

Examiners' Report/ Principal Examiner Feedback

November 2009

IGCSE

IGCSE Science (Double Award) (4437) Paper 2F

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SECTION A

Question 1

A common error on this question was to ignore the fact that symbols were required and give names in (a) and (b). In part (e) some candidates forgot that H and He make up the first period, and so gave the element from period 4.

Question 2

Almost all candidates picked up some marks, although it was commonly thought that crude oil was burned rather than heated and that fractions freeze into a liquid.

Question 3

While some candidates gave good answers to (a), many answers seemed to just be random gases. This could be said for (b), where candidates often gained one mark but could not identify both correct statements.

Question 4

Most candidates picked up one or two marks in (a), but black solids and white gases were often seen. There were very few correct answers to (b) and (c); in (b) it was rare to have the compound identified as an ammonium salt, in (c) there were many obvious guesses such as "fizzing".

Question 5

The word equation often yielded a mark (for the name of the salt made) and the test for carbon dioxide allowed some candidates to score much needed marks. It was rare to gain both marks in (c), but many candidates managed to come up with one method of increasing the rate (usually "heating"). Part (d) was not well answered, and many candidates who got the pH of carbonic acid correct still thought it would turn universal indicator red.

Question 6

Part (a) allowed most candidates to score one or two marks, but there were some totally blank answers and others that were very confused using substances that had nothing to do with iron production. Part (i) of (b) often resulted in a mark being gained, but (ii) proved more difficult for many candidates.

Question 7

Candidates often gained at least 1 mark for the colours in (a) but only the best foundation tier candidates managed to gain marks in (b). One common misunderstanding is in the addition of excess of copper oxide to the acid (steps 2 and 3 in the question) - this does not produce a saturated solution (indeed, the copper oxide is not dissolving - if it was then we would have copper oxide solution), saturation is achieved by the removal of water in step 5

SECTION B

General Comments

Questions in this section are targeted at grades D and C.

Question 8

This question was about atomic structure. It was disappointing to see so many errors in the completion of the table in part (a). When the term "relative" is used in a table, the expectation is that candidates will use numbers to match the 1 and -1 provided. Apart from errors with signs and using 0 and 1 in the wrong places, a surprising number of candidates used 2 in more than one box. Part (b) was better done, with most scoring at least 1 mark here; there was little confusion between mass number and relative atomic mass. In part (c), although isotopes were well known, not all gave the correct number of protons in boron-6.

Question 9

In part (a), although most knew the term "fractional distillation", not all identified the difference in boiling point as the reason why they could be separated in the apparatus shown - some answers simply gave "heat"; the outline of how pure propanone and water could be separated was poorly done, with some confusing the water in the flask with that passing through the condenser. The correct choices were often made in (b).

Question 10

This question was about the halogens. Candidates had mixed success - a disappointing number failed to score either mark in part (a). In part (b), although more than half the candidates correctly identified where chlorine gas would be formed, a great variety of wrong answers were seen in (ii) and (iii). Part (c) was generally well done, with few errors in the word equation where the halogen and halide names were wrongly used (such as "sodium bromine"); unfortunately many candidates ignored the reference to word equation and wrote chemical equations instead, most of which were not correct.

Question 11

This question was mostly about alkanes and alkenes. Many good answers were seen to most parts of this question. In part (e), several candidates did not seem to understand the meaning of "general formula" and wrote a specific formula (such as C_4H_{10}).

SCIENCE (DOUBLE AWARD) 4437, GRADE BOUNDARIES

Option 1 : with Paper 7 (Biology) & Paper 8 (Chemistry)

	A*	A	B	C	D	E	F	G
Foundation Tier				52	42	32	23	14
Higher Tier	76	65	54	44	35	30		

Option 2 : with Paper 7 (Biology) & Paper 9 (Physics)

	A*	A	B	C	D	E	F	G
Foundation Tier				52	42	32	23	14
Higher Tier	76	65	54	43	35	31		

Option 3 : with Paper 8 (Chemistry) & Paper 9 (Physics)

	A*	A	B	C	D	E	F	G
Foundation Tier				53	43	33	24	15
Higher Tier	N/A	N/A	N/A	N/A	N/A	N/A		

No candidates at higher tier entered so there are no grade boundaries for this category.

Option 4: with Coursework (Paper 10)

	A*	A	B	C	D	E	F	G
Foundation Tier				N/A	N/A	N/A	N/A	N/A
Higher Tier	N/A	N/A	N/A	N/A	N/A	N/A		

No candidates entered coursework so there are no grade boundaries for this option.

Note: Grade boundaries may vary from year to year and from subject to subject, depending on the demand of the question paper.

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