1 Protons, neutrons and electrons are particles found in atoms.

(a) Complete Table 1.1 to show the relative mass and relative charge of a proton, a neutron and an electron.

Table 1.1

particle	relative mass	relative charge
proton		+1
neutron		
electron	$\frac{1}{1840}$	

[2]

(b) Some elements have many isotopes.

(i) Define the term isotopes.

.....

.....

..... [2]

(ii) Explain why all isotopes of the same element have the same chemical properties.

.....

..... [1]

(c) Complete Table 1.2.

Table 1.2

atom or ion	number of protons	number of neutrons	number of electrons
$^{40}_{18}Ar$	18		18
$^{32}_{16}S^{2-}$		16	
	22	28	20

[5]

(d) The term mass number is defined as the total number of protons and neutrons in the nucleus of an atom.

State the name of **one other** term which is defined as the total number of protons and neutrons in the nucleus of an atom.

..... [1]

(e) Calculate the number of atoms in 2.00 g of argon.

Give your answer in standard form.

number of atoms = ... [2]

[Total: 13]