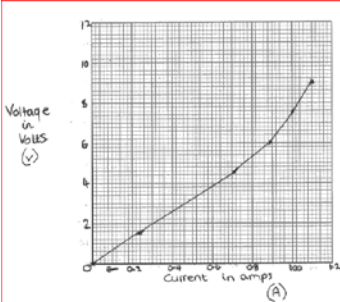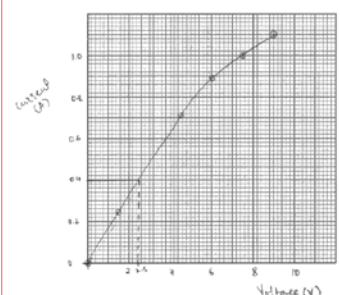| Question number	Answer	Notes	Marks
10(a)	any 3 mistakes identified from MP1. cells are connected with wrong polarity; MP2. ammeter is connected in parallel (with wire); MP3. voltmeter is connected in series (with wire); MP4. circuit has not got a switch;	allow RA for any MP allow idea that meters should be swapped for two marks (MP2 and MP3)	3
(b) (i)	suitable scale chosen (> 50% of grid used); axes labelled with quantities and unit; plotting correct to nearest half square (minus one for each plotting error) ;; line of best fit through zero; = 4 not curve mark = 5	only scales in 1,2,5,10 or 8 acceptable orientation unimportant points must be shown clearly i.e. two plotting errors = no marks for plotting i.e. smooth curve <table><tr><th>I</th><th>V</th></tr><tr><td>0.0</td><td>0.</td></tr><tr><td>0.2</td><td>1.</td></tr><tr><td>0.7</td><td>4.</td></tr><tr><td>0.8</td><td>6.</td></tr><tr><td>1.0</td><td>7.</td></tr><tr><td>1.1</td><td>9.</td></tr></table>	5
(ii)	0.40 A	range 0.39 A to 0.41 A	1
(iii)	One of - MP1. Temperature (of wire) was not constant; MP2. Resistance (of wire) was not constant;		1

Question number	Answer	Notes	Marks
10 (b) (iv)	Any four of - MP1. instrument to measure temperature; MP2. means to maintain constant temperature (of wire); MP3. use of V = IR; MP4. idea of repeating / averaging (at same temperature); MP5. idea of additional (interpolated) points; MP6. use linear part of the graph; MP7. use of gradient;	ignore all details about the circuit already given e.g. water bath, switch off and allow wire to cool V α I obtain a range of values (of V, I) Allow reference to candidate's graph, e.g. current below 0.6 A Orientation unimportant	4

Total 14 marks