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Examiners' Report

Principal Examiner Feedback

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Pearson Edexcel GCSE Combined Science  
(1SC0) Paper 2PH

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### **Question 1**

(a)(ii),(iii) Most candidates were able to take data from the graph and substitute values into the equation for resistance but many of these did not convert mA to A in the calculation in (iii).

(a)(i),(iv) The most common errors here were that many candidates did not refer to the non-linear nature of the graph in (i) or the reason for the increase in temperature in (iv).

### **Question 2**

(a),(b),(c) Many candidates score almost full marks in these parts of the question. The most common source of error was in (b) in calculating the volume.

(d) Many candidates were not able to convert a temperature in °C to K.

### **Question 3**

(a) Many candidates were able to interpret the diagram well enough to draw the magnets in the correct places and orientation and score 2 of the 3 marks available for describing the method in part (ii).

(b)(i) An encouraging number of candidates were able to rearrange the equation and calculate the value of the constant, K, but fewer went on to work out the correct unit (N cm<sup>2</sup>).

(b)(ii) To gain the mark here, candidates had to appreciate that the force had the same magnitude (size) but the opposite direction.

### **Question 4**

(a) Many candidates could not recall the equation for work done so did not score in part (ii). Part (iii) showed more success where the equation was given but it required rearrangement. In part (iv), only a few candidates showed an understanding of the connection between work done and change in GPE in this context.

(b) An encouraging number of candidates scored full marks in this calculation involving kinetic energy. The most common sources of error were in rearranging the equation or dealing with the square root.

### **Question 5**

(a) Most of the candidates were able to place the ammeter correctly in (i) but far fewer were able to correctly place the voltmeter. Most candidates were able to recall and use the equation for power in (ii). The common sources of error in (iii) involved conversion of units (mA to A and minutes to seconds).

(b) Responses to (i) and (ii) did not show a good understanding of current at a junction or resistance in parallel. Many candidates were able to score at least 1 mark in (iv) about the need for thicker wire.

### **Question 6**

(a) Many Candidates were able to score at least 2 of the 3 marks available in each of parts (i) and (ii). The main sources of error were using the wrong temperature change in (i) and confusion with powers of ten in (ii).

(b) This was an unfamiliar scenario, based on a core practical. As such, many candidates were able to suggest appropriate measurements and steps in the procedure, giving level 1 or level 2 responses, but few got the connection between the decrease in thermal energy of the aluminium and the increase in thermal energy of the water in the second beaker, needed to reach level 3.