



# THE PERIODIC TABLE

Period 1 2 3 4 5 6 7 0 Group

Period

1	H	1
	Hydrogen	

1	2	3	4	5	6	7	0																										
1	Li Lithium 3	Be Beryllium 4					He Helium 2																										
2	Na Sodium 11	Mg Magnesium 12					F Fluorine 9	Ne Neon 10																									
3	K Potassium 19	Ca Calcium 20	Sc Scandium 21				Cl Chlorine 17	Ar Argon 18																									
4	Rb Rubidium 37	Sr Strontium 38	Y Yttrium 39	Zr Zirconium 40	Nb Niobium 41	Mo Molybdenum 42	Tc Technetium 43	Ru Ruthenium 44	Rh Rhodium 45	Pd Palladium 46	Ag Silver 47	Cu Copper 63.5	Ni Nickel 58.7	Co Cobalt 58.9	Fe Iron 55.8	Mn Manganese 54.9	Cr Chromium 52.0	V Vanadium 50.9	Ti Titanium 47.9	Sc Scandium 44.9													
5	Cs Caesium 55	Ba Barium 56	La Lanthanum 57	Ce Cerium 58	Pr Praseodymium 59	Nd Neodymium 60	Pm Promethium 61	Sm Samarium 62	Eu Europium 63	Gd Gadolinium 64	Tb Terbium 65	Dy Dysprosium 66	Ho Holmium 67	Er Erbium 68	Tm Thulium 69	Yb Ytterbium 70	Lu Lutetium 71	Hf Hafnium 72	Ta Tantalum 73	W Tungsten 74	Re Rhenium 75	Os Osmium 76	Ir Iridium 77	Pt Platinum 78	Au Gold 79	Hg Mercury 80	Cd Cadmium 112	In Indium 115	Sn Tin 119	Sb Antimony 122	Te Tellurium 128	I Iodine 127	Xe Xenon 131
6	Fr Francium 87	Ra Radium 88	Ac Actinium 89	Th Thorium 90	Pa Protactinium 91	U Uranium 92	Np Neptunium 93	Pu Plutonium 94	Am Americium 95	Cm Curium 96	Bk Berkelium 97	Cf Californium 98	Es Einsteinium 99	Fm Fermium 100	Mendelevium 101	Nobelium 102	Lr Lawrencium 103	Rf Rutherfordium 104	Db Dubnium 105	Sg Seaborgium 106	Bh Bohrium 107	Hs Hassium 108	Mt Meitnerium 109	Ds Darmstadtium 110	Rg Roentgenium 111	Cn Copernicium 112	Nh Nihonium 113	Fl Flerovium 114	Mc Moscovium 115	Lv Livermorium 116	Ts Tennessine 117	Og Oganesson 118	
7	Fr Francium 87	Ra Radium 88	Ac Actinium 89	Th Thorium 90	Pa Protactinium 91	U Uranium 92	Np Neptunium 93	Pu Plutonium 94	Am Americium 95	Cm Curium 96	Bk Berkelium 97	Cf Californium 98	Es Einsteinium 99	Fm Fermium 100	Mendelevium 101	Nobelium 102	Lr Lawrencium 103	Rf Rutherfordium 104	Db Dubnium 105	Sg Seaborgium 106	Bh Bohrium 107	Hs Hassium 108	Mt Meitnerium 109	Ds Darmstadtium 110	Rg Roentgenium 111	Cn Copernicium 112	Nh Nihonium 113	Fl Flerovium 114	Mc Moscovium 115	Lv Livermorium 116	Ts Tennessine 117	Og Oganesson 118	

**Key**

Relative atomic mass
Symbol
Name
Atomic number



Leave  
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**Answer ALL the questions. Write your answers in the spaces provided.**

1. Draw a straight line from each gas to the test used to identify it.

**gas**

**test used to identify gas**

oxygen

turns potassium dichromate  
solution from orange to green

carbon dioxide

relights a glowing splint

hydrogen

turns limewater milky

sulphur dioxide

when lit, burns with a squeaky pop

Q1

(Total 4 marks)



2. (a) Carol is making the insoluble salt zinc carbonate. She has solutions of the following soluble salts available.

