

1.1 – ATOMIC STRUCTURE – PPQ2



Name Form

- 2) a) Give the relative charge and relative mass of an electron.

Relative charge Relative mass (2)

- b) Isotopes of chromium include ^{54}Cr and ^{52}Cr

i) Give the number of protons present in an atom of ^{54}Cr

ii) Deduce the number of neutrons present in an atom of ^{52}Cr

iii) Apart from the relative mass of each isotope, what else would need to be known for the relative atomic mass of chromium to be calculated?

..... (3)

- c) In order to obtain a mass spectrum of a gaseous sample of chromium, the sample must first be ionised.

i) Give **two** reasons why it is necessary to ionise the chromium atoms in the sample.

Reason 1

Reason 2

ii) State what is adjusted so that each of the isotopes of chromium can be detected in turn.

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iii) Explain how the adjustment given in part (c)(ii) enables the isotopes of chromium to be separated.

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..... (4)