Examiners' Report/
Lead Examiner Feedback

March 2018

NQF BTEC Level 1/Level 2 Firsts in
Principles of Applied Science

Unit 1: Principles of Science (20460E)

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Grade Boundaries

What is a grade boundary?

A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade (Distinction, Merit, Pass and Level 1 fallback). The grade awarded for each unit contributes proportionately to the overall qualification grade and each unit should always be viewed in the context of its impact on the whole qualification.

Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark should be for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

Variations in external assessments

Each test we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each test, because then it would not take into account that a test might be slightly easier or more difficult than any other.

Grade boundaries for this, and all other papers, are on the website via this link: qualifications.pearson.com/gradeboundaries

Unit 1: Principles of Science (20460E)

Grade	Unclassified	Level 1 Pass	Level 2		
			Pass	Merit	Distinction
Boundary Mark	0	13	22	31	40

General comments

It was pleasing to see some good quality responses and evidence that learners have been revising the key ideas of the specification. Learners that did well this series, knew the meanings of key terms and could apply them to their answers to questions posed. They used good scientific language and were able understand what was being asked for in the question and therefore apply their knowledge of the science well for example in the genetics question. The best learners were able to apply scientific knowledge to new situations, write chemical formula and complete symbol equations.

As in previous series, exam technique is still an issue for the weaker learners; Centre's need to fully prepare learners for the exam by practicing exam technique, especially in relation to reading the question carefully and not repeating the stem of the question.

Feedback on specific questions

In question 1 (a)(ii), the majority of learners were able to state one precaution that a scientist should take when using the chlorine gas such as using a fume cupboard, which gained a mark.

(ii) A scientist is using a container of chlorine gas.
Hazard symbol **Y** is shown on the container.

Y

Hazard symbol **Y** shows that the chlorine gas is toxic.

State **one** precaution the scientist should take when using the toxic chlorine gas.

(1)

The Scientist Should use a fume cobbord .

Many learners stated that goggles or gloves should be worn whilst dealing with the chlorine, both of which were accepted for the mark.

(ii) A scientist is using a container of chlorine gas.
Hazard symbol **Y** is shown on the container.

Y

Hazard symbol **Y** shows that the chlorine gas is toxic.

State **one** precaution the scientist should take when using the toxic chlorine gas.

(1)

wear gloves / wear goggles

In some cases learners stated that the gas should not be breathed in or ingested, this was insufficient and did not gain a mark.

(ii) A scientist is using a container of chlorine gas.
Hazard symbol **Y** is shown on the container.

Y

Hazard symbol **Y** shows that the chlorine gas is toxic.

State **one** precaution the scientist should take when using the toxic chlorine gas.

(1)

not to injest the gas

In question 1 (b)(ii), learners found this question quite difficult with few being able to give the formula for the molecule of chlorine.

Few were able to correctly write the formula as in this case to gain the mark.

(ii) The symbol for an atom of chlorine is Cl.

Give the formula for a molecule of chlorine.

(1)

Cl_2

Many changed the formula completely or gave an irrelevant word, showing their lack of understanding of this key term.

(ii) The symbol for an atom of chlorine is Cl.

Give the formula for a molecule of chlorine.

(1)

Compound

(ii) The symbol for an atom of chlorine is Cl.

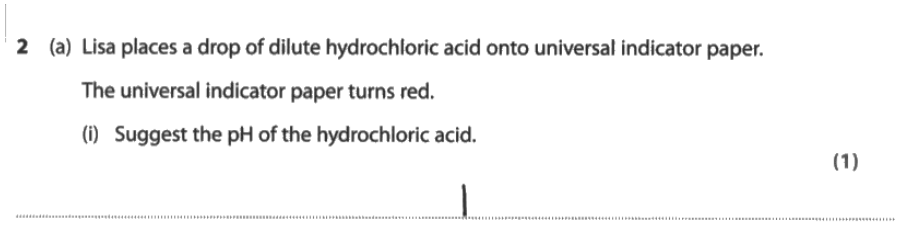
Give the formula for a molecule of chlorine.

(1)

CHl_2

Learners should be taught the basic vocabulary for each of the units.

In question 2 part (a)(i), the majority of learners were able to suggest the pH of the hydrochloric acid.



2 (a) Lisa places a drop of dilute hydrochloric acid onto universal indicator paper.

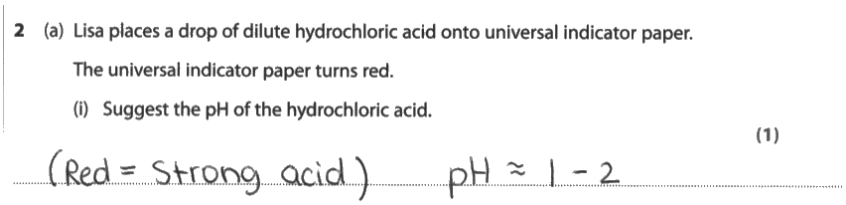
The universal indicator paper turns red.

(i) Suggest the pH of the hydrochloric acid.

(1)

1

Some learners gave a small range, this was accepted and gained a mark.



2 (a) Lisa places a drop of dilute hydrochloric acid onto universal indicator paper.

