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Examiners' Report/ Principal Examiner Feedback

November 2010

GCSE

360Science

GCSE Additional Science Multiple Choice Paper C2 (5017)

GCSE Chemistry Multiple Choice Paper C2 (5037)

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5017 Additional Science/ 5037 Chemistry (Multiple Choice C2) Examiners' Report

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Foundation Tier

Whilst 58% of candidates chose the correct answer for question 1, 27% thought that using smaller pieces of magnesium would slow down the reaction. Only 40% knew that particles must collide to react with 39% thinking that they need to dissolve. Only 34% knew that magnesium ions are formed by magnesium atoms losing two electrons with 50% thinking that the atoms gain two electrons. Only 21% could recognise the symbol for a chloride ion with 31% choosing Cl^{2+}. Only 21% knew the likely melting point of an ionic compound with 53% choosing 80°C. Only 31% of candidates knew the formula for a molecule of propene with all of the other answers being chosen almost equally. In question 12 only17% of candidates knew that propene molecules are monomers with 33% choosing 'form double bonds' and 23% polymers. Only 31% knew that a covalent bond is formed by the sharing of two electrons with 38% believing that it involves the sharing of an electron .In question 17 only 30% knew that compounds such as ammonia have strong bonds between atoms but weak forces between molecules. The other answers were all popular choices. Only 23% knew that at equilibrium the composition of the mixture remains constant with 38% believing that the reverse reaction starts. In question 19 only 34% could interpret the graph. Only 38% knew the heat changes involved in bond breaking and bond making with 50% choosing **D** showing the opposite changes. Only 44% knew that diamond and Buckminsterfullerene are pure forms of carbon with 43% believing that they are compounds containing carbon. In question 22 only 33% could identify the number of protons and neutrons in the isotopes with all the incorrect answers being popular choices. Only 38% knew that atoms of carbon can 'form four stable, covalent bonds'.

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 (45% correct), 18 (42% correct), 20 (45% correct) and 22 (54% correct).

Only 42% chose the correct answer in question 25 with 37% choosing **D** showing an increase in the mass of flask and contents. As usual balanced equations proved difficult with only 46% choosing the correct answer in question 26, 45% chose either option **A** or **B** with monatomic hydrogen. In question 28 only 36% knew that 'chloride ions move to the anode and lose electrons, the other answers all being popular choices. In question 30 only 14% could identify the correct answer with 80% of candidates believing that ionic compounds have strong forces of attraction between atoms. Whilst 50% knew that ethane produces no colour change with bromine water 30% thought that the change was from orange to colourless. In question 35 only 39% chose the correct answer with 42% thinking, even when given the formula, that ethanoic acid is a hydrocarbon. In question 36 only 32% chose the correct answer and 25% chose **B** showing ethane not ethene. Only 49% chose the correct answer for question 38, with 39% thinking that chlorine molecules contain ionic bonds. Only 35% chose the correct answer for question 38 with 47% thinking that statement 1 was correct. The balanced equation in question 40 caused difficulties with 44% choosing the correct option with the other options attracting almost 20% each.

Grade Boundaries – November 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	22	19	16	14	11	9		
F	24				18	15	13	11	9

5017/5037	Max mark	A*	A	B	C	D	E	F	G
H	24	19	16	13	10	8	7		
F	24				15	12	10	8	6

5019/5047	Max mark	A*	A	B	C	D	E	F	G
H	24	21	18	15	12	10	9		
F	24				16	13	11	9	7

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	19	16	13	10	7	5		
F	30				18	15	12	10	8

5018/5038	Max mark	A*	A	B	C	D	E	F	G
H	30	22	18	14	10	7	5		
F	30				17	13	10	7	4

5020/5048	Max mark	A*	A	B	C	D	E	F	G
H	30	20	17	14	11	8	6		
F	30				18	14	11	8	5

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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