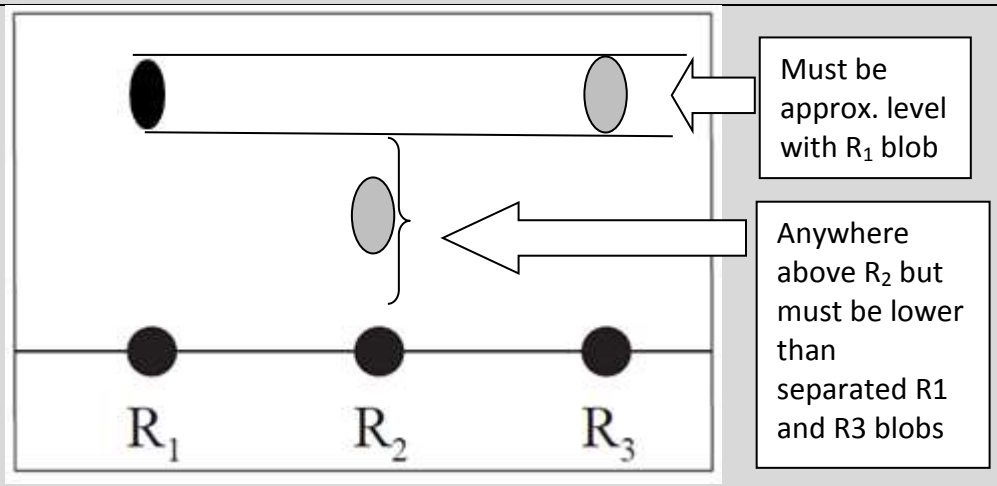
10 B 2012

/ means OR eg. green / blue – answer needs green OR blue
( ) means additional, not really required eg. Gauze (mat) – gauze would be sufficient
: means AND eg. red : hot - answer needs red and hot.

Question	Evidence	Marks
One (a)	Static / electrostatic	(a) and (b) correct for 1 mark
(b)	The objects have opposite charges (which attract / they attract	
(c)	D is circled	1 mark
(d)	One of: electromagnets can be switched on /off when needed electromagnet strength can be varied by changing voltage/current	1 mark
(e)	Two of: use more coils more voltage / current iron core different wire	1 mark
(f)	To concentrate (focus) the magnetic field (lines) / is magnetic / makes the magnet stronger	1 mark
Two (a)	number of protons (in the nucleus) or electrons / position on the Periodic table	1 mark
(b)	Shell 2 = 8 electrons and shell 3 = 5 electrons drawn	1 mark
(c)	made of 1 type of atom / cannot be broken into anything simpler	1 mark
(d)	Both are non-metals / same number of valence (outer shell) electrons / both have 2 electrons in the first shell / both in same Group (15) / both incomplete valence (outer) shell / both have more than one shell	1 mark
3 (a)	correctly plotted points smooth curve drawn (must not be too thick ; one mistake in line drawn accepted)	1 mark 1 mark
(b)	Yes/no: it does <u>until 11 minutes</u> (must have identified end of reaction <u>time</u> or explained reason why reaction stops producing gas)	1 mark
(c)	☑ Repeat the experiment at least once.	1 mark
(d)	→ carbon dioxide + water + calcium chloride *(in any order)*	1 mark

<table>
<tr><td>4(a)</td><td>Weathering is the breakdown of rocks (into smaller pieces)</td><td>1 mark</td></tr>
<tr><td>(b)</td><td>
<table>
<tr><th>Mechanical/physical weathering</th><th>Chemical weathering</th></tr>
<tr><td>Wind
Waves
Glaciers
(ignore water if it is placed in here as it is already included as waves)</td><td>Air/oxygen
Acid rain
Water</td></tr>
</table>
</td><td>3-4 correct = 1 mark

all correct = 2 marks</td></tr>
<tr><td>5(a)</td><td>chromatography</td><td>1 mark</td></tr>
<tr><td>(b)</td><td>• Draw pencil line (on chromatography paper) above solvent depth
• Add samples to the line
• Insert into solvent with dye not submerged/ dye not covered
• Leave until solvent line/boundary is near top/until components in dye have separated</td><td>2 steps = 1 mark

