

# Mark Scheme (Results)

November 2007

GCSE

360Science

GCSE Additional Science C2 (5018F/1F)

## Using the Mark Scheme

1. This mark scheme gives you;
  - \* an idea of the type of response expected
  - \* how individual marks are to be awarded
  - \* the total mark for each question
  - \* examples of responses that should not receive credit.
2. ; separates points for the award of each mark.
3. / means that the responses are **alternatives** and either answer should receive full credit.
4. () means that a phrase/word is not essential for the award of the mark but helps the examiner to get the sense of the expected answer.
5. Phrases/words in **bold** indicate that the meaning of the phrase/word is **essential** to the answer.
6. **OWTTE** (or words to that effect) and eq (equivalent) indicate that valid alternative answers (which have not been specified) are acceptable.
7. 'Ignore' means that this answer is not worth a mark but does not negate an additional correct response.
8. 'Reject' means that the answer is wrong and negates any additional correct response for that specific mark.
9. **ORA** (or reverse argument) indicates that the complete reverse is also valid for the award of marks.
10. ecf (error carried forward) means that a wrong answer given in an earlier part of a question is used correctly in answer to a later part of the same question.

## Marking

1. You must give a tick (in red) for every mark awarded. The tick must be placed on the script close to the answer. The total mark awarded for a question should be written in the box at the end of the question.
2. The total marks for a question should then transferred to the front of the script.
3. Suggestion/explanation questions should be marked correct even when the suggestion is contained within the explanation.
4. **Do not** award marks for repetition of the stem of the question.
5. Make sure that the answer makes sense. **Do not** give credit for correct words/phrases which are put together in a meaningless manner. Answers must be in the correct scientific context.

## Amplification

1. In calculations, full credit must be given for a bold, correct answer. If a numerical answer is incorrect, look at the working and award marks according to the mark scheme.
2. Consequential marking should be used in calculations. This is where a candidate's working is correct but is based upon a previous error. When consequential marks have been awarded write "ecf" next to the ticks.
3. If candidates use the mole in calculations they must be awarded full marks for a correct answer even though the term may not be on the syllabus at their level.
4. If candidates use chemical formulae instead of chemical names, credit can only be given if the formulae are correct.

Question Number	Answer	Mark
1 (a)	exothermic/polymerisation;	(1)
1 (b)	reaction faster/ lower temp required/ reduces activation energy;	(1)
1 (c)	<p><b>method</b></p> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 30%;">buried in landfill site</div> <div style="border: 1px solid black; padding: 5px; width: 30%;">many plastics are non-biodegradable</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 30%;">burned</div> <div style="border: 1px solid black; padding: 5px; width: 30%;">plastics must be collected and sorted</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 30%;">recycled</div> <div style="border: 1px solid black; padding: 5px; width: 30%;">some plastics burn to release toxic fumes</div> </div> <p>3 correct - 2 marks 1 or 2 correct - 1 mark</p>	(2)
1 (d)(i)	4;	(1)
1 (d)(i)	double bond (may be shown in diagram);	(1)
2 (a)	magnesium; mercury;	(2)
2 (b)	they have electrons free to move through the structure;	(1)
2 (c)(i)	2.8.2;	(1)
2 (c)(ii)	2;	(1)
3 (a) (i)	covalent;	(1)
3 (a) (ii)	strong bonds;	(1)
3 (b) (i)	conducts electricity;	(1)
3 (b) (ii)	layers can slide/weak forces between layers;	(1)
3 (c) (i)	polymer/plastic;	(1)
3 (c) (ii)	fame/ profits from sales/ uses for new molecules etc;	(1)

Question Number	Answer	Mark
4 (a)	zinc + hydrochloric acid → zinc chloride + hydrogen reactants; products; 4 formulae, full balanced equation;; otherwise no marks	(2)
4 (b) (i)	C;	(1)
4 (b) (ii)	most/more bubbles;	(1)
4 (b) (iii)	heat (acid)/ add catalyst/make solid into smaller pieces/OWTTE;	(1)
5 (a)	balancing; state symbols all g;	(2)
5 (b)	Any two from: 1. both forward and back reactions; 2. take place at the same time; 3. rates of reaction equal; 4. concentrations remain constant;  [Allow alternative wordings]	(2)
5 (c)	suitable advantage (eg replaces nutrients, improved crop yield); suitable disadvantage (eg can cause water pollution); [Allow grows faster] [Reject 'not natural' or 'not organic']	(2)
5 (d)	1. weak forces <b>between</b> molecules; 2. requires little energy to separate them;	(2)
	<b>TOTAL FOR PAPER: 30 MARKS</b>	