<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>6 (a)</td><td>idea that there must be a current in the wire;

this current must be to the right;</td><td>allow charge/electrons moving in the wire
reject references to positive electrons
allow electrons moving to the left</td><td>2</td></tr>
<tr><td>(b) (i)</td><td>any one of:

MP1. idea of avoiding fall objects from hitting hands/feet etc;
MP2. taking care of heating effect of current;
MP3. idea of protecting floor from damage;</td><td>ignore electric shocks, safety glasses, gloves
allow idea of not standing underneath</td><td>1</td></tr>
<tr><td>(ii)</td><td>correct calculation of mean;
answer given to 3 significant figures;

e.g.
(mean current =) 1.833...(A)
(mean current =) 1.83 (A)</td><td>
independent mark</td><td>2</td></tr>
<tr><td>(iii)</td><td>y-axis scale with a sensible, continuous scale such that plotted data covers 50% of the grid;

y-axis labelled with current/I AND amps/A;
all data plotted correctly;

<table><tr><th>Mass of load in g</th><th>Mean current in A</th></tr><tr><td>100</td><td>0.30</td></tr><tr><td>200</td><td>0.58</td></tr><tr><td>300</td><td>0.89</td></tr><tr><td>400</td><td>1.23</td></tr><tr><td>500</td><td>1.50</td></tr><tr><td>600</td><td>1.83</td></tr></table></td><td>reject if scale uses multiples of 0.3, 0.7 or 0.9 or if discontinuous

allow ecf from (ii)
reject if scale is discontinuous
data should be plotted to within half a small square</td><td>3</td></tr>
<tr><td>(iv)</td><td>straight line drawn with approximately equal distribution of points either side;</td><td>allow ecf from incorrect plotting/scale
line does not need to pass through origin</td><td>1</td></tr>
</table>

(v)	any three from: MP1. indication that 1.0 kg is 1000 g; MP2. use of data from table to show that ratio supports 3.0 A current value; MP3. (because) current is (directly) proportional to mass; MP4. idea that 1.0 kg is (far) beyond range of collected data/graph; MP5. idea that pattern may not continue outside range of data collected/graph;	 can be inferred from working e.g. 2×500g = 1kg e.g. 500g gives 1.50A and 1000g is double 500g, 100g gives 0.30A and 1000g is 10 times 100g	3

Total for Question 6 = 12 marks