ATOMS, ELEMENTS & COMPOUNDS 2

MARK SCHEME

Q1.

Question	Answer	Extra information	Marks
A	1		
B	4		
C	3		
D	2		
Total marks			4

Q2.

Question	Answer	Extra information	Marks
(a)	hydrogen has one proton whereas helium has two protons hydrogen has one electron whereas helium has two electrons hydrogen has no neutrons or helium has two neutrons	accept numbers for words accept hydrogen only has one proton ignore references to groups accept hydrogen only has one electron allow helium has a full outer shell (of electrons) if no other mark awarded, allow helium has more electrons / protons / neutrons for 1 mark	1 1 1
(b)	2 electrons on first shell **and** 8 electrons on outer shell		1
Total marks			4

Q3.

Question	Answer	Extra information	Marks
(a)	2,4	allow electrons in any position on correct shells	1
(b)	(electron) 79 neutron 118	allow phonetic spelling	1 1 1
Total marks			4

Q4.

Question	Answer	Extra information	Marks
(a)	protons (and) neutrons	both needed for 1 mark ignore p / + and n / 0 do not accept electrons	1
(b)	because the number of protons is equal to the number of electrons	allow protons and electrons balance / cancel out allow positive / + and negative / - balance / cancel out	1
(c)	because atom A has a full highest energy level or full outer shell or because atom A has a stable arrangement of electrons	it = atom A allow all the shells are full or no incomplete shell allow because atom A is in Group 0 / a noble gas	1
(d)	(atom) B / lithium / Li (and) (atom) C / sodium / Na because they have the same number/one outer electron(s)	both needed for 1 mark linked to answer for first mark accept because both need to lose one / an electron allow because (atoms) B and C are in Group 1 / the same group / are alkali metals	1 1
Total marks			5

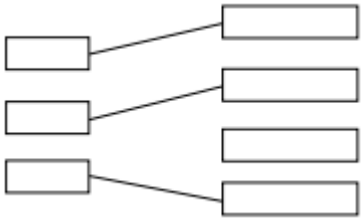
Q5.

Question	Answer	Extra information	Marks
	2,8,3	any sensible symbol can be used to represent an electron	1
Total marks			1

Q6.

Question	Answer	Extra information	Marks
A	2		
B	3		
C	1		
D	4		
Total marks			4

Q7.

Question	Answer	Extra information	Marks
(a)(i)	nucleus		1
(ii)	an energy level (shell)		1
(b)			1 1 1
(c)	2%	accept two % or two percent	1
(d)	10/ten		1
Total marks			7

Q8.

Question	Answer	Extra information	Marks
(a)(i)	nucleus		1
(ii)	protons		1
(b)	protons / + / positive electrons / – / negative	both words needed in any order for 1 mark	1
(c)	nitrogen	allow N or N_2	1
(d)	B and C (both) have one electron or same number of electrons in the outer energy level / shell	both letters needed in any order for 1 mark allow Li and Na allow both are in Group 1 allow both are alkali metals allow both can lose only one electron or become +1 ions allow this mark if no letters given in boxes	1 1
Total marks			6

Q9.

Question	Answer	Extra information	Marks
(a)	made of one sort of atom	accept it is in the periodic table accept it only has lithium atoms	1
(b)	nucleus labelled correctly electron labelled correctly		1 1
Total marks			3