

1. a) Complete the table about atomic particles.

Atomic Particle	Relative Mass	Relative Charge
.....	+1
.....	1
.....	Negligible

b) Describe the structure of the atom in terms of these particles.

.....

.....

.....

2. Complete the following table. You may need to refer to a data book or Periodic Table of the elements. The first one is done for you.

Element name	Symbol	Number of protons	Number of neutrons	Number of electrons
Sodium	Na	11	12	11
Magnesium				
Aluminium				
	C			
	N			
		8		
				7

3. Explain why ...

a) only the masses of the protons and neutrons in an atom contribute significantly to its mass.

.....

b) an atom has no overall (net) electrical charge.

.....

c) the idea that all substances are made of very small particles was rejected until John Dalton came along in 1808.

.....

4. Use a Periodic Table to help you decide to which element each of the following atoms belongs.

Number of protons	4	19	17	11	1
Number of neutrons	5	20	18	12	0
Number of electrons	4	19	17	11	1
Name of element					

1. In the nucleus of a potassium atom there are 19 protons and 20 neutrons.

a) What is the mass number of potassium?

b) What is the atomic number of potassium?

c) How many electrons does a neutral atom of potassium contain?

d) Why is an atom of potassium neutral?

2. a) The letters A, B, C, D, E, F and G below represent seven different elements.

For each one write down (i) their atomic number (ii) their mass number (iii) the number of protons and (iv) the number of neutrons in one atom (A, B, C, D, E, F, G are not their chemical symbols).

	$^{12}_6\text{A}$	^9_4B	$^{19}_9\text{C}$	$^{11}_5\text{D}$	$^{28}_{14}\text{E}$	$^{40}_{18}\text{F}$	$^{35}_{17}\text{G}$
(i) Atomic No.							
(ii) Mass No.							
(iii) No. of Protons							
(iv) No. of Neutrons							

b) Use a periodic table to identify the elements, A, B, C, D, E, F and G.

A = B = C = D =
 E = F = G =

c) Explain what is meant by:

(i) Atomic number:

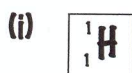
(ii) Mass number:

3. Complete the following table. The first one has been done for you.

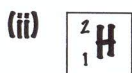
	$^{14}_7\text{N}$	$^{197}_{79}\text{Au}$	$^{235}_{92}\text{U}$ Ca	$^{84}_{36}$	226 Fe
No. of Protons	7			20			26
No. of Neutrons	7			20		34	30
No. of Electrons	7					88	
Element	Nitrogen				Krypton		

4. a) What do we mean by the term ISOTOPE?

The following show symbol representations of two isotopes of hydrogen.



b) How do we know that they are isotopes of HYDROGEN?



c) How many electrons would isotope (i) contain?

d) How many neutrons would isotope (ii) contain?