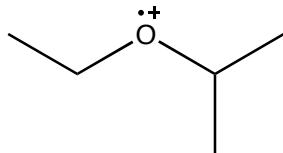


1. (10 pts ea.) When 2-ethoxypropane fragments in a mass spectrometer, heterolytic cleavage reactions produce two observable fragments. Draw the products of the fragmentation reactions and circle the observable fragments.



2. The mass spectrum for 3-hexanone,  $\text{CH}_3\text{CH}_2\text{C}(=\text{O})\text{CH}_2\text{CH}_2\text{CH}_3$ , has a peak at  $m/z = 57$  with a relative intensity of 84. The  $m+1$  peak at  $m/z = 58$  has a relative intensity of 3.
- (5 pts.) Determine the number of C atoms in the fragment.
  - (5 pts.) Determine the formula for the fragment at  $m/z = 57$ .

3. (10 pts.) An IR spectrum for a compound with the formula  $\text{C}_9\text{H}_{12}\text{O}$  is pictured below. Identify as many structural features of the molecule as you can.

