Instructions

THE ATOM

1. **Give the correct word to replace or complete the following statements. (spelling counts)**

a) The charge on a neutron.

b) Atoms of the same element that differ in the number of neutrons.

c) Electrons in the outermost energy level of an atom.

d) The number of protons in the nucleus of the atom.

e) That electrons would rather be in a subshell on their own than share a subshell, is known as
Rule.

f) Pauli's Exclusion Principle states that two   can only occupy the same   provided that they have opposite

g) Where the mass of the atom is concentrated.

2. Choose the correct word to make the statement true.

a) Electrons have a   charge and are found   the nucleus

b)   are the lightest atomic particles

c) Protons have a   charge

d) Atoms with the same atomic number but different mass number are referred to as

3. AMU AND RAM

a) Which element do scientists use as the standard to determine atomic mass units ?

b) How many times heavier is the carbon atom relative to the hydrogen atom?

c) Complete the table of relative atomic masses of the following elements

element (symbol)	ram
	4
lithium	
chlorine	
	20
(Cu)	

d) Complete the table of relative atomic masses of the following compounds

compound	ram
H_2O	
carbon dioxide	
sucrose($C_{12}H_{22}O_{11}$)	
magnesium sulphate	
lead (II) nitrate	
copper (II) chloride	

4. Complete the following table. Refer to a Periodic Table

element	symbol	A	no of neutrons	Z	no of electrons
				6	
	Ni				
					26
potassium					
		80			

5. Complete the table of electrons.

element	electron configuration	no of core electrons	no of valence electrons
magnesium			
Cl			
oxide			
S^{2-}			

6. Isotope calculations

a) Neon occurs in three isotopic forms in nature.

The percentage abundance of each isotope is as follows:

Ne-20 (90.92 %)   Ne-21 (0,26 %)   Ne-22 (8,82 %)

Calculate the relative atomic mass (RAM) of Neon.

$$= \frac{(\quad x\ 20)}{(100)} + \frac{(0,26\ x\quad)}{\quad} +$$

RAM =   + (1,9404)

RAM =   (correct to three decimal places)

b) Bromine has two isotopes : Br- 79 and Br – 81. Both exist
in equal amounts. Calculate the relative atomic mass of
bromine.

$$= \frac{(\quad x \quad)}{\quad} + \frac{(\quad x \quad)}{\quad}$$

RAM =

RAM =