

Chem 333  
Fall 2012  
Exam #4  
December 3, 2012

Name \_\_\_\_\_

1. (30 points) Deduce the structure of **A**.



**$^1\text{H}$  NMR:**

7.43, t,  $J = 8.4$  Hz, 1H

6.55, d,  $J = 8.4$  Hz, 2H

3.93, s, 6H

**$^{13}\text{C}$  NMR:**

162.6, s (2)

134.8, d

114.2, s

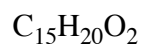
103.4, d (2)

91.2, s

56.2, q (2)

2. (30 points) Deduce the structure of B.

**B**



MS: 232 (90), 163 (100), 115 (45)

**$^1\text{H}$  NMR:**

0.89, s, 3H

0.96, s, 3H

1.8, m, 2H

2.0, m, 2H

2.45, m, 2H

3.48, s, 1H

3.82, s, 3H

6.8, m, 3H

7.25, t,  $J = 7.8$  Hz, 1H

**$^{13}\text{C}$  NMR:**

209.6, s

158.8, s

136.5, s

128.3, d

123.7, d

117.3, d

111.9, d

67.4, d

55.2, q

41.5, t

40.8, s

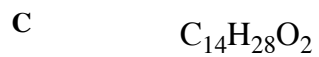
22.5, t

30.6, t

22.3, q

17.3, q

3. (40 points) Deduce the structure of C.



MS: 228 (40), 171 (100), 130 (35)

IR: 2920, 2870, 1756  $cm^{-1}$

**$^1H$  NMR:**

0.95, t, J = 7.2 Hz, 3H  
0.98, d, J = 6.9 Hz, 6H  
1.3-1.7, m, 15 H  
2.29, t, J = 7.4 Hz, 2H  
4.10, t, J = 7.3 Hz, 2H

**$^{13}C$  NMR:**

173.9, s      25.1, d  
62.9, t      25.0, t  
37.4, t      22.7, t  
34.4, t      22.5, q (2)  
31.9, t      14.1, q  
29.3, t  
29.2, t  
29.1, t