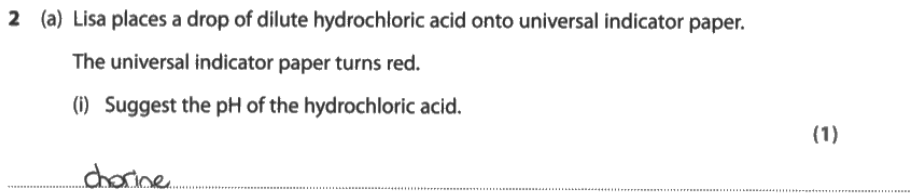
The universal indicator paper turns red.

(i) Suggest the pH of the hydrochloric acid.

(1)

(Red = Strong acid) pH ≈ 1 - 2

In some cases, learners gave a larger range, which included acids that would not give a red colour with universal indicator or if they did not read the question carefully and stated acid or a name of the substance that might have this effect on litmus paper, these all gained no credit.



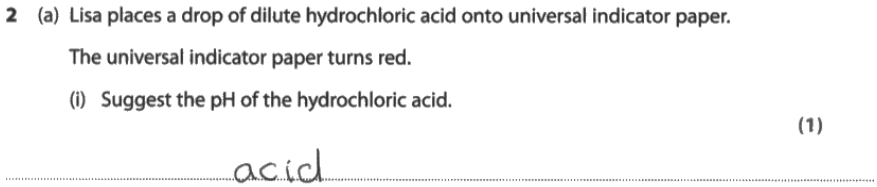
2 (a) Lisa places a drop of dilute hydrochloric acid onto universal indicator paper.

The universal indicator paper turns red.

(i) Suggest the pH of the hydrochloric acid.

(1)

chorine



2 (a) Lisa places a drop of dilute hydrochloric acid onto universal indicator paper.

The universal indicator paper turns red.

(i) Suggest the pH of the hydrochloric acid.

(1)

acid

In question 2 (a)(ii), Some learners found this question difficult with a noticeable proportion leaving it blank. Some learners knew that litmus was an alternative indicator.

(ii) Name **one** other indicator that can be used to test if a solution is acidic.

(1)

litmus paper.

There were a fair proportion of learners that did not read the question carefully and gave universal indicator as their answer. As this was the indicator referred to in the stem of the question it did not gain credit.

(ii) Name **one** other indicator that can be used to test if a solution is acidic.

(1)

universal Paper

Question 2 part (b)(i) was well answered with the majority of learners showing an understanding that magnesium chloride was formed from the reaction of magnesium and hydrochloric acid to gain the mark.

(b) Lisa reacts hydrochloric acid with magnesium to produce a metal salt and a gas.

(i) Name the metal salt produced in this reaction.

(1)

magnesium chloride

Where learners did not gain the mark, it was often because they were trying to name a gas that might have been formed instead of the salt.

(b) Lisa reacts hydrochloric acid with magnesium to produce a metal salt and a gas.

(i) Name the metal salt produced in this reaction.

(1)

Hydrogen

(b) Lisa reacts hydrochloric acid with magnesium to produce a metal salt and a gas.

(i) Name the metal salt produced in this reaction.

(1)

carbon dioxide

Or for giving the name of another salt that they had come across rather than using the information in the stem of the question. Again, this gained no credit.

(b) Lisa reacts hydrochloric acid with magnesium to produce a metal salt and a gas.

(i) Name the metal salt produced in this reaction.

(1)

Rock salt

In question 2 (c), it was pleasing to see that learners have become more proficient in writing balanced symbol equations, with the better learners gaining both marks for the correct balanced equation.

(c) Lisa reacts sulfuric acid, H_2SO_4, with sodium hydroxide, NaOH, to form sodium sulfate, Na_2SO_4, and water.

Write the balanced equation for this reaction.

(2)

$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$

In some cases, learners were able to write the formula for all of the compounds successfully to gain one mark, but were not able to balance the equation to gain the second mark.

(c) Lisa reacts sulfuric acid, H_2SO_4, with sodium hydroxide, NaOH, to form sodium sulfate, Na_2SO_4, and water.

Write the balanced equation for this reaction.

(2)

$H_2SO_4 + NaOH \rightarrow Na_2SO_4 + H_2O$

Some learners did not appear to know the formula for a molecule of water and therefore produced wrote the word instead. Unfortunately, where a mix of word and symbols were used or all words. No credit could be awarded.

(c) Lisa reacts sulfuric acid, H_2SO_4, with sodium hydroxide, NaOH, to form sodium sulfate, Na_2SO_4, and water.

Write the balanced equation for this reaction.

(2)

$H_2SO_4 + 2NaOH \rightarrow NaSO_4 +$ Water

(c) Lisa reacts sulfuric acid, H_2SO_4, with sodium hydroxide, NaOH, to form sodium sulfate, Na_2SO_4, and water.

Write the balanced equation for this reaction.

(2)

Sulthyric Acid + sodium hydroxide → Sodium Sulthate + water

Learners should be taught that if a symbol equation is asked for, no credit will be awarded for an equation that includes words.

Learners found question 3b, calculating the relative atomic mass of the sample of thallium difficult, with many simply calculating the mean of 203 and 205 to come to an answer of 204. This gained no marks.

(b) A sample of the element thallium contains two isotopes.

