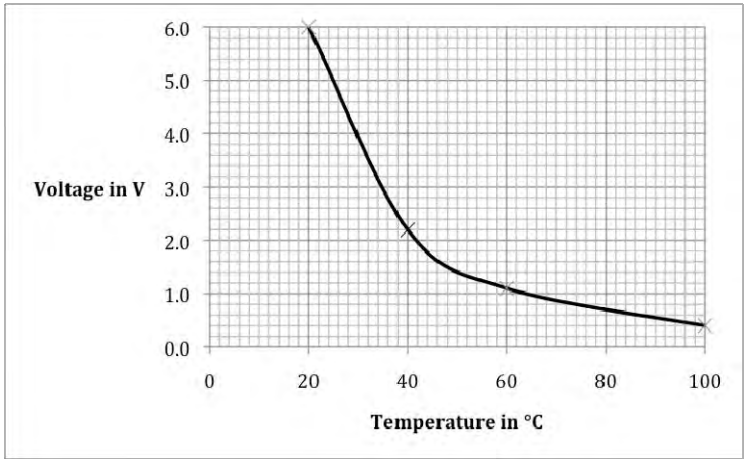
Question number	Answer	Notes	Marks
1 (a) (i)	B (53)		1
(ii)	D (131)		1
(b)	Any two of - MP1 Beta is (moderately) ionising; MP2 Beta has a short range; MP3 idea that I-131 has a short half-life; MP4 idea that iodine is absorbed (easily) by the thyroid; MP5 (hence) reduces damage to healthy cells; MP6 (hence) does not penetrate out of the body; MP7 (therefore) kills (only) tumour cells;	Ignore I-131 is radioactive, it emits beta	2

Total 4 marks

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>4 (a)</td><td>Any three of -
MP1 use a stirrer / stir with thermometer;
MP2 centralise / spread heat source;
MP3 move thermistor and thermometer to same level;
MP4 move thermistor and thermometer closer together;
MP5 Use thermometer with finer scale / digital thermometer;</td><td>Ignore repeat readings

Assume horizontal separation meant</td><td>Max 3</td></tr>
<tr><td>(b)</td><td>(milli)Ammeter;</td><td>Allow ampmeter</td><td>1</td></tr>
<tr><td>(c) (i)</td><td>Scale; (at least half the grid)
Axes labelled including units;
Plotting ±½ small square;;
Line of best fit;
 
</td><td>Accept axes reversed
-1 each plotting error, minimum 0 for plotting
Curve through either (80, 0.2) or (100, 0.4)
Allow line bisecting these two points
<table><tr><th>Temperature in °C</th><th>Voltage in V</th></tr><tr><td>20</td><td>6.0</td></tr><tr><td>40</td><td>2.2</td></tr><tr><td>60</td><td>1.1</td></tr><tr><td>80</td><td>0.2</td></tr><tr><td>100</td><td>0.4</td></tr></table></td><td>5</td></tr>
<tr><td>(c) (ii)</td><td>DOP (80, 0.2) circled (if supported by line of best fit)</td><td>Allow (100, 0.4) circled if supported by line of best fit</td><td>1</td></tr>
</table>