February March 14, 2001 SSN_____Seat No_____Seat No_____

1. Complete the following equations. Name all organic reactants and products. (35%)

a.
$$CH_3$$
 CH_2
 CH_2
 CH_2
 CH_2
 CH_3
 CH_3

b.
$$\begin{array}{c} H_2 \\ H_3C \\ CH_2 \\ H_3C \\ \end{array} \\ \begin{array}{c} H^2 \\ CH_2 \\ \end{array} \\ \begin{array}{c} H^+ \\ CH_3 \\ CH_2 \\ \end{array} \\ \begin{array}{c} H^+ \\ CH_3 \\ \end{array}$$

d.
$$\begin{array}{cccccc} & CH_3 & H_2 & COOH \\ & & CH & C & COOH \\ & & & H_3C & C & CH & + NaOH \end{array}$$

e.
$$CH$$
 + H_3C CH_3

don't name

Asprin (draw the structur

- 2. Draw the structures of the compounds whose names are given below. (20%)
- a. 2-Chloro-4-bromophenol
- b. Trans-2-methylcyclopentanol
- c. 1,4-diphenyl-3-pentanol
- d. Diisopropyl ether
- 3. Write two equations which would allow the preparation of 2-butanol

$$\begin{pmatrix}
H_2 \\
CH_3 & CH_3 \\
I \\
OH
\end{pmatrix}$$
 in one step. (20%)

4. Write the mechanism for the reaction shown below. (15%)

5. The ir spectrum of an unknown compound shows it to be an alcohol, the mass spectrum gives a molecular weight of 60 and the carbon NMR shows two different kinds of carbons. Propose a reasonable structure for the unknown. (10%)

Grade_____