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Examiners' Report/ Principal Examiner Feedback

June 2010

GCSE

360Science

GCSE Science
Multiple Choice Paper P1a (5009)

GCSE Physics
Multiple Choice Paper P1a (5045)

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June 2010

Publications Code UG024715

5009 Science/ 5045 Physics Examiners' Report
Multiple Choice paper P1a
June 2010

Foundation tier

On several items which had been mentioned in the June 2009 report, performance appeared higher.

There was an improvement this year on the number of candidates that know electric current in a wire is a flow of negative electrons. Unfortunately there was, however, a number of candidates thinking that the electrons are positive.

There was also an improvement in performance on graphical items to distinguish between direct and alternating current. As many as 48% selected the graph which showed current in one direction only, this year. This compares favourably with the low value of 20% who were able to identify the alternating current in June 2009.

However, the dependence on the speed of movement of the magnet of the induced voltage was correctly known by considerably fewer in 2010.

Similarly, compared with the 24% who knew that only a dynamo transferred energy into electrical energy in 2009, 36% this year identified a solar cell as the source of direct current. 27% thought the source was the ammeter and 21% the fixed resistor.

Q13 was found challenging by many. It is disappointing to note that, once again, performance on some items which are directly from statements in the specification are answered poorly. In this question only a small number identified power as the rate of transfer of electrical energy. As many as 40% went for current and 26% for voltage.

Overlap questions

All items in this section produced, as anticipated, higher scores for higher tier candidates than for foundation tier candidates. However few were able to correctly work out the cost of using a kettle for 15 minutes to be 15p. (44% at F-tier and 67% at H-tier chose £9.00! – simply multiplying the given numbers together.)

Responses to the four graphical items were quite good although realising that a bar chart was chosen due to the discontinuous nature of the data was fairly low.

Higher tier

In the unusual situation of the Josephson junction, as many as 65% spotted the link between the wording and the graph. Only 43% however, translated the verbal information about direct proportionality to the graph.

As usual, there was loss of marks mainly due to units. In this test, it involved missing the k in kV meaning that almost twice as many selected an answer in A rather than mA. Candidates also seemed to simply play with the numbers given to produce

ridiculous answers such as 115 A (230 V/2 W) for the fuse of the night light in a child's room.

By contrast, 40% selected the correct graphical representation of the situation presented in questions 38-40 – A*-aimed questions.

Grade Boundaries – June 2010

Multiple Choice Papers – GCSE Science

Raw Mark Grade Boundaries

5005/5025	Max mark	A*	A	B	C	D	E	F	G
H	24	20	18	15	12	9	7		
F	24				16	13	10	7	4

5006/5026	Max mark	A*	A	B	C	D	E	F	G
H	24	20	17	14	12	9	7		
F	24				15	13	11	9	7

5007/5035	Max mark	A*	A	B	C	D	E	F	G
H	24	20	17	14	11	8	6		
F	24				16	13	10	8	6

5008/5036	Max mark	A*	A	B	C	D	E	F	G
H	24	19	17	14	12	9	7		
F	24				16	13	10	8	6

5009/5045	Max mark	A*	A	B	C	D	E	F	G
H	24	16	14	12	11	8	6		
F	24				14	12	10	8	6

5010/5046	Max mark	A*	A	B	C	D	E	F	G
H	24	19	17	14	12	8	6		
F	24				14	12	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

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