Name KEY

University of Louisville **Chem 105** **Fall 2015**

Exam 3 November 23

Free-Response ANSWER SHEET

(MC score 115 FR score 37 Total raw 152 total %_____)

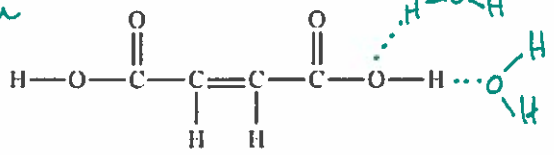
33x3 + 16 = 115

115
37
152

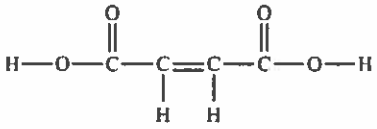
1. [4 pts] Sketch a **hydrogen bonding interaction** between the molecule below and a molecule of **water.**

only one interaction needed – three options shown

4

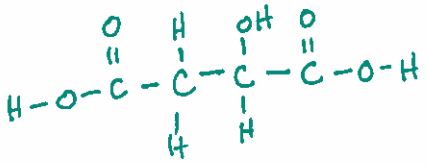


3. [4 pts] In the space below, draw the organic molecule that is formed when the molecule shown undergoes **hydration.**



add H & OH

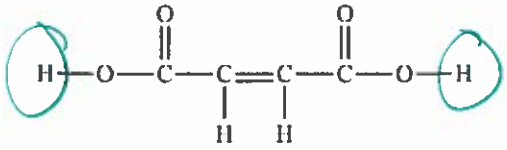
4



2. The molecule below is commonly found in some fruits.

(a) [4 pts] **Circle** the hydrogen atom(s) that can be donated as H^+.

4

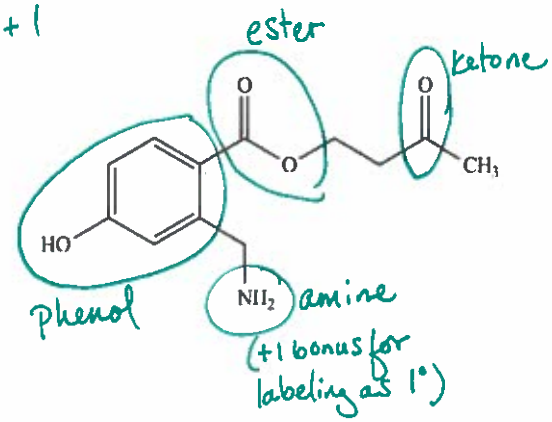


(b) [4 pts] Write the **molecular formula** for this compound, in a way that appropriately represents its behavior as an acid.

4 $H_2C_4H_2O_4$

4. [9 pts] **Circle and name all functional groups** in the molecule below.

9 + 1



5. **[10 pts] In the space below, write the balanced equation, with appropriate phase labels, for the reaction between **H_3PO_4 and F^-** in aqueous solution.

10 $H_3PO_{4(aq)} + F^-_{(aq)} \rightleftharpoons H_2PO_4^-{}_{(aq)} + HF_{(aq)}$

(reminder--did you include phase labels?)

6. [2 pts] What is your instructor's name, with appropriate title? Dr Hoyt or Professor Hoyt

2

2

Check back over your exam and make sure you have completed all parts before turning in your paper!