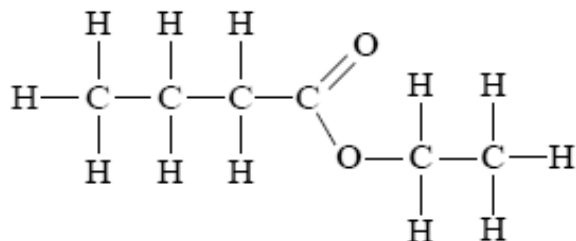


Friday Worksheet
Mass spectroscopy 3

Name:

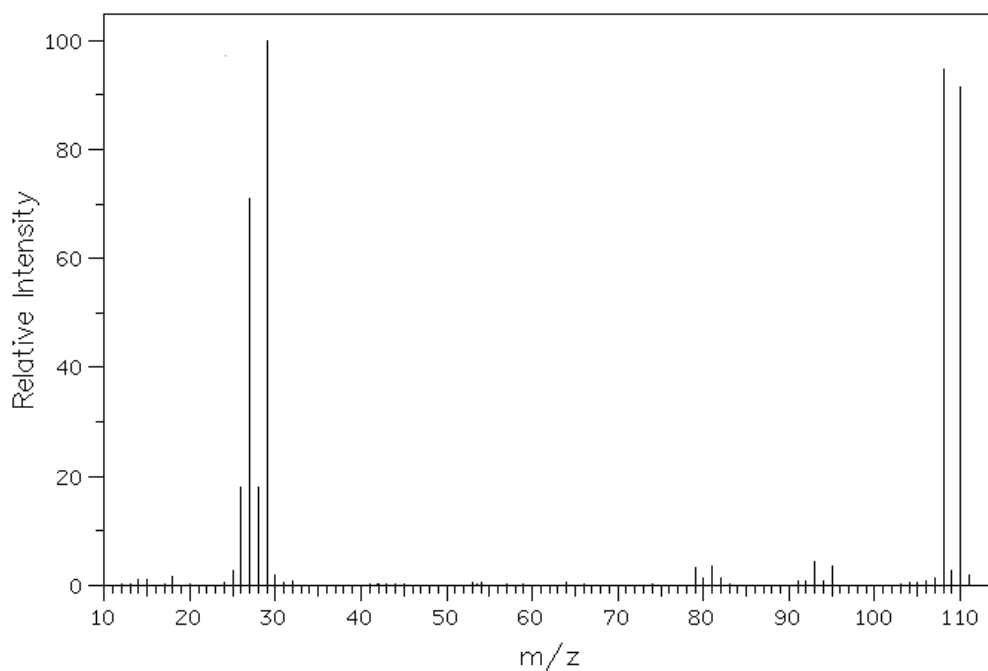
1) Select the species that produces the molecular ion peak in the mass spectrum of the compound below.



- i) $[\text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2\text{CH}_3]^+$
- ii) $[\text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2\text{CH}_3]^{2+}$
- iii) $[\text{CH}_3\text{CH}_2\text{CH}_2\text{COO}]^+$
- iv) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2$
- v) $[\text{CH}_3\text{CH}_2\text{CH}_2]^+$

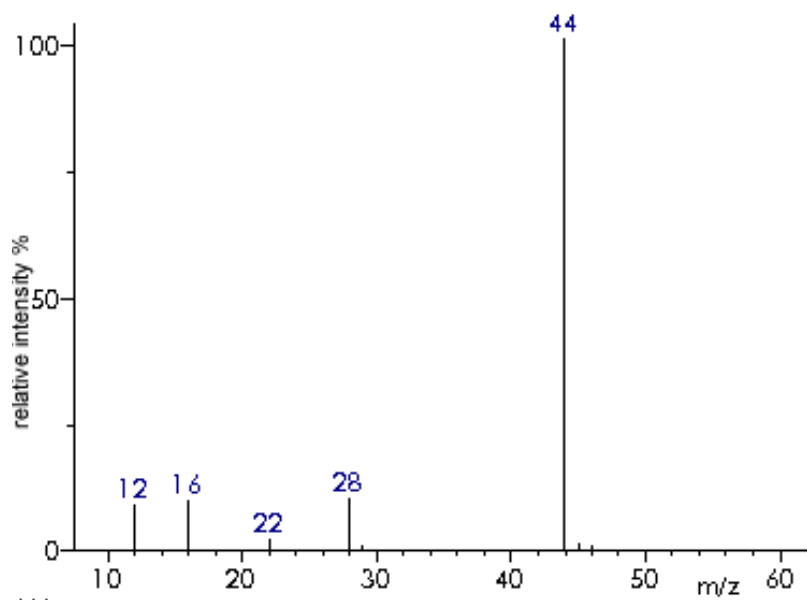
2) When studying the mass spectrum of the molecule above, which of the charged fragments, listed from i to iv, forms a peak to the left of the peak formed by fragment (v)? Explain

3) Below is the mass spectrum of ethyl bromide ($\text{C}_2\text{H}_5\text{Br}$)



- a) What fragment caused the peak at m/z 29?
- b) Why are there two peaks around m/z 110?
- c) The peak at m/z 29 represents the loss of what fragment from the molecule?
- d) What do the peaks at m/z 108 and 110 indicate about the relative abundance of the isotopes ^{79}Br and ^{81}Br

4) Below is a mass spectrum of a molecule.



- Identify the parent ion peak
- Identify the base peak
- What fragment caused the peak at m/z 22 and 28?
- Identify the molecule