

Mark Scheme (Results)

March 2011

GCSE

360Science

GCSE Additional Science
Structured Paper C2 (5018F/1F)

GCSE Chemistry
Structured Paper C2 (5038F/1F)

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5018F & 5038F Mark Scheme

Question Number	Answer	Allow	Reject/ Ignore	Mark
1(a)	100 cm ³ measuring cylinder ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
1(b)	cool the acid / make it more dilute / add water ;	Make the acid weaker	Ignore changes in amount of acid	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
1(c)	shorter / less time ;	(reaction is) faster /quicker		(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
2(a)(i)	carbon and hydrogen ;		Ignore C, H	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
2(a)(ii)	covalent bond ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
2(b)	exothermic / combustion /redox ;	oxidation / reduction	Ignore chemical / burning	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
2(c)	find alternative/renewable energy sources e.g. nuclear / wind / solar / tidal / wave / peat / biofuels / hydrogen etc ;	Use less fuels e.g. alternative transport Allow 'use alternative fuel' provided that a suitable example has been given	Ignore more (fossils fuels) to be found / use electricity	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(a)	mixture of metals ;	mixture of metal with a named suitable non-metal;		(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(b)	alloys are strong(er) / pure metals are weak(er) ;		To make the car 'look good' or similar	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(c) (i)	electron / electron shell ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(c) (ii)	27 ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(c) (iii)	no charge / 0 / zero / neutral ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
3(c) (iv)	(2).8.3 ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4(a)	diamond ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
4(b)(i)	(free) moving / delocalised / sea of electrons (between layers);			(1)

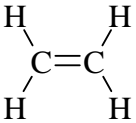
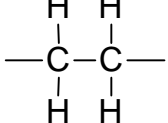
Question Number	Answer	Allow	Reject/ Ignore	Mark
4(b)(ii)	slippery / lubricating / high sublimation point / flaky / soft / brittle ;	any other suitable physical property / high melting point / high boiling point	Ignore layers (sliding) Ignore colours	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5(a)	ammonia + nitric acid → ammonium nitrate ;	$\text{NH}_3 + \text{HNO}_3 \rightarrow \text{NH}_4\text{NO}_3$ Allow =	Reject 'ammonium' on LHS Reject 'ammonia nitrate' on RHS Reject =	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5(b)	can get into water supplies / rivers / kill wildlife in rivers / encourages growth of algae / kills plants in river / eutrophication / contaminated drinking water ;	Allow 'water pollution'		(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5(c) (i)	nitrogen and hydrogen ;		Ignore symbols	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
5(c) (ii)	reaction is reversible / equilibrium ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6(a)	 ;  ; C ₃ H ₆ ; poly(propene) ;	Allow repeat unit based on any alternative alkene given in left hand box, but REJECT propene Allow C ₂ H ₃ CH ₃ etc. Allow polypropene	Reject repeat units without linking bonds Ignore brackets around repeating unit and 'n'	(4)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6 (b)	(Molecules) containing double bonds ;		Ignore spare/ free bonds	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6 (c)	turns (orange/ yellow/ brown to) colourless ;	Decolourise	Ignore clear, discoloured	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6 (d)	break down of (large) molecules / chains / hydrocarbons (into: smaller / more useful / shorter ones) ;			(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6 (e)	Any use of a plastic where it is an advantage to be BOTH waterproof AND colourless e.g. food bags / (clear) packaging / cling film / goggles / (shed) window (glazing) ;	Allow any use based on BOTH properties. Note: candidates do not have to recall uses, just suggest based on both properties so a use of other plastics can be credited e.g. fishing line – made of nylon but should be waterproof and colourless.	Reject glass Ignore plastic bags	(1)

Question Number	Answer	Allow	Reject/ Ignore	Mark
6 (f)	Any two from: <ol style="list-style-type: none"> 1. polymers do not rot /not biodegradable / persist ; 2. so landfill is quickly used up ; 3. harm animals ; 4. polymers cannot be recycled / wastes the material ; 		Ignore any gases etc produced by decomposition Ignore corrode and erode	(2)

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