Atomic structure and the periodic table

Answers

GCSE science knowledge recall

This topic online

Q	Answer	Remember
1	element	There are about 100 elements, each with its own symbol in the periodic table.
2	compound	In a mixture the substances are not chemically joined, so they can be separated physically.
3	filtration	The solid left in the filter paper is the residue; the liquid that passes through is the filtrate.
4	simple distillation	Crystallisation would keep the salt instead; distillation keeps the water.
5	fractional distillation	A fractionating column lets each liquid condense at a different height.
6	chromatography	Dyes that dissolve better in the solvent travel further up the paper.
7	plum pudding	It came after the discovery of the electron and before the nuclear model.
8	alpha particles	Most went straight through, so the atom is mostly empty space; a few bounced back off a tiny dense nucleus.
9	Chadwick	Bohr had already placed the electrons in shells at fixed distances from the nucleus.
10	+1	Proton +1, neutron 0, electron -1.
11	electron	Almost all of an atom's mass is in the nucleus.
12	0.1	The nucleus is about 10 000 times smaller than the whole atom.
13	mass number	Mass number is the bigger number on the symbol; atomic number is the smaller one.
14	isotopes	Isotopes react the same way because they have the same number of electrons.
15	12	Neutrons = mass number - atomic number.
16	2,8,1	The single outer electron puts sodium in Group 1.
17	Mendeleev	When gallium and germanium were found, they fitted his gaps - strong evidence he was right.
18	positive	Metals lose electrons; non-metals gain them to form negative ions.
19	noble gases	Their boiling points increase going down the group.
20	Their atoms have a full outer shell of electrons, which is stable, so they do not easily gain, lose or share electrons.	Helium has only 2 outer electrons, but that still fills its only shell.

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Q	Answer	Remember
21	alkali metals	They react with water to make an alkaline solution of the metal hydroxide.
22	hydrogen	Test it with a lighted splint - it burns with a squeaky pop.
23	increases	The outer electron is further from the nucleus, so it is lost more easily.
24	halogens	They exist as molecules made of pairs of atoms, such as Cl_2.
25	green	Bromine is a red-brown liquid; iodine is a grey solid that gives a purple vapour.
26	chlorine	Reactivity falls down Group 7, so a more reactive halogen pushes a less reactive one out of its compound.
27	coloured	Copper sulfate is blue and iron(III) compounds are orange-brown.
28	higher	Transition metals are also harder, stronger and denser than the alkali metals.
29	2+ and 3+	Many transition metals form ions with different charges, unlike Group 1 metals.
30	iron	Transition metals and their compounds are useful catalysts; nickel is used to harden vegetable oils.

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