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Examiners' Report/ Principal Examiner Feedback

Summer 2010

IGCSE

IGCSE Science (Double Award) (4437) Paper 3F

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Question 1

This question was answered very well and in particular the calculation and units in (c).

Question 2

The drawing of the circuit in (a) was very well done although in (b) only about 60% of the candidates knew that it was a series circuit. In (c) many candidates thought that the body warmer produced less heat at the front because a smaller current flowed rather than there being less wire.

Question 3

In (a)(i) candidates had a good knowledge of the order of the parts of the electromagnetic spectrum although in (a)(ii) they were far less sure about which had the greater wavelength or frequency. In (c) uses and hazards of infra-red were often confused with other parts of the spectrum.

Question 4

In (a) candidates often included refraction as one of the angles. Part (b) was poorly answered with few candidates following the instruction to complete the path of or even continue the wave.

Question 5

The calculation in (b)(ii) was mostly correct but the rest of the question was poorly answered. In particular, candidates were unable to insert the word 'conserved' which was given in the box.

Question 6

This question was poorly answered. Candidates often knew one source of background radiation and one use of radioactivity but rarely knew that half-life was a time.

Question 7

In (a) some candidates recognised the symbol for the diode although many thought that it represented a variable resistor. In (b) some had difficulty putting into words the difference between a fixed and a variable resistor. In (c) most candidates scored well in (i) and (ii) and in (iii) many calculated 2.2 V from 6.0 – 3.8 although some produced 9.8 V. Disappointingly only about 50 % of candidates scored the mark in (d).

Question 8

In (a)(i) candidates were able to state the time for the driver to react but considerably less were able to calculate the braking time. In (b) many responses did not refer to a time but instead to a speed e.g. 'the driver reacted slower'. In (c) half of the responses would have decreased stopping distance instead of increasing it. In (d) candidates are still reluctant to indicate that the weight of an object acts through its centre of gravity.

Question 9

In (a)(i) only about 10% of candidates recognised the distance *c* as twice the amplitude while about 80% associated *d* with wavelength. Approximately 40% were able to do the calculation where curiously the number 30 did not often feature. Just over half the candidates recognised the wave as transverse and gave a simple description of the motion of the ball. In the latter, some stated that it would go up but neglected to say that it would come down again.

Question 10

Candidates were not always sure about 'chemical' energy in (a)(i) and frequently reversed 'gravitational potential' and 'kinetic' in (b)(ii).

Question 11

Candidates showed little knowledge of this topic with less than 20% able to complete the symbol for carbon-14. However about 75% were able to state that alpha and beta were particles.

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				54	44	34	24	14
Higher Tier	80	68	56	45	36	31		

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

	A*	A	B	C	D	E	F	G
Foundation Tier				53	43	33	24	15
Higher Tier	80	68	56	45	36	31		

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

	A*	A	B	C	D	E	F	G
Foundation Tier				52	42	32	23	14
Higher Tier	79	67	55	43	34	29		

Option 4: with Coursework (Paper 10)

	A*	A	B	C	D	E	F	G
Foundation Tier				55	44	34	24	14
Higher Tier	82	70	58	47	37	32		

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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