The table shows the relative mass and percentage abundance of each isotope in the sample.

isotope	relative mass	percentage abundance
thallium-203	203	30%
thallium-205	205	70%

Calculate the relative atomic mass of this sample of thallium.

(2)

203
205 + 408 ÷ 2 = 204

relative atomic mass = 204

Another very common answer was to simply add the 203 and 205 and give an answer of 408. Again this gained no credit.

(b) A sample of the element thallium contains two isotopes.

The table shows the relative mass and percentage abundance of each isotope in the sample.

isotope	relative mass	percentage abundance
thallium-203	203	30%
thallium-205	205	70%

Calculate the relative atomic mass of this sample of thallium.

(2)

relative atomic mass = 408

In some cases learners forgot to divide their answer by 100 and so gained just 1 mark.

(b) A sample of the element thallium contains two isotopes.

The table shows the relative mass and percentage abundance of each isotope in the sample.

isotope	relative mass	percentage abundance
thallium-203	203	30%
thallium-205	205	70%

Calculate the relative atomic mass of this sample of thallium.

(2)

203 x 30 = 6'090
205 x 70 = 14'350
+
20'440

relative atomic mass = 20'440

Only the best learners were able to calculate the atomic mass using the percentage abundance of each isotope of gain full credit.

(b) A sample of the element thallium contains two isotopes.

The table shows the relative mass and percentage abundance of each isotope in the sample.

isotope	relative mass	percentage abundance
thallium-203	203	30%
thallium-205	205	70%

Calculate the relative atomic mass of this sample of thallium.

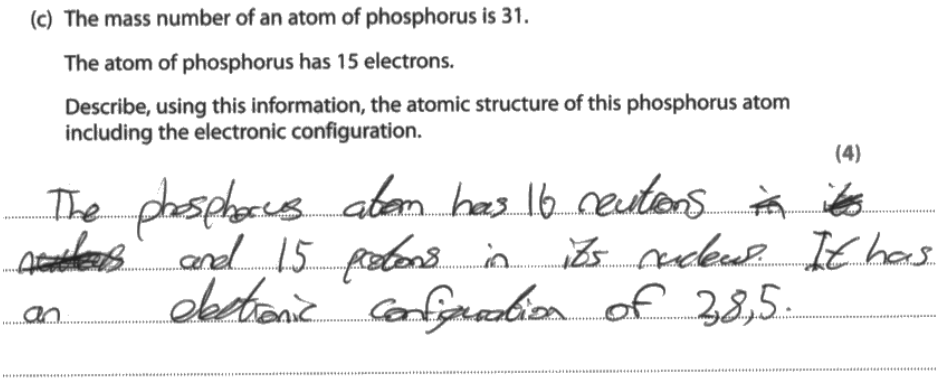
(2)

203 x 30% = 60.9
205 x 70% = 143.5 +

relative atomic mass = 204.4

It was pleasing to see that most learners were able to score on question 3 (c) with the majority being able to score at least one mark. In some cases, learners did not read the question carefully and explain what group and period phosphorous was in, which whilst correct, was not what was asked for and therefore did not gain any credit.

Better learners were able to give a concise answer that scored all four available marks.



(c) The mass number of an atom of phosphorus is 31.

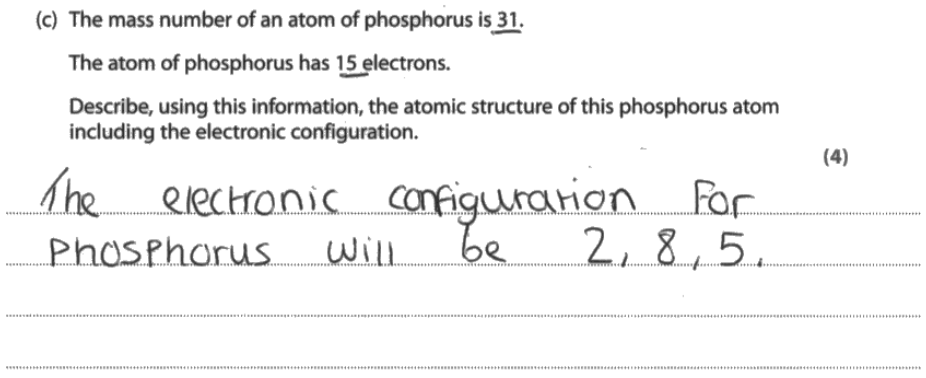
The atom of phosphorus has 15 electrons.

Describe, using this information, the atomic structure of this phosphorus atom including the electronic configuration.

(4)

The phosphorus atom has 16 neutrons ~~in its neutrons~~ and 15 protons in its nucleus. It has an electronic configuration of 2,8,5.

Other learners were able to score just 1 mark, this was often for knowing the electronic configuration of the atom.



(c) The mass number of an atom of phosphorus is 31.

The atom of phosphorus has 15 electrons.

Describe, using this information, the atomic structure of this phosphorus atom including the electronic configuration.

(4)

The electronic configuration for phosphorus will be 2, 8, 5.

In question 4(c)(i), many learners were able to score 1 mark for stating that the infra-red could damage or burn the skin.

(c) Infrared is a part of the electromagnetic spectrum.

(i) Give **one** harmful effect of excessive exposure to infrared.

(1)

skin burns

(c) Infrared is a part of the electromagnetic spectrum.

