



# Year 10 Science

End of Unit  
25 marks

## The Periodic Table

**Instructions:** 1. Answer all questions on this paper.  
2. A copy of the periodic table is on page 3.

Date \_\_\_\_\_

Name \_\_\_\_\_ Class \_\_\_\_\_

1 What is an element? \_\_\_\_\_  
\_\_\_\_\_ (1)

2 An atom has an atomic number of 18. How many protons? \_\_\_\_\_ (1)

How many electrons? \_\_\_\_\_ (1)

3 Draw a sketch of the electron configuration of the atoms of each of the following elements: (1 each)

a) Neon (Atomic number = 10)

b) Sulphur (Atomic number = 16)

c) Which of the above elements would you expect to be unreactive? Why? (1)

\_\_\_\_\_  
\_\_\_\_\_

4 For potassium,

a) How many protons?

b) How many electrons?

c) What is the average number of neutrons?

Atomic mass number →

Atomic number →

39.098
K
Potassium
19

(1 each)

5 Complete the following table (3)

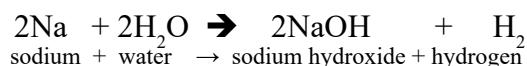
S <sup>2-</sup>	Lost 2 electrons
Al <sup>3+</sup>	Gained 3 electrons
Na <sup>+</sup>	
Mg <sup>2+</sup>	
Cl <sup>-</sup>	

6 Why are the group 1 - Alkali metals so reactive? (1)

\_\_\_\_\_  
\_\_\_\_\_



- 7 Elements in the same group, column, tend to have similar reactions. Given the following equation for the reaction of sodium with water, write the equation for the reaction of potassium with water. (2)

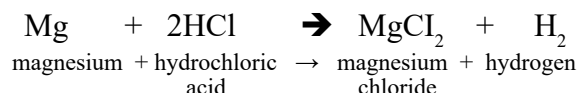


- 8 Why are the group 2 - The alkaline earths not as reactive as the group 1 metals? (1)

---

---

- 9 Elements in the same group, column, tend to have similar reactions. Given the following equation for the reaction of magnesium with hydrochloric acid, write the equation for the reaction of calcium with hydrochloric acid. (2)

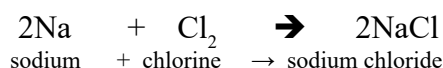


- 10 Why are the group 17 - The halogens the most reactive of the non-metal groups? (1)

---

---

- 11 Elements in the same group, column, tend to have similar reactions. Given the following equation for the reaction of the alkali metal sodium with the halogen chlorine to form the salt sodium chloride, write the equation for the reaction of the alkali metal potassium with the halogen bromine (2)

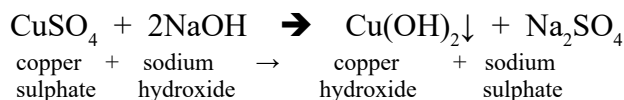


- 12 Why are the groups 3 to 12 - The transition metals good conductors of heat and electricity (1)

---

---

- 13 Elements in the same group, column, tend to have similar reactions. Given the following example, write the equation for the reaction of nickel sulphate with sodium hydroxide. (2)



- 14 Why are the groups 18 - The noble gases chemically unreactive? (1)

---

---

Did you find your silly mistakes?



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Ti	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 R	115 Uup	116 Lv	117 Uus	118 Uuo

**Periodic Table of the Elements**

79  
Au

← Atomic number  
← Symbol

Metal
  Non-Metal

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr