

Examiners' Report/ Principal Examiner Feedback

March 2010

GCSE

360Science

GCSE Additional Science
Multiple Choice Paper C2 (5017)

GCSE Chemistry
Multiple Choice Paper C2 (5037)

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Publications Code UG023131

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Foundation Tier

17% of candidates chose the correct answer for question 8 with 38% thinking that simple molecular, covalent compounds contain ions, 23% that they have high boiling points and 22% that they conduct an electric current when molten. 20% made the correct choice in question 9 with 58% thinking that substances with giant ionic structures conduct an electric current when solid. Whilst 42% knew that all polymers are formed by the combination of many small molecules, 26% thought that polymers contain ionic bonds and 23% that they are unsaturated. 38% could recognise the symbol for an iodide ion with 28% choosing I_2 . 26% knew that unsaturated oils are reacted with hydrogen to turn them into solids, 43% chose saturated hydrocarbons and 25% saturated fat. In question 18, 60% of candidates thought that the use of a catalyst would prevent the formation of the toxic by-product. To make sodium sulphate safely 27% of candidates chose to react sodium with dilute sulphuric acid and 23% to use dilute hydrochloric acid. 31% knew that the formation of positive ions involves loss of electrons 35% believed that it involves the gain of electrons. When given the atomic number of neon as 10 only 20% knew that all atoms of neon contain 10 protons and 10 electrons with 36% choosing 5 protons and 5 neutrons and 34% 5 protons and 5 electrons. Whilst 42% knew the correct answer to question 22, 21% thought that neon atoms form stable molecules. 33% chose the correct answer to question 24 with 35% thinking that energy is needed to form bonds and 20% that no bonds are broken but new bonds are formed.

Higher Tier

As would be expected higher tier candidates performed better than foundation candidates on questions 17 to 24 but some of the weaknesses indicated above were still present especially in questions 17 (50% correct), 19 (52% correct), 21 (52% correct), and question 24 (37% correct).

As usual balanced equations proved challenging with only 37% choosing the correct answer in question 27, 33% chose option A with incorrect formulae for hydrochloric acid and calcium chloride and 20% C with an incorrect formula for hydrochloric acid. In question 29, 29% could identify the electronic configurations of three elements in the same group with 44% choosing C '2.6.1, 2.7.1, 2.8.1' and 20% A '2.8.1, 2.8.2, 2.8.3'. In question 30, 16% could identify the correct answer with 41% choosing A and 31% C. In question 35, 26% chose the correct answer with 35% thinking that statement 1 was incorrect and statement 2 correct 'When plasticizers are added to poly(ethene) they make the product more rigid'. Inspection of the answers in question 36 should allow the correct answer to be chosen without carrying out the calculation but only 34% chose the correct answer with 31% choosing A where the total percentage is less than 100%. In question 37, 45% chose the correct answer but 25% chose D thinking that X 2.8.2 and Y 2.8.7 would form X_2Y_7 . 39% chose the correct answer for question 38, a further 32% knew that statement 2 was correct but thought that statement 1 was also correct. The balanced equation in question 39 proved challenging with 26% choosing the correct option and 44% B containing an incorrect formula for potassium iodide. 34% chose the correct answer for question 40 with 29% choosing Fe_2O_3 .

Grade Boundaries - March 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	20	18	15	13	10	8		
F	24				16	13	11	9	7

5017/5037	Max mark	A*	A	B	C	D	E	F	G
H	24	17	15	12	10	7	5		
F	24				15	12	10	8	6

5019/5047	Max mark	A*	A	B	C	D	E	F	G
H	24	15	13	11	9	6	4		
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	17	14	11	9	7	6		
F	30				18	15	12	10	8

5018/5038	Max mark	A*	A	B	C	D	E	F	G
H	30	21	17	13	10	7	5		
F	30				22	18	15	12	9

5020/5048	Max mark	A*	A	B	C	D	E	F	G
H	30	21	19	16	14	11	9		
F	30				20	16	12	9	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

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