(i) Give **one** harmful effect of excessive exposure to infrared.

(1)

infrared can damage skin

A significant proportion did not gain a mark as they stated that the infra-red could cause cancer.

(c) Infrared is a part of the electromagnetic spectrum.

(i) Give **one** harmful effect of excessive exposure to infrared.

(1)

~~it~~ it can cause cancer

In question 5 (a)(i), the majority of learners were able to complete the Sankey diagram correctly to gain both marks.

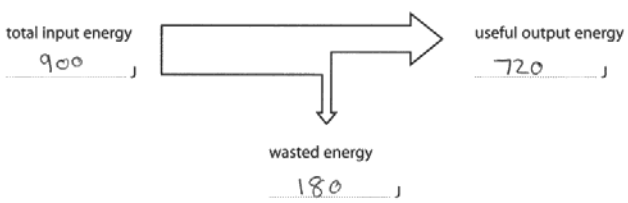
5 The image shows a laptop computer.

(a) The laptop computer has a total input energy of 900 J.

The laptop computer has a useful output energy of 720 J.

(i) Complete the diagram to show the energy transfers in the laptop computer.

(2)



In some cases, learners divided or added the total input and useful energy rather than subtracting and so gained just 1 mark.

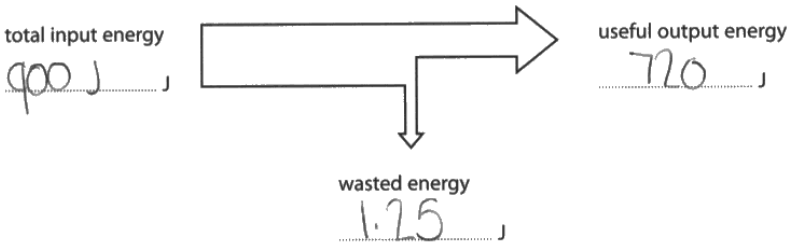
5 The image shows a laptop computer.

(a) The laptop computer has a total input energy of 900 J.

The laptop computer has a useful output energy of 720 J.

(i) Complete the diagram to show the energy transfers in the laptop computer.

(2)



Where learners did not gain the mark, it was often where they had not read the question carefully and given the types of energy rather than the amounts of energy.

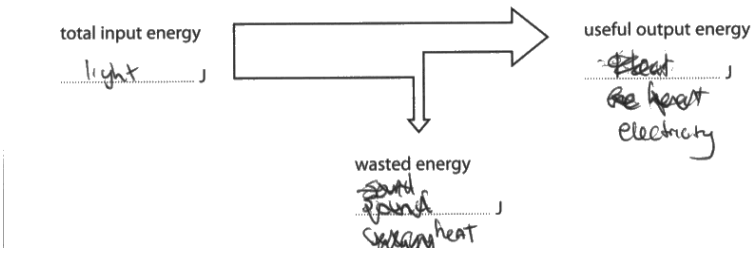
5 The image shows a laptop computer.

(a) The laptop computer has a total input energy of 900 J.

The laptop computer has a useful output energy of 720 J.

(i) Complete the diagram to show the energy transfers in the laptop computer.

(2)



Question 5(a)(ii) was well answered, with most learners being able to calculate the efficiency of the laptop computer to gain both marks.

(ii) Calculate the efficiency of the laptop computer.

$$\text{efficiency} = \frac{\text{useful energy}}{\text{total energy supplied}} \times 100\%$$

Show your working.

(2)

$\frac{720}{900} = 0.8$

$0.8 \times 100 = 80$

efficiency = 80J

Where some learners lost marks, it was because they had the useful energy and total energy supplied the wrong way around in their calculation or for forgetting to multiply by 100, in each of these cases just 1 mark was awarded.

(ii) Calculate the efficiency of the laptop computer.

$$\text{efficiency} = \frac{\text{useful energy}}{\text{total energy supplied}} \times 100\%$$

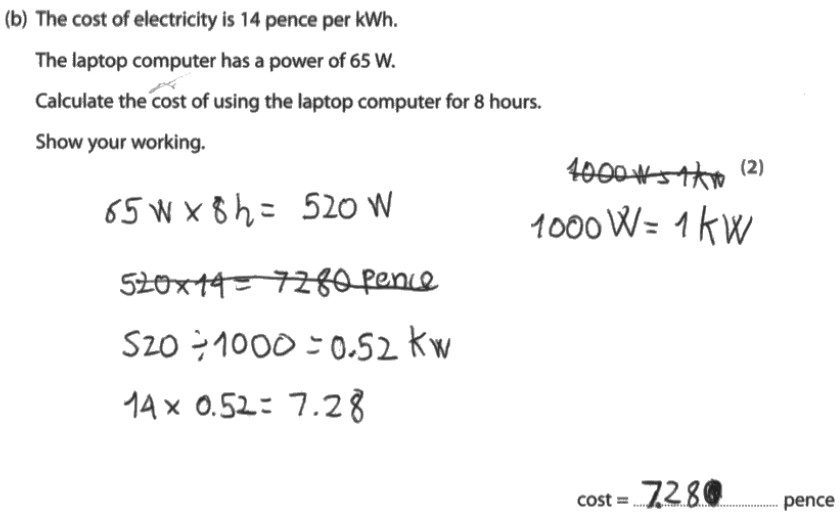
Show your working.

