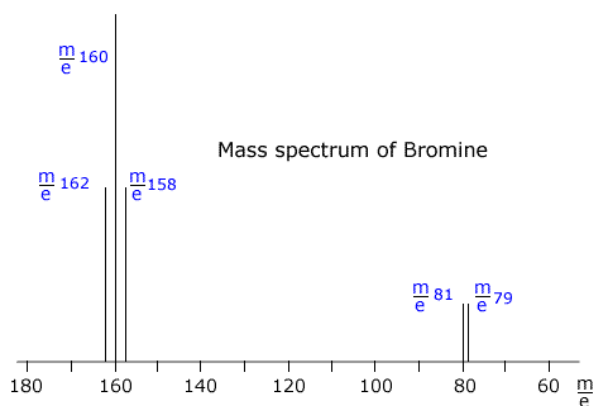


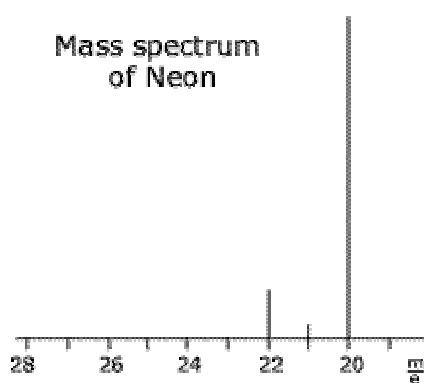
Exercise 2.22– Mass spectra

Q222-01 The mass spectrum of bromine is shown in the following diagram. What are the peaks at m/e 162, m/e 160 and m/e 158 due to?



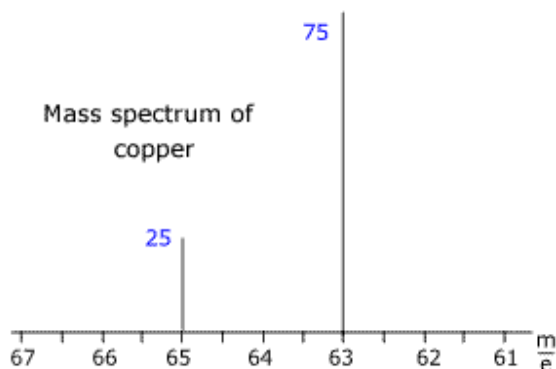
Q222-02 According to the mass spectrum in the diagram below, the relative atomic mass of the element shown is best expressed as which of the given possibilities:

- A. 20.0
- B. between 20.0 and 21.0
- C. 21.0
- D. between 21.0 and 22.0



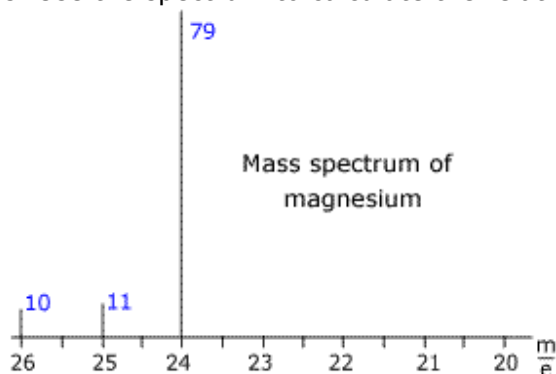
Q222-03 In the mass spectrum of chlorine the line at m/e 35 is about three times more intense (higher) than the line at m/e 37. What information can be obtained from this observation?

Q222-04 The following diagram shows the mass spectrum of copper with the relative intensities of the ions detected. Use this information to calculate the relative atomic mass of copper.

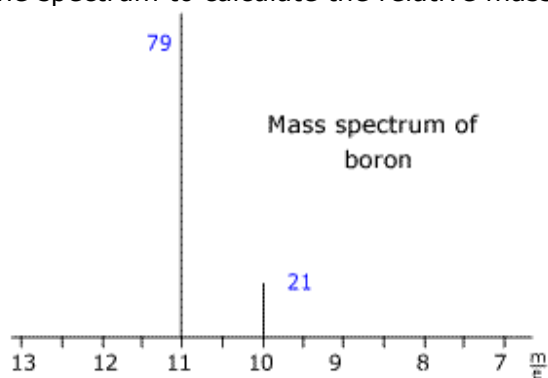


Exercise 2.22– Mass spectra

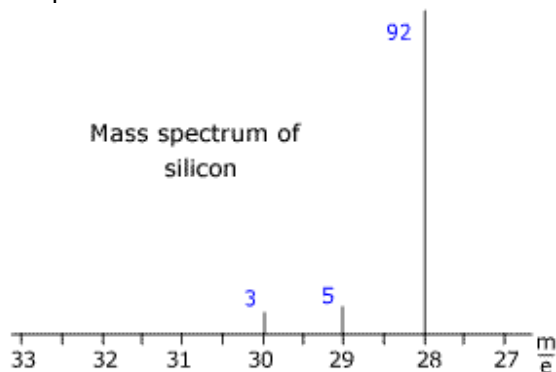
Q222-05 The mass spectrum of magnesium is shown below. The blue numbers refer to the relative intensity of the peaks. Use the spectrum to calculate the relative mass of magnesium.



Q222-06 The mass spectrum of boron is shown below. The blue numbers refer to the relative intensity of the peaks. Use the spectrum to calculate the relative mass of boron.

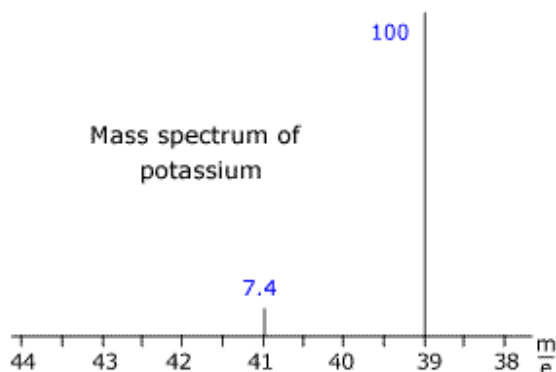


Q222-07 The mass spectrum of silicon is shown below. The blue numbers refer to the relative intensity of the peaks. Use the spectrum to calculate the relative mass of silicon.

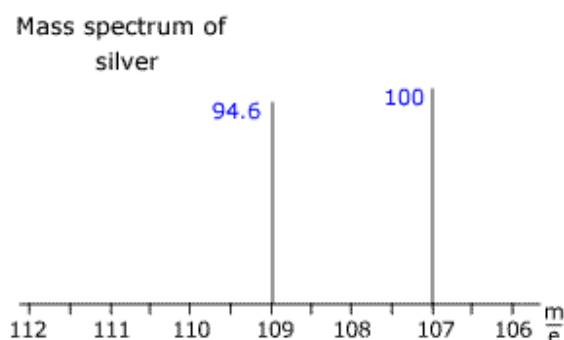


Exercise 2.22– Mass spectra

Q222-08 The mass spectrum of potassium is shown below. The blue numbers refer to the relative intensity of the peaks. Use the spectrum to calculate the relative mass of potassium to two decimal places.



Q222-09 The mass spectrum of silver appears below. Use the information to calculate the relative atomic mass of silver.



Q222-10 A sample of uranium hexafluoride gas was extracted from the centrifuges in a nuclear processing plant and analysed by MS to find the percentage of ^{235}U enrichment. The following spectrum was obtained (only the relevant portion is shown). Fluorine has only one isotope with a relative mass of 19. Use this information to calculate the percentage uranium-235 in the sample.

