This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners’ meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2016 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.
1 (a) Any 2:
Insert another cell/decrease the resistance of the variable resistor/increase voltage of power supply

(b) Table drawn with headings (Current and Number of paperclips)
Unit for current (Amps)
Correct data in table

2 (a) (i) 10.7366…
10.7 s
(ii) 1.07 s
(iii) Time for one oscillation very small/difficult to measure/time for tens swings is more accurate gives an average
Comparison of 0.2 s to T i.e. is a large proportion is significant

(b) (i) Table completed
(ii) axes labelled quantity and unit
scales linear
points plotted accurately
best fit curve drawn
(iii) As N increases, T increases
(iv) (0.65 ± 0.01) s
Unit needed

(c) Different lengths would not give a reliable (allow accurate) result/graph not smooth/introduces another variable/result for (b)(iv) not valid.
3  (a)  22.8  

23 g (2 significant figures only)  

(b)  (i)  Measuring cylinder/burette/graduated cylinder  

(ii)  1  Liquid P  

Only liquid P is denser than water  

(ii)  2  B because liquid P is denser than oil.  

(c)  Wood is less dense than water but more dense than oil/density of wood between 0.9 and 1.0  

4  (a)  Thermometer/pyrometer  

(b)  Water in test tubes and thermometer/pyrometer  

Left for a period of time/pyrometer connected to galvanometer  

Readings of initial and final temperatures/temperature fall/readings taken from the galvanometer  

(c)  Any 2:  
Same volume of water  
Same initial starting temperature  
Same length of time/pyrometer must be an equal distance from the test tubes.