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IGCSE DA Chemistry 4437 2F
Mark Scheme (Results)
Summer 2008

IGCSE

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4437-2F 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 can not 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)	word equation using metal in (i). Give mark for ANY equation of type: Metal + iron(()II()) sulphate → iron + metal sulphate do not penalise omission of (II) on left or inclusion of (II) on right			**(1)**

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (c)(i)	A has air/oxygen and water OR air/oxygen and water needed for rust B no air/oxygen C no water			**(3)**

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

(Total 8 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)	fith/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)(i)	electrolysis			**(1)**

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

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (a)(iii)	– on left and + on right			**(1)**

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

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

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
6 (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)**
				9

(Total 9 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(i)	Any two from: •same or similar chemical properties / same functional group • gradation in physical properties •neighbouring/successive members differ by CH_2	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
7 (a)(ii)	alkene			**(1)**

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (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
7 (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
7 (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
7 (c)(ii)	Correct structures of butane and methylpropane. ALL bonds shown Penalise sticks with missing H once only			**(2)**

(Total 11 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)(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
8 (a)(ii)	$Ca(OH)_2$			**(1)**

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)(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
8 (b)(i)	•grey / silver(y) •white			**1** **1** **(2)**

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

(Total 10 marks)

PAPER TOTAL 75 MARKS