

Examiners' Report/ Principal Examiner Feedback

June 2010

GCSE

360Science

GCSE Additional Science
Multiple Choice Paper C2 (5017)

GCSE Chemistry
Multiple Choice Paper C2 (5037)

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Foundation tier

The first four questions were generally well answered. In the section on carbon, whilst 52% of candidates recognised the structure of Buckminsterfullerene, just 29% could then correctly identify it as an element with 36% believing that it is a compound and 21% believing it is an ion. Candidates showed a good understanding of the properties of carbon in the form of Graphite and its symbol.

The second section on carbon compounds, was generally well answered with candidates showing a good understanding of the composition of a hydrocarbon. However, when working out the relative formula mass of molecule X (methanol), whilst 47% of candidates selected the correct answer of 32, 40% incorrectly selected 29.

In the rates of reaction section, candidates found it hard to recognise the correct graph for a reaction which had finished, with 42% picking graph D and 36% picking the correct graph C.

Candidates found the last section difficult, 60% of candidates thought that an element with one electron in its outer shell would be the least reactive of the atoms shown. Only 24% of candidates could explain why olive oil is referred to as monounsaturated, with 40% believing that olive oil contained single bonds only and 23% thinking that it contained double bonds only. There was also confusion between hydrogenation and dehydrogenation when in relation to olive oil being turned into margarine, with 35% selecting the incorrect answer of dehydrogenation.

Higher tier

The first section was generally well answered and as expected higher tier candidates performed better than foundation tier on this overlap section.

Candidates found question 27 challenging, with 32% of candidates selecting the correct answer B. In question 30, 39% of candidates understood that increasing the temperature would decrease the yield of ammonia. 32% believed that removing ammonia from the reaction vessel as it is formed would decrease the yield.

In the section on aluminium oxide, 33% incorrectly chose Al_3O_2 as the formula for aluminium oxide whilst 35% correctly chose Al_2O_3 . Whilst 50% showed a good understanding of the electronic configuration of aluminium and its ion, 41% thought that to make the positive ion, the aluminium atom gained electrons.

Empirical formula appeared to be a difficult concept for candidates with only 20% able to recognise CH_2 as the correct empirical formula for ethene. Atom economy also posed a challenge for candidates in question 39, 56% of candidates thought that the atom economy was not 100% for the reaction between ethene and steam to produce ethanol.

Grade Boundaries - June 2010

Multiple Choice Papers - GCSE Additional Science

Raw Mark Grade Boundaries

5015/5027	Max mark	A*	A	B	C	D	E	F	G
H	24	21	19	17	16	13	11		
F	24				17	14	11	9	7

5017/5037	Max mark	A*	A	B	C	D	E	F	G
H	24	19	17	13	10	7	5		
F	24				16	13	11	9	7

5019/5047	Max mark	A*	A	B	C	D	E	F	G
H	24	19	16	14	12	8	6		
F	24				16	13	10	8	6

Uniform Mark Grade Boundaries for these units

	Max UMS	A*	A	B	C	D	E	F	G
H	40	36	32	28	24	20	18		
F	27				24	20	16	12	8

Note: On higher tier papers, the "allowed" grade E is calculated as half a grade width

Structured Papers - GCSE Additional Science

Raw Mark Grade Boundaries

5016/5028	Max mark	A*	A	B	C	D	E	F	G
H	30	20	16	12	9	6	4		
F	30				18	15	12	10	8

5018/5038	Max mark	A*	A	B	C	D	E	F	G
H	30	20	15	11	7	5	4		
F	30				18	15	12	10	8

5020/5048	Max mark	A*	A	B	C	D	E	F	G
H	30	20	18	14	11	8	6		
F	30				19	16	14	12	10

Uniform Mark Grade Boundaries for these units

	Max UMS	A*	A	B	C	D	E	F	G
H	40	36	32	28	24	20	18		
F	27				24	20	16	12	8

Note: On higher tier papers, the "allowed" grade E is calculated as half a grade width

Biology, Chemistry and Physics Extension Papers

Raw Mark Grade Boundaries

5029	Max mark	A*	A	B	C	D	E	F	G
	60	48	43	38	34	29	24	20	16

5039	Max mark	A*	A	B	C	D	E	F	G
	60	55	49	42	36	30	25	20	15

5049	Max mark	A*	A	B	C	D	E	F	G
	60	50	44	38	32	26	20	15	10

Uniform Mark Grade Boundaries for these units

Max UMS	A*	A	B	C	D	E	F	G
120	108	96	84	72	60	48	36	24

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