

IGCSE Double Award Science (Chemistry) 4437/2F

Mark Scheme (Results)

November 2008

IGCSE

IGCSE Double Award Science - Chemistry (4437/2F)

The following acronyms are used

owtte or words to that effect

ecf error carried forward

dop dependent on previous

nwn no working necessary

Question Number	Correct Answer	Notes	Mark
1 (a)	Lithium/Li		(1)

Question Number	Correct Answer	Notes	Mark
1 (b)	Argon/Ar		(1)

Question Number	Correct Answer	Notes	Mark
1 (c)	Name or symbol of any element in group 1 / hydrogen / H		(1)

Question Number	Correct Answer	Notes	Mark
1 (d)	Names or symbols of two elements in the same group (1 to 0)		(1)

Question Number	Correct Answer	Notes	Mark
1 (e)	Name or symbol of any element in Group 1 or 2, excluding Be		(1)

(Total 5 marks)

Question Number	Correct Answer	Notes	Mark
2 (a) (i)	neutron		(1)

Question Number	Correct Answer	Notes	Mark
2 (a) (ii)	electron		(1)

Question Number	Correct Answer	Notes	Mark
2 (a) (iii)	electron		(1)

Question Number	Correct Answer	Notes	Mark
2 (b) (i)	isotopes		(1)

Question Number	Correct Answer	Notes	Mark
2 (b) (ii)	3 3 3 4	last two may be either way round	1 1 1 1 (4)

(Total 8 marks)

Question Number	Correct Answer	Notes	Mark
3 (a)	white (1) to blue (1) hydrated (accept 'hydrous') copper ((II)) sulphate	Ignore pale/dark	2 1 (3)

Question Number	Correct Answer	Notes	Mark
3 (b)	white (accept grey) (1) Dehydration / becomes anhydrous		1 1 (2)

(Total 5 marks)

Question Number	Correct Answer	Notes	Mark
4 (a)	Name of metal Use of metal Property on which that use depends aluminium aircraft bodies low density/resists corrosion copper water pipes resists corrosion iron railway tracks strong 1 mark per correct use 1 mark per correct property for use chosen - property is cq on the use.		(6)

Question Number	Correct Answer	Notes	Mark
4 (b) (i)	reacts with oxygen/forms carbon dioxide		(1)

Question Number	Correct Answer	Notes	Mark
4 (b) (ii)	bottom box		(1)

Question Number	Correct Answer	Notes	Mark
4 (c) (i)	carbon dioxide + iron (either order)		(1)

Question Number	Correct Answer	Notes	Mark
4 (c) (ii)	(aluminium) too reactive/more reactive than carbon		(1)

(Total 10 marks)

Question Number	Correct Answer	Notes	Mark
5 (a)	allotropes carbon		1 1 (2)

Question Number	Correct Answer	Notes	Mark
5 (b) (i)	middle box middle box (dep on M1)		1 1 (2)

Question Number	Correct Answer	Notes	Mark
5 (b) (ii)	5		(1)

Question Number	Correct Answer	Notes	Mark
5 (b) (iii)	low (only) weak molecules (only)	All INDEP	1 1 1 (3)

(Total 8 marks)

Question Number	Correct Answer	Notes	Mark
6 (a) (i)	C/ethene/C ₂ H ₄ /E/propene/C ₃ H ₆		(1)

Question Number	Correct Answer	Notes	Mark
6 (a) (ii)	C ₂ H ₄		(1)

Question Number	Correct Answer	Notes	Mark
6 (a) (iii)	C _n H _{2n+2}		(1)

Question Number	Correct Answer	Notes	Mark
6 (b) (i)	Correct displayed formula = 2 if incorrect, then give 1 mark if structure drawn has 4 carbon atoms OR if it is a saturated hydrocarbon with correct valencies of all atoms.		(2)

Question Number	Correct Answer	Notes	Mark
6 (b) (ii)	no change/remains orange or brown/no reaction butane has no C=C / double bond / is saturated		1 1 (2)

Question Number	Correct Answer	Notes	Mark
6 (c) (i)	film		(1)

Question Number	Correct Answer	Notes	Mark
6 (c) (ii)	flexible/does not conduct (electricity)	Allow poor conductor of electricity	(1)

(Total 9 marks)

Question Number	Correct Answer	Notes	Mark
7 (a) (i)	hydrogen peroxide → water + oxygen		(1)

Question Number	Correct Answer	Notes	Mark
7 (a) (ii)	catalyst		(1)

Question Number	Correct Answer	Notes	Mark
7 (b)	over water / displacement of air with downward delivery / upward displacement of air. Could be shown on a diagram.	Accept "through water".	(1)

Question Number	Correct Answer	Notes	Mark
7 (c)	relights a glowing splint	Reject "glows more brightly"	(1)

Question Number	Correct Answer	Notes	Mark
7 (d) (i)	Red (ignore pale/dark), crimson / scarlet	Reject references to orange / yellow / pink	(1)

Question Number	Correct Answer	Notes	Mark
7 (d) (ii)	electron transfer from lithium to oxygen Li atoms each lose one electron and O atom gains two electrons	Covalent / sharing scores zero	1 1 1 (3)

Question Number	Correct Answer	Notes	Mark
7 (d) (iii)	Li ⁺ O ²⁻	Both correct but reversed scores 1	1 1 (2)

(Total 10 marks)

Question Number	Correct Answer	Notes	Mark
8 (a)	Brown / red brown (reject "light", accept "dark")	Reject red alone or reference to orange	1
	Grey (reject "light", accept "dark")/ black	Reject purple or violet	1 (2)

Question Number	Correct Answer	Notes	Mark
8 (b) (i)	diffusion		(1)

Question Number	Correct Answer	Notes	Mark
8 (b) (ii)	$\text{Br}_2(\text{l}) \rightarrow \text{Br}_2(\text{g})$ <i>Reactants = 1, products = 1</i>		(2)

Question Number	Correct Answer	Notes	Mark
8 (b) (iii)	moving (faster) further apart owtte		1
			1 (2)

Question Number	Correct Answer	Notes	Mark
8 (c) (i)	bromine + hydrogen \rightarrow hydrogen bromide	Ignore "gas"	(1)

Question Number	Correct Answer	Notes	Mark
8 (c) (ii)	hydrobromic (acid)		(1)

(Total 9 marks)

