MARK SCHEME – The Periodic Table

Year 9 Chemistry | Total: 45 marks

A semicolon (;) separates marking points. **allow** = accept this answer; **do not allow** = do not give credit. Accept any other correct scientific answer.

Q	Answer	Marks	Guidance
1	atomic number; group; period; left; right	5	In this order. mass and colour not used
2(a)	A and E	1	both needed
2(b)	C	1	
2(c)	B	1	
2(d)	C and D	1	both needed
2(e)	E	1	
2(f)	A, D and E	1	all three needed, no extras
3	Conducts electricity: metal; Dull and brittle: non-metal; Shiny and bendable: metal; Many are gases: non-metal	2	All 4 correct = 2 marks; 2 or 3 correct = 1 mark
4(a)	potassium, sodium, lithium	1	
4(b)	reactivity increases down the group	1	allow: gets more reactive going down
4(c)	reacts even more vigorously / faster than potassium (may explode)	1	allow: catches fire / violent reaction
4(d)	sodium hydroxide; hydrogen	2	either order
4(e)	they react with water to form an alkaline solution (hydroxide)	1	allow: their hydroxides are alkalis
4(f)	to stop them reacting with oxygen / water (vapour) in the air	1	
5(a)	melting point decreases down the group	1	
5(b)	any value from 20 to 35 °C	1	actual value is about 28 °C
5(c)	any two: safety screen; safety glasses / goggles; use a very small piece; use tongs / do not touch with fingers; students stand well back	2	1 mark each
5(d)	1 (one)	1	
6(a)	gas to liquid to solid (they become solid going down)	1	allow: melting / boiling points increase
6(b)	solid; black / very dark (grey-black)	2	1 mark for state, 1 mark for colour
6(c)	reactivity decreases down the group	1	
7(a)	chlorine is more reactive than bromine; so it displaces bromine (which is orange) from potassium bromide	2	
7(b)	potassium chloride; bromine	2	either order
7(c)	no (reaction); iodine is less reactive than bromine so cannot displace it	2	no mark for "no" without a reason
8(a)	they have a full outer shell (of electrons)	1	allow: stable arrangement of electrons

8(b)	less dense than air (so the balloon floats); unreactive / not flammable (so it is safe)	2	
8(c)	argon is unreactive so the hot filament does not react / burn	1	
9(a)	Group 1	1	allow: alkali metals
9(b)	any two: soft / can be cut; reacts with water to make hydrogen; forms an alkaline solution; low melting point	2	
9(c)	for elements that had not been discovered yet	1	allow: so that elements with similar properties lined up in groups
9(d)	his predictions (for the gap) were correct; this showed his table / pattern was right and helped others accept it	2	
	Total	**45**	