(2)

$\frac{900}{720} \times 100 = 125$

efficiency = 125

Question 5(b) proved difficult for many learners, with only the better learners scoring both marks.


(b) The cost of electricity is 14 pence per kWh.

The laptop computer has a power of 65 W.

Calculate the cost of using the laptop computer for 8 hours.

Show your working.

(2)

~~1000W = 1kW~~

65 W x 8h = 520 W

1000W = 1 kW

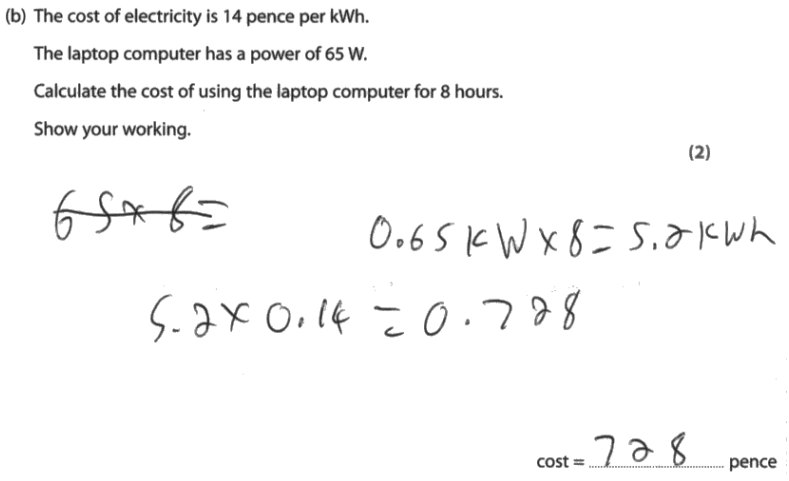
~~520 x 14 = 7280 pence~~

520 ÷ 1000 = 0.52 kW

14 x 0.52 = 7.28

cost = 7280 pence

A common error seen was where the learner had forgotten to convert the watts to kilowatts, or done this incorrectly, therefore making their answer a factor of 10 out. These answers scored 1 mark.


(b) The cost of electricity is 14 pence per kWh.

The laptop computer has a power of 65 W.

Calculate the cost of using the laptop computer for 8 hours.

Show your working.

(2)

~~65 x 8 =~~

0.65 kW x 8 = 5.2 kWh

5.2 x 0.14 = 0.728

cost = 728 pence

Question 6 was the first of the two six mark questions with a points based mark scheme. In general, learners found this question difficult with few learners being able to give a full explanation of why the metal pin falls when the metal rod is heated.

However, many learners did show an understanding that it was because the wax had melted that the pin fell off and therefore were able to gain at least one mark.

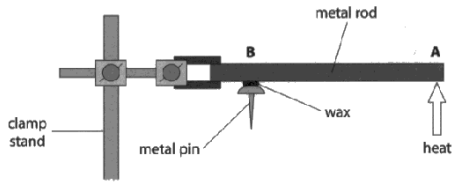
Many also showed an appreciation that the energy transfer involved was conduction. Learners found taking this any further quite difficult. Some learners did understand that the heat energy made the particles vibrate, but failed to appreciate that the particles would be vibrating anyway and so did not state that they would start to vibrate more, or faster or words to that effect. A small number of these learners did then go on to gain credit for stating that these vibration were passed onto neighboring particles to transfer the energy. A common error was to talk about heat particles moving which shows a lack of understanding and was not given credit.

She sets up a clamp stand with a metal rod attached.

She attaches a metal pin to the metal rod at point **B**, using wax.

She heats the rod at point **A** with a Bunsen burner.

After a few minutes, the metal pin falls off.



Explain, in terms of particles and energy transfer, why the metal pin falls off when the metal rod is heated.

(6)

When the Bunsen Burner heats up the metal rod, the heat is travels through conduction causing the particles to vibrate as the particles vibrate it causes the particles near it to vibrate when it reaches the wax. The wax gets heated and the wax starts to melt and the pin drops

In this example, the learner scored 4 marks. The learner has stated that the Bunsen heats the metal rod, but this is already stated in the question and so gained no credit. They have gone on to state that the heat travels through conduction and explained that this causes the particles to vibrate, unfortunately there is no reference to the particles vibrating more or faster and so no credit was awarded for this. However they go on to say that the

vibrations cause the particles near it to vibrate which gained credit. They say that the wax gets heated was deemed sufficient for the heat energy moving to wax and that this causes the wax to melt.

In this example. The learner scored 2 marks, they have stated that the flame from the Bunsen burner has heated up the metal rod and that the wax melts.

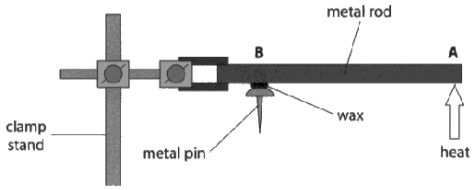
6 Olivia investigates energy transfers using the apparatus shown.

She sets up a clamp stand with a metal rod attached.

She attaches a metal pin to the metal rod at point **B**, using wax.

She heats the rod at point **A** with a Bunsen burner.

After a few minutes, the metal pin falls off.