3 or 4 steps = 2 marks</td></tr>
<tr><td>(c)</td><td> 
</td><td>2 blobs correctly placed = 1 mark</td></tr>
<tr><td>6</td><td>
<table>
<tr><th>Test for</th><th>Reagent used</th><th>Positive test</th></tr>
<tr><td>Carbohydrate – Starch</td><td>Iodine solution</td><td>(a) Blue/black colour</td></tr>
<tr><td>Carbohydrate – Glucose</td><td>(b) Benedict’s reagent / solution</td><td>Orange/red precipitate</td></tr>
<tr><td>Protein</td><td>Biuret reagent</td><td>(c) Purple colour</td></tr>
</table>
</td><td>2 - 3 correct = 1 mark</td></tr>
</table>

<table>
<tr><td>7 (a)</td><td>One of: to soften the leaf / to stop photosynthesis / to kill the cells / to stop chemical reactions / remove waxy layer / to break down cell wall</td><td>1 mark</td></tr>
<tr><td>(b)</td><td>To remove pigment / chlorophyll / green colour (from the leaf)</td><td>1 mark</td></tr>
<tr><td>(c)</td><td>The plant makes glucose which it turns to starch / the starch turns blue black /starch is stored energy</td><td>1 mark</td></tr>
<tr><td>(d)</td><td>• Where there was no light the plant couldn't photosynthesize / make starch / make food
• Light provides energy to break bonds / cause reaction between carbon dioxide and water
• Photosynthesis formula (word equation correct)
• Chlorophyll absorbs light which is converted into chemical energy
• When iodine is added to a leaf that has not received light there is an absence of starch due to photosynthesis not being able to occur here.</td><td>1 point = 1 mark

2 or more points = 2 marks</td></tr>
<tr><td>8 (a)</td><td>Wind</td><td>1 mark</td></tr>
<tr><td>(b)</td><td>Two of:
Water / animal / explosive fruits</td><td>1 mark</td></tr>
<tr><td>(c)</td><td>Two of:
To avoid competition for light / water/ nutrients / space (Do NOT accept air or CO_2 or food) (must state competition)</td><td>1 mark</td></tr>
<tr><td>9 (a)</td><td>sodium hydroxide : blue colour (both req)</td><td>1 mark</td></tr>
<tr><td>(b)</td><td>pH increases : acidity decreases (both req)</td><td>1 mark</td></tr>
<tr><td>10 (a)</td><td>
<table>
<tr><th>property e.g.</th><th>artery</th><th>vein</th><th>capillary</th></tr>
<tr><td>size /diameter</td><td>large</td><td>large</td><td>small</td></tr>
<tr><td>wall</td><td>elastic /thick</td><td>not elastic/thin</td><td>not elastic/ thin / single cell</td></tr>
<tr><td>transport</td><td>carries blood away from heart</td><td>carries blood to the heart</td><td>Carries blood to cells / from heart</td></tr>
<tr><td>pressure</td><td>High pressure</td><td>Low pressure</td><td>High pressure</td></tr>
<tr><td>transport</td><td>carries much oxygen or little CO_2</td><td>carries little O_2 or much CO_2</td><td>carries much O_2 and little CO_2</td></tr>
<tr><td colspan="4">Marking of this question
3 marks = 2 blood vessels compared with 2 properties compared correctly
2 mark = 2 vessels compared with 1 property compared correctly
1 mark = 1 property correct for 1 vessel</td></tr>
</table>
</td><td>3 marks max</td></tr>
<tr><td>(b)</td><td>A = aorta C = left atrium
B = pulmonary vein D = right ventricle</td><td>Any 2 = 1 mark</td></tr>
</table>

(c)	Pulmonary artery = carries blood from heart : to lung AND Vena cava = carries blood from body / organs : to heart	1 mark
11 (a)	8 : N/Newton's (answer correct unit not required)	1 mark
(b)	Speed up / moving faster / accelerates : to the **RIGHT** (description and direction both needed)	1 mark
(c)	Speeds up less quickly / acceleration is less/slows down compared to initial speed	1 mark
		40 marks