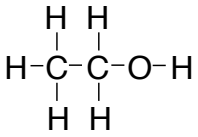
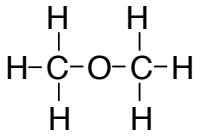
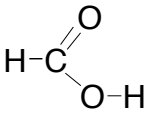
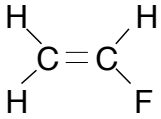
MASS SPECTRA: THE M+ LINE

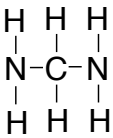
1. a) 46. You have to assume that the heaviest line corresponds to the molecular ion. An examiner couldn't ask the question otherwise.

   b) I found:

   C_2H_6O which could be either  or 

   CO_2H_2 

   C_2H_3F 

   CH_6N_2 

   c) You just have to do this by trial and error. By adding up the accurate masses, you will find that the only compound which gives this total mass is HCOOH, methanoic acid

   d) $HCOOH \longrightarrow [HCOOH]^+ + e^-$

   You can write a dot (to show that it is now a radical) as well as the + sign after the molecular ion if you want to. Make sure that you are consistent with whatever your examiners use. If in doubt, include the dot.

   e) 17: $[OH]^+$ (In this, and all the other cases, if you don't show the plus sign, it is wrong!)

   28: $[CO]^+$

   29: $[HCO]^+$

   45: either $[HCOO]^+$ or $[COOH]^+$