Explain, in terms of particles and energy transfer, why the metal pin falls off when the metal rod is heated.

(6)

The flame from the Bunsen burner is able to heat up the metal rod to a very high temperature that the wax will not stay solid, and eventually melt so it will have no support for the metal pin. Therefore, the result is that the metal pin will fall off due to the heat melting away the wax.

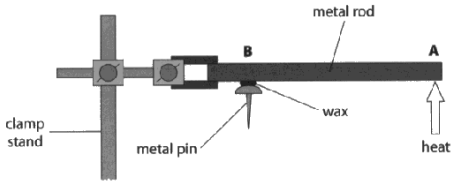
6 Olivia investigates energy transfers using the apparatus shown.

She sets up a clamp stand with a metal rod attached.

She attaches a metal pin to the metal rod at point **B**, using wax.

She heats the rod at point **A** with a Bunsen burner.

After a few minutes, the metal pin falls off.



Explain, in terms of particles and energy transfer, why the metal pin falls off when the metal rod is heated.

(6)

Olivia puts the ~~metal~~ metal ~~pe~~ pin their in B and it holding up by the wax because the A is the point with the Bunsen Burner. But when metal pin is on the wax it falls because

In this final example, the learner scored no marks.

Many learners found question 7(b) straightforward and were able to score at least one if not both of the available marks.

As in this example that gained both marks.

(b) The maintenance of a constant internal environment in the human body is known as homeostasis.

Give **two** homeostatic mechanisms that increase body temperature.

(2)

1 hair sticks up

2 Shivering

This example scored just 1 mark.

(b) The maintenance of a constant internal environment in the human body is known as homeostasis.

Give **two** homeostatic mechanisms that increase body temperature.

(2)

1 sweating

2 Shivering

In some cases learners did not read the question carefully and gave ways or ideas about how the body temperature could be increase, such as wearing a coat or standing in the sun. These answers gained no marks.

(b) The maintenance of a constant internal environment in the human body is known as homeostasis.

Give **two** homeostatic mechanisms that increase body temperature.

(2)

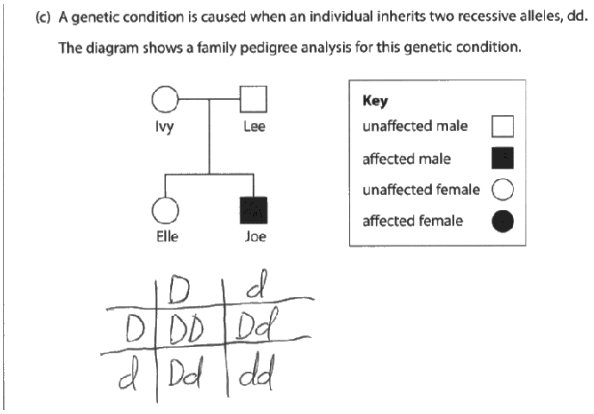
1 Wearing ~~too~~ many layers..

2 being in direct sunlight for too long.

It was pleasing to see that most learners were able to access some marks on question 8(c), with a fair proportion scoring the full 4 marks available.

Many were able to draw the correct Punnett square or showed an understanding that Joe must have a genotype of 'dd' to gain one mark. A common error seen were where the learner tried to use their common knowledge rather than the science that they had been taught. Often learners referred to Joe inheriting the condition from his grandparents as it 'skips a generation'. Other common misconceptions seen were that both genes were inherited from parent or that Elle must have inherited the first allele, D and Joe the second which must have been d or that Joe inherited the alleles from his father, because he was a boy and Elle inherited the alleles from her mother, because she was a girl.

This example scored 4 marks. The correct Punnett square has been drawn. The learners states that both parents are carriers and that the Punnett square shows that there is a 25% chance of a child being affected, they also state that Joe has inherited two recessive alleles and that Elle has inherited one dominant allele, this answer is more than sufficient for the four available marks.


(c) A genetic condition is caused when an individual inherits two recessive alleles, dd.

The diagram shows a family pedigree analysis for this genetic condition.

	D	d
D	DD	Dd
d	Dd	dd

Explain why Joe is affected with the genetic condition but Elle is not.

Use the pedigree analysis diagram provided.

You may draw Punnett squares to help you.

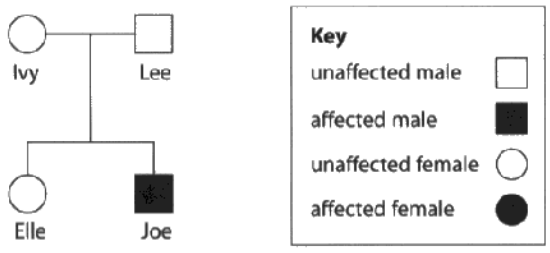
(4)

For Joe to be affected by the disease that means that his parents must both be carries. A punnett square shows that there is a 25% chance of a child being affected by the illness. The [redacted] This means that Elle is also a carrier. The reason Elle isn't affected but Joe is affected because Elle has inherited a dominant allel whereas Joe has inherited two recessive alleles.

This next example scored 2 marks. The learner has stated that Joe has inherited two recessive alleles and that Elle has inherited Dd. The fact that the learner believes that both alleles were inherited from his mother does not detract from the fact that they understand which alleles were inherited and was therefore ignored.

