3$$

(d) 
$$OH$$
 $CH_2CH_3$ 
 $H^+/heat$ 

(e) 
$$(CH_3)_3COH + Na$$

(f) 
$$\sim$$
 CHCH<sub>2</sub>CH<sub>3</sub> + KMnO<sub>4</sub>

(g) 
$$\sim$$
 COOH +  $\sim$  OH  $\sim$   $\sim$  H<sup>+</sup>

(h) 
$$\langle Pd \rangle$$
 - CHO + H<sub>2</sub> - Pd -