

Question 8 (Answer: **A**)

- Where the graph is rising, carbon dioxide concentration is the limiting factor.
- Where it levels off, adding more carbon dioxide makes no difference.
- Something else – light intensity or temperature – has become the limiting factor there.

Question 8 (Answer: **B**)

- Chlorophyll has a magnesium ion at the centre of each molecule.
- That is why a shortage of magnesium causes yellow leaves.
- Cellulose, glucose and glycerol contain only carbon, hydrogen and oxygen.

Question 10 (Answer: **B**)

- The chemical absorbs the carbon dioxide, so the leaf cannot photosynthesise.
- The black cover blocks light, so photosynthesis stops anyway.
- The leaf still respire, using oxygen, so the gas volume falls and the ink drop moves towards the leaf.

5(a)(i)	$6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$;;
5(a)(ii)	magnesium (ion) ;
5(a)(iii)	starch ;
5(b)(i)	(positive) phototropism ;
5(b)(ii)	<i>any four from:</i> 1 auxin ; 2 (auxin) is made in / released from, the (shoot) tip ; 3 (auxin) moves by <u>diffusion</u> from (the shoot tip) ; 4 (auxin) is concentrated on, shaded / left / AW, side of the, shoot / plant ; 5 (auxin) stimulates <u>cell elongation</u> ; 6 shaded / left / AW, side of shoot, elongates / bends / grows, more than, light / right, side ;
5(b)(iii)	1 better chance of light reaching the plant / AW ; <i>any one from:</i> 2 light provides energy ; 3 light is needed for photosynthesis ; 4 able to, produce more glucose / respire ;

Question 9 (Answer: **A**)

- Each graph levels off when the factor plotted stops being the limiting one.
- Below the plateau, that factor is limiting the rate.
- So read where each curve flattens to see which factor becomes limiting and when.

Question 6 (Answer: **C**)

- Photosynthesis takes in carbon dioxide and water and makes glucose and oxygen.
- Balance the carbons first: six CO_2 give one $\text{C}_6\text{H}_{12}\text{O}_6$.
- $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$.

Question 10 (Answer: **A**)

- Respiration happens all the time, day and night, so its rate never falls to zero.
- Photosynthesis needs light, so it is zero during the hours of darkness.
- So look for a respiration line that stays above zero throughout and a photosynthesis line that touches zero at night.