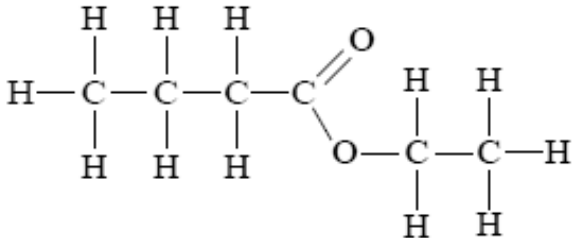
**Friday Worksheet** **Name: …….**
**Mass spectroscopy 3**

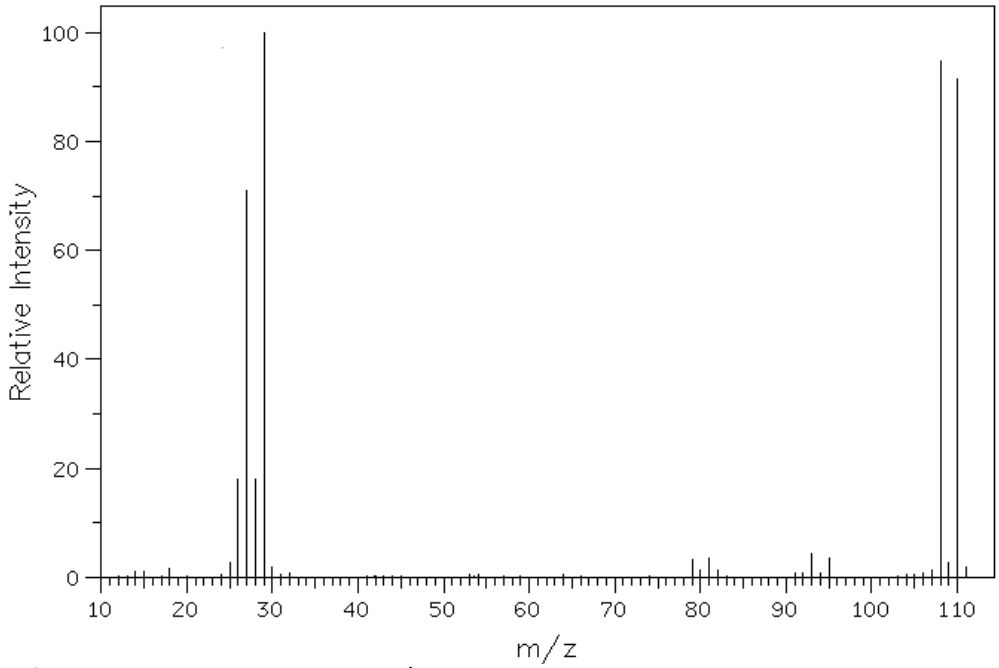
1) Select the species that produces the molecular ion peak in the mass spectrum of the compound below.



i) $[CH_3CH_2CH_2COOCH_2CH_3]^+$
ii) $[CH_3CH_2CH_2COOCH_2CH_3]^{2+}$
iii) $[CH_3CH_2CH_2COO]^+$
iv) $[CH_3CH_2CH_2COOCH_2]^-$
v) $[CH_3CH_2CH_2]^+$

2) Which of the species above cannot be formed in a mass spectrometer? Explain

3) Below is the mass spectrum of ethyl bromide ($C_2H_5Br$)



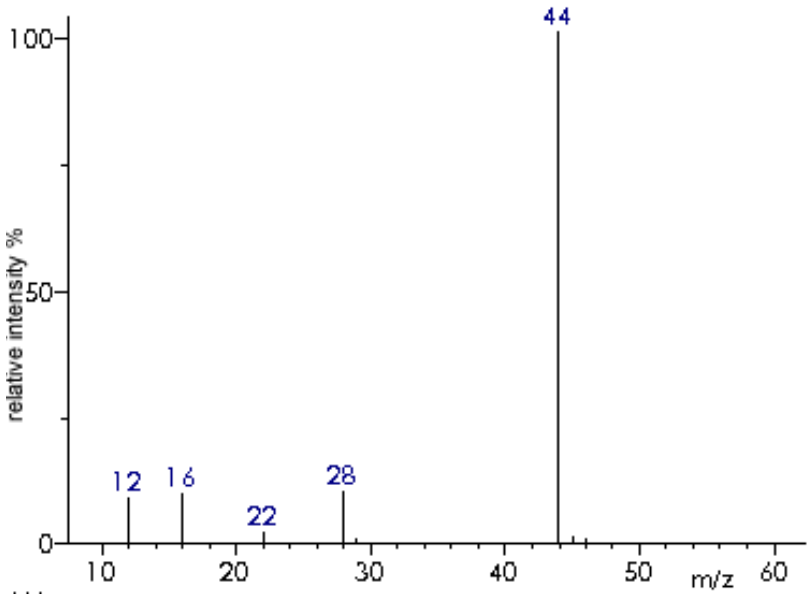

a) What fragment caused the peak at m/z 29?

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.




a) Identify the parent ion peak

b) Identify the base peak

c) What fragment caused the peak at m/z 22 and 28?

d) Identify the molecule