(c) A genetic condition is caused when an individual inherits two recessive alleles, dd.

The diagram shows a family pedigree analysis for this genetic condition.



Explain why Joe is affected with the genetic condition but Elle is not.

Use the pedigree analysis diagram provided.

You may draw Punnett squares to help you.

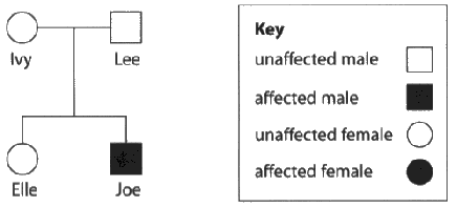
(4)

Joe has inherited the two recessive alles from his ~~dad~~ mum. When as elle has dominant as did not inherit the recesive alle dd she got Dd

This last example gained no marks. The learner has discussed how the condition may have skipped a generation, but there is no explanation of how this might have happened and why Joe may have been affected by the condition but Elle did not.

(c) A genetic condition is caused when an individual inherits two recessive alleles, dd.

The diagram shows a family pedigree analysis for this genetic condition.



Use the pedigree analysis diagram provided.

You may draw Punnett squares to help you.

(4)

The diagrams shows that Joe has been affected with the genetic condition. Joes parents don't have the condition But his grandfather may have had the condition. Joe would have got it because it skipped his dad and ~~every~~ then the condition ~~the~~ pass on to Joe. Since it is a genetic condition, only male will get the condition Elle is a female so she cannot get the condition only the males in the family could get it. If Joe has any grandchildren when's older, the male may inherrit the genetic condition.

Question 9 is the second of the six mark question, but this with a levels based mark scheme. As in the other six mark question, many learners were able to gain some credit in this question. It discriminated very well, with the weaker learners gaining just 1 or two marks, for giving some adaptations or explaining one adaptation up to the strongest learners who were able to explain, in detail, how the leaves, leaf structure and leaf cell components are adapted for photosynthesis.

Where learners did not score, it was often because they had not read the question carefully and tried to describe photosynthesis and its role, often repeating much of the stem of the question rather than how the leaf is adapted for photosynthesis.

As part of their answers, learners often confused the role of the xylem and the phloem. Many learners were able to recall that leaves had stoma and guard cells, but were often confused about their role.

In this example, the learner has explained the adaptations of the phloem, xylem, stomata and guard cells, this was worthy of full credit and the learner scored level 3 - 6 marks

9 Photosynthesis happens in the leaf of a plant.

The equation for photosynthesis is shown.

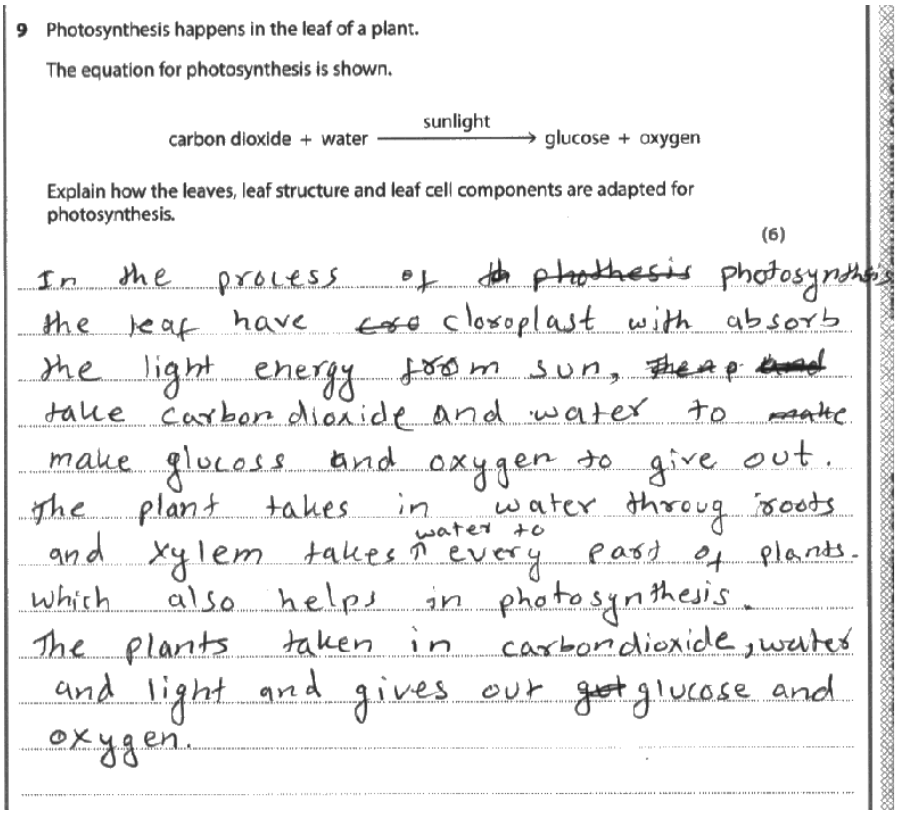
$$\text{carbon dioxide} + \text{water} \xrightarrow{\text{sunlight}} \text{glucose} + \text{oxygen}$$

Explain how the leaves, leaf structure and leaf cell components are adapted for photosynthesis.