- lead nitrate**
- sodium carbonate**
- sodium sulphate**
- zinc sulphate**

(i) Which **two** of these salt solutions must she mix to produce a sample of the insoluble salt zinc carbonate?

.....  
 and .....

**(2)**

(ii) How should she separate the insoluble salt from the solution?

.....

**(1)**

(b) John is making the soluble salt sodium chloride by titration of sodium hydroxide solution with hydrochloric acid.

To carry out his experiment, John uses a burette, a pipette and an indicator solution.

Draw a straight line from each of these to its use in this experiment.

**equipment**

**use**

burette

used to measure exactly 25 cm<sup>3</sup> of sodium hydroxide solution

indicator solution

used to measure the volume of hydrochloric acid required

pipette

used to show the end point when the required volume of hydrochloric acid has been added

**(3)**

**Q2**

**(Total 6 marks)**



3. (a) Use words from the box to complete the sentences.

**aluminium      coke      iron      oxygen      slag      steel**

(i) The metal produced in a blast furnace is .....

(ii) The metal from the blast furnace is converted into .....  
by the use of .....

(iii) A metal with important uses due to its low density  
is ..... **(4)**

(b) Metals are often used as alloys.

(i) What is an alloy?  
..... **(1)**

(ii) What important change in the properties of aluminium occurs when it is alloyed?  
..... **(1)**

(c) Aluminium is often anodised.

(i) How does aluminium change when it is anodised?  
..... **(1)**

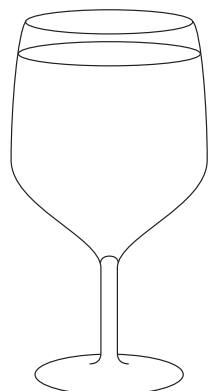
(ii) Give one advantage of anodising aluminium.  
..... **(1)**

**(Total 8 marks)**

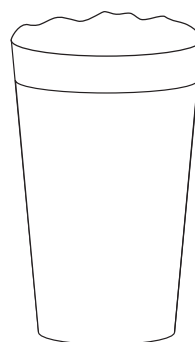
**Q3**



4. Two alcoholic drinks are shown.



large glass of red wine  
250 cm<sup>3</sup>



half a pint of beer  
285 cm<sup>3</sup>

- (a) These two drinks have approximately the same volume but the large glass of red wine contains twice as much ethanol as the half pint of beer.

Explain why.

.....  
.....  
(1)

- (b) Much research has been carried out into the effects of alcoholic drinks.

Where is information on recent research likely to be found.

.....  
(1)

- (c) Alcoholic drinks contain ethanol, C<sub>2</sub>H<sub>5</sub>OH.

Name the **two** compounds produced when ethanol burns completely in air.

..... and .....  
(2)

- (d) If wine is left open to the air it slowly turns to vinegar. This is caused by the formation of ethanoic acid, CH<sub>3</sub>COOH, in the wine.

Explain how the ethanoic acid forms.


.....  
.....  
(2)

(Total 6 marks)

Q4



5. The diagram shows the label from a bottle of mineral water.

	<b>OFFICIAL ANALYSIS</b>			
	mg in one litre			
	Ca <sup>2+</sup>	55	HCO <sub>3</sub> <sup>-</sup>	248
	Mg <sup>2+</sup>	19	Cl <sup>-</sup>	42
	K <sup>+</sup>	1	SO <sub>4</sub> <sup>2-</sup>	23
Na <sup>+</sup>	24			

(a) This water is hard.

Describe what you would see if a sample of this water was shaken with soap solution.



.....

.....

.....

.....

(3)

(b) Describe a test that John can carry out to confirm the presence of chloride ions in the water.

.....

.....

.....

.....

(2)

(c) John evaporated some of the water and obtained the dissolved salts as a solid residue. He attempted to identify the metal ions using a flame test on the residue.

Explain why the metal ions cannot be identified in this way.

.....

.....

.....

(1)

(Total 6 marks)

Q5

**TOTAL FOR PAPER: 30 MARKS**

**END**



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