

IGCSE Chemistry 4335 1F Mark Scheme (Results) Summer 2008

IGCSE

IGCSE Chemistry 4335 1F

IGCSE CHEMISTRY 4335-1F MARK SCHEME

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
1 (a)	second box			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
1 (b)(i)	top box			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
1 (b)(ii)	middle box			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
1 (c)(i)	made up of/contains only one type of atom or something that cannot be broken down by chemical means			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
1 (c)(ii)	three/3			(1)

(Total 5 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (a)(i)	magnesium			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (a)(ii)	gold			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (b)(i)	magnesium/zinc is more reactive than iron OR magnesium displaces iron			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (b)(ii)	zinc sulphate AND iron			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (c)(i)	bulb / ammeter/buzzer			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (c)(ii)	ions			(1)

(Total 6 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
3 (a)(i)	lighted spill pop (dependent on correct test)			1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
3 (a)(ii)	sodium hydroxide			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
3 (a)(iii)	green blue/purple			1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
3 (b)	loses gains (give one mark if the first two are the wrong way round) high strong (dependent on having high correct)			1 1 1 1 (4)

(Total 9 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (a)(i)	bitumen			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (a)(ii)	refinery gases			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (a)(iii)	gasoline			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (b)	kerosene diesel/gasoline/refinery gases bitumen			1 1 1 (3)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (c)(i)	oxygen on left water on right carbon dioxide on right			1 1 1 (3)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (c)(ii)	carbon monoxide			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (c)(iii)	carbon			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (d)(i)	giant momomers			1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4 (d)(ii)	middle box			(1)

(Total 14 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (a)(i)	fifth / last box			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (a)(ii)	A E C D – fully correct gets three marks. If not fully correct then (to a maximum of two): both A and E before C – 1 mark D directly after C – 1 mark E directly before C – 1 mark			(3)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (a)(iii)	heat / warm			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (b)(i)	yellow			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (b)(ii)	red			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (b)(iii)	neutralisation			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
5 (b)(iv)	water			(1)

(Total 9 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (a)	first box: nitrogen second box: oxygen third box: argon; carbon dioxide. one mark per gas in correct box. If gas used twice then no mark for that gas.			(4)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (b)(i)	black			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (b)(ii)	CuO			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (c)(i)	top box: hydrochloric acid bottom box: calcium carbonate			(2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (c)(ii)	limewater / calcium hydroxide (solution)			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (c)(iii)	fire extinguisher / fizzy drinks / dry ice as coolant or stage effects			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (d)(i)	carbon			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (d)(ii)	magnesium			(1)

(Total 12 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(i)	electrolysis			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(ii)	graphite / carbon			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(iii)	- on left and + on right			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(iv)	aluminium oxide / alumina cryolite	accept correct formulae ignore bauxite		1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(v)	electricity (ignore qualifications) / electrical energy (not energy alone)	Anode/ positive electrode replacement	Cathode /electrode replacement	(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (b)(i)	oxygen			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (b)(ii)	•carbon dioxide / carbon monoxide •graphite/carbon/electrode oxidised/burned/reacts with oxygen	accept correct formulae (ignore lower case)	lists equation	1 1 (2)

(Total 9 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)(i)	Any two from: •same or similar chemical properties / same functional group • gradation in physical properties •neighbouring/successive members differ by CH₂	Gradation of specified physical property (eg: boiling point/bp(t), melting point/mp(t), viscosity)	NOT a specified chemical property different / same physical properties	(2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)(ii)	alkene			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)(iii)	C _n H _{2n}	Any other letter in place of "n"		(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (b)(i)	•(H) one electron shown •(C) two electrons in first shell and four in second shell	Accept any symbol for electrons.	Electrons on nucleus	1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (b)(ii)	•all five atoms and four shared pairs of electrons •no extra outer electrons.	IGNORE inner electrons		1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (b)(iii)	tetrahedral			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (c)(i)	•(compounds with) same molecular formula •(but) different structural formulae / displayed formula/structure / atoms arranged differently (same) elements = 0 marks	Mark independently	same chemical formula Reject substances	1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (c)(ii)	Correct structures of butane and methylpropane. ALL bonds shown Penalise sticks with missing H once only			1 1 (2)

(Total 13 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (a)(i)	2			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (a)(ii)	2.8.2			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (b)(i)	any two from •effervescence / fizzing / bubbles • cloudiness / white precipitate /milky / white suspension •Ca get smaller / disappears (ignore dissolves). •Ca moves up and down	Ignore gas made ignore floats/moves	List	(2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (b)(ii)	Ca(OH) ₂			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (b)(iii)	•blue •alkali / OH⁻ / hydroxide / pH >7 (ignore base) •stated pH value in range 8-14		purple	1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (c)(i)	•grey / silver(y) •white			1 1 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (c)(ii)	any two from •over /through water / downward displacement of water • (gas) syringe •upward delivery / downward displacement of air	a description of this suitable diagrams	gas cylinder	(2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9 (c)(iii)	hydrogen + oxygen → water / steam	ignore heat	formulae	(1)

(Total 12 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (a)(i)	ammonia / NH ₃		Ammonium NH ₄	(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (a)(ii)	chloride / Cl ⁻		Chlorine Cl Cl ₂	(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (a)(iii)	copper(II) / Cu ²⁺ / copper / cupric	cupper	Copper(I) Cuprous Cu ⁺	(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (a)(iv)	iron(II) / Fe ²⁺ / ferrous		Fe ³⁺ Ferric Iron	(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (b)(i)	CuSO ₄ / copper((II)) sulphate			(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (b)(ii)	•KNO₃ / potassium nitrate •lilac (dependent on correct compound) OR •CuSO₄ / copper((II)) sulphate •green / blue-green (dependent on correct compound)	potassium/C pink copper/B	Purple blue	(2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (c)(i)	yellow precipitate/ppt/ppte	suspension		(1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (c)(ii)	$\text{AgNO}_3(\text{aq}) + \text{LiI}(\text{aq}) \rightarrow \text{AgI}(\text{s}) + \text{LiNO}_3(\text{aq})$ $\text{LiI}(\text{aq}) + \text{AgNO}_3(\text{aq})$ formulae of products state symbols of products (dependent on correct product formulae)	if all correct but balanced wrongly, award 2 marks		(3)

(Total 11 marks)

PAPER TOTAL 100 MARKS