(6)

Inside the stem there are the Phloem and Xylem tubes. The Phloem tubes carry glucose (sugar) up and down the stem and the xylem tubes carry water and minerals up and down the stem. underneath the leaves are tiny holes called the stomata which let gasses in and out of the plant for Photosynthesis. outside the stomata are guard cells which change shape to open and close to let gasses in and out. Transpiration is when a plant loses water through evaporation and there are three steps to transpiration which are Water evaporates from the plant through the stomata then water is goes up through the xylem tubes in the stem to the leaves and the water is taken up from the roots. Photosynthesis helps the plant grow by sending sunlight to the plant to create glucose and oxygen to help the plant survive

In this next example, the learner has explained that the leaf has chloroplasts that absorb light from the sun and that the xylem carries water around the plant - this was deemed sufficient for the xylem carrying water to the leaf. These explanations of the adaptations are worthy of 4 marks in level 2.



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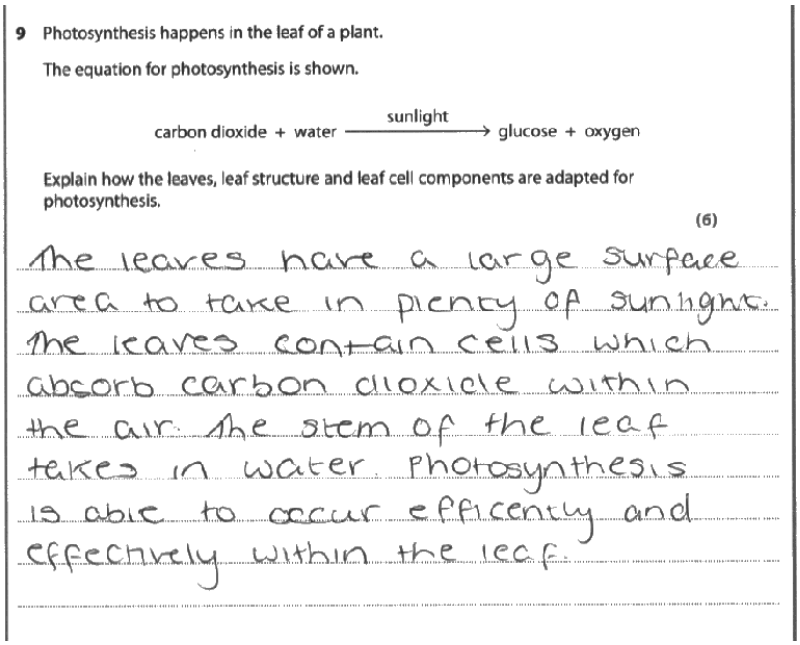
(6)

In the proless of ~~th phothesis~~ photosynthesis the leaf have ~~cso~~ cloroplast with absorb the light energy from sun, ~~the p~~ take carbon dioxide and water to ~~make~~ make glucoss and oxygen to give out. the plant takes in water throug roots and xylem takes water to every part of plants. which also helps in photosynthesis. The plants taken in carbondioxide, water and light and gives out ~~got~~ glucose and oxygen.

In this next example, the learner has just one adaptation explained, that the leaf has a large surface area to take in plenty of sunlight, this answer gained level 1- 2 marks.



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The equation for photosynthesis is shown.

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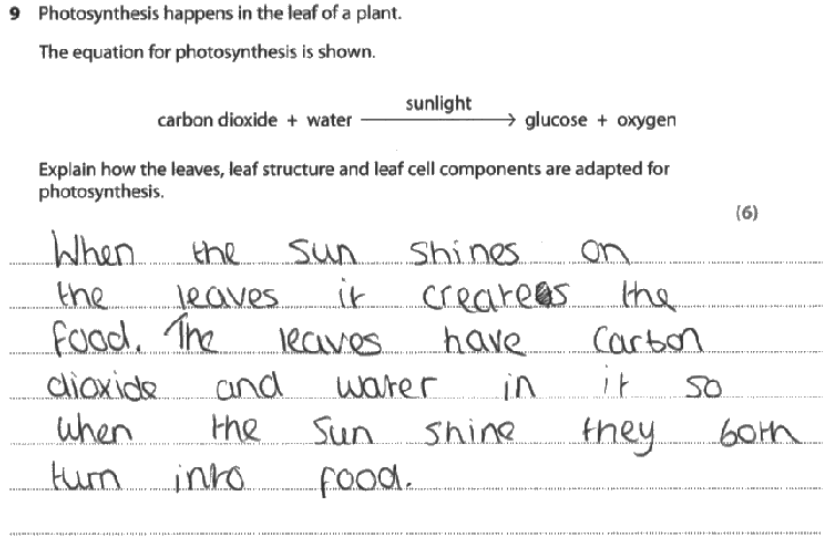
Explain how the leaves, leaf structure and leaf cell components are adapted for photosynthesis.

(6)

The leaves have a large surface area to take in plenty of sunlight. The leaves contain cells which absorb carbon dioxide within the air. The stem of the leaf takes in water. Photosynthesis is able to occur efficently and effectively within the leaf.

Many learners described the word equation given or stated why photosynthesis happens, there was no credit awarded for this.



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When the Sun shines on the leaves it creates the food. The leaves have carbon dioxide and water in it so when the Sun shine they both turn into food.

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