Groups 1 and 7 Revision PPQu Mark Scheme

Q1.

Question number		Answer	Notes	Marks
a		C (good electrical conductor... and basic oxide)		1
b	i	effervescence / fizzing / bubbles sodium moves / darts / floats sodium melts / forms a ball sodium becomes smaller / disappears white trail	Accept gas given off /gas evolved / gas formed / gas produced Accept wrongly identified gas Accept equivalents such as shoots/skims Accept dissolves Ignore white precipitate Do not apply list principle Assume that it = sodium Ignore flames/sparks Any two for 1 each	2
	ii	l aq g		1 1
c		hydrogen/gas/potassium burns / flame / fire / sparks	Accept explodes Ignore references to more vigorous reaction / more fizzing	1
d		(all have) 1 electron in outer shell	Accept (all have) same number of outer electrons	1

Q2.

Question number				Answer	Notes	Marks
	a	i		C		1
		ii		B		1
	b			fluorine / F_2	Accept F	1
	c	i		hydrogen chloride		1
		ii		hydrochloric (acid)		1
		iii		HCl		1
					Total	**6**

Q3.

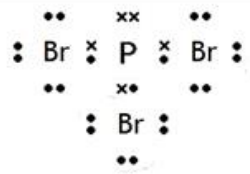
Qu	Answer	Notes	Marks
3(a)	bubbles / fizzing / effervescence sodium moves/ darts/ floats sodium gets smaller / disappeard Sodium melts / forms a ball white trail	Accept gas given off/ gas evolved/formed/ produced ACCEPT dissolves	2
3(b)	lithium		1
3(c)(i)	Hydrogen / H_2	Ignore H	1
(ii)	K^+		1
		Total marks for question	**5**

Q4.

Question number	Answer	Notes	Marks
(a) i	gas / (g) / g	Accept equivalents such as gaseous / vapour Ignore colours	1
ii	darker / dark grey	Accept black Ignore references to states Ignore more intense Reject reference to any other colours	1
(b) i	no reaction (possible) / no displacement OR halogens do not react with their own halide ions	Accept no change Ignore references to lithium chloride containing chlorine / already reacted / OWTTE	1
ii	iodine/it is less reactive than bromine / bromine more reactive than iodine	Accept correct references to positions in (re)activity series Both halogens must be mentioned, except assume it refers to iodine Reject –ide endings Accept symbols and formulae Ignore references to only one element, e.g. iodine is unreactive	1
iii	iodine	Reject any comparison involving sodium Ignore references to states Ignore I and I_2	1
iv	cross in box D (bromine displaces iodine)		1
v	$2KCl + Br_2$	Either order Penalise incorrect symbols/numbers / unconventional formulae in this part, e.g. CL, br, Br^2, ClK	1
		Total	**7**

Extension Q5.

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>a</td><td>
<table>
<tr><th>Halogen</th><th>Colour</th><th>Physical state</th></tr>
<tr><td>bromine</td><td></td><td>liquid</td></tr>
<tr><td>iodine</td><td>black</td><td></td></tr>
</table>
</td><td>M1 (bromine) liquid / (l)

M2 (iodine) black
allow (dark) grey</td><td>2</td></tr>
<tr><td>b</td><td>  </td><td>M1 three bonding pairs of electrons correct

M2 rest of electrons correct

Accept any combination of dots and crosses
Ignore circles</td><td>2</td></tr>
<tr><td>c</td><td>$PBr_3 + 3H_2O \rightarrow 3HBr + H_3PO_3$</td><td>M1 all formulae correct

M2 balanced
M2 DEP on M1</td><td>2</td></tr>
<tr><td colspan="4">Total 6 marks</td></tr>
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