ResultsPlus

edexcel

Examiners' Report
March 2013

GCSE Physics 5PH1F 01

ALWAYS LEARNING

PEARSON

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk for our BTEC qualifications.

Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

If you have any subject specific questions about this specification that require the help of a subject specialist, you can speak directly to the subject team at Pearson.

Their contact details can be found on this link: www.edexcel.com/teachingservices.

You can also use our online Ask the Expert service at www.edexcel.com/ask. You will need an Edexcel username and password to access this service. See the ResultsPlus section below on how to get these details if you don't have them already.

ResultsPlus

Giving you insight to inform next steps

ResultsPlus is Edexcel's free online service giving instant and detailed analysis of your students' exam results.

- See students' scores for every exam question
- Understand how your students' performance compares with class and Edexcel national averages
- Identify potential topics, skills and types of question where students may need to develop their learning further.

For more information on ResultsPlus, or to log in, visit www.edexcel.com/resultsplus.

Your exams officer will be able to set up your ResultsPlus account in minutes using Edexcel Online.

Pearson: helping people progress, everywhere

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk.

March 2013

Publications Code UG035109

Introduction

This unit of the new specification has now been examined three times. The unit is divided into six topics and all six topics are tested in the examination.

The question paper should allow every candidate to show what they know, understand and are able to do. To achieve this, each paper is designed to increase in difficulty as a candidate progresses through it. Within the paper, a variety of questioning styles is included, such as objective questions, short answer questions worth 1 or 2 marks each and longer questions, each worth 3, 4 or 5 marks. The two 6-mark questions are designed also to test the quality of written communication.

The overall impression of the examiners was that the majority of candidates coped well with this examination.

Successful candidates were:

- well-grounded in the fundamental knowledge required
- willing to think through the possibilities and apply their knowledge when the question asked for suggestions to explain new situations
- able to tackle calculations methodically and show the stages in their working
- able to construct their explanations in a logical order, using the mark allocations given beside the parts of each question as a guide.

Less successful candidates:

- had gaps in their knowledge
- did not read the questions carefully, and gave answers that were related to the topic being tested, but did not answer the question
- did not understand the meaning of key scientific words and phrases
- found difficulty in applying their knowledge to new situations
- did not show the stages in their working
- did not think through their answers before writing.

This report will provide exemplification of candidates' work, together with tips and/or comments, for a selection of questions. The exemplification will come mainly from questions which required more complex responses from candidates.

Lenses and waves

Question 1(a)(i)

The majority of candidates (about 70%) correctly identified the distance X as the focal length of the lens.

Question 1(a)(ii)

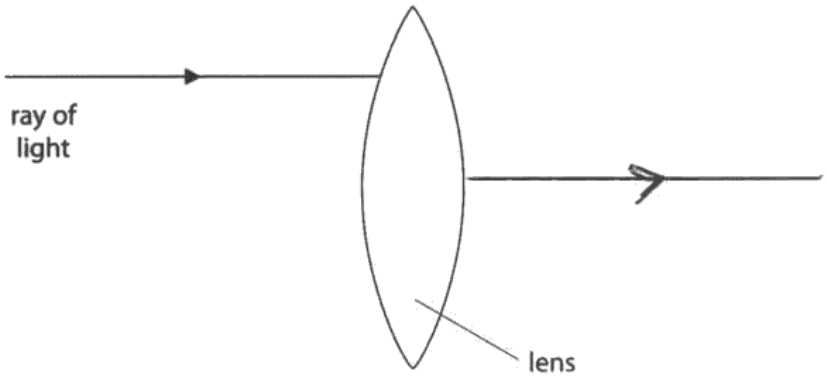
The majority of candidates (about 60%) correctly identified the image as smaller than the object, but only about a quarter correctly named the image as real. The most common error was to say the type of image was virtual.

Question 1(b)

Most candidates scored the mark for this question, but among those who did, many sent the ray in a completely incorrect direction. For non-scorers, a vertical line bisecting the lens was surprisingly popular, as was a ray emerging on the far side after disappearing while implicitly passing through the lens.

There were a considerable number of candidates who did not attempt this question.

(b) The diagram shows a ray of light as it arrives at a lens.



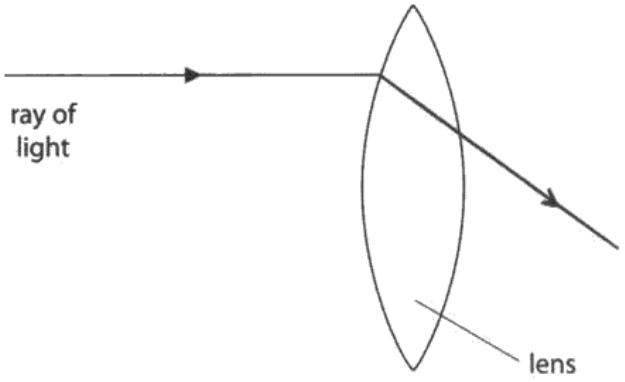
Draw the path of the ray inside the lens.

(1)

ResultsPlus
examiner comment

This is an example showing no ray drawn inside the lens and so no mark was awarded.

(b) The diagram shows a ray of light as it arrives at a lens.



Draw the path of the ray inside the lens.

(1)

ResultsPlus
examiner comment

This candidate shows a correct refraction inside the lens so was awarded the mark for this question.

The mark scheme reminds examiners to ignore emergent rays as the question is about the path of the ray inside the lens.

Question 1(c)

Almost all candidates managed full marks on this question.

Many candidates did not show evidence of their calculation and a few had one too many/few zeros in their answer and so lost one mark.

(c) The students use a telescope to view the Moon.

Light from the Moon takes 1.3 s to reach the students.

The speed of light is 300 000 km/s.

Calculate the distance to the Moon.

(2)

distance = speed × time

distance = speed × time

? = 300 000 × 1.3

= 390000

distance to the Moon = 390000 km

ResultsPlus
examiner comment

In this correct response the candidate showed their working. 2 marks were awarded.

(c) The students use a telescope to view the Moon.

Light from the Moon takes 1.3 s to reach the students.

The speed of light is 300 000 km/s.

Calculate the distance to the Moon.

(2)

distance = speed × time

distance to the Moon = 195000 km

ResultsPlus
examiner comment

With no working this candidate scored zero but seems to have halved the correct answer. With working shown the substitution mark could possibly have been awarded.

ResultsPlus
examiner tip

Always show your working. You can still get marks for correct working even if your final answer is wrong.

Energy transfers

Question 2 (a)(i)

The majority of candidates correctly answered all parts of this question.

Question 2(a)(ii)

Most candidates correctly stated that the energy is wasted or transformed into heat energy, although there were a few candidates who incorrectly stated that it is transferred to chemical energy or recycled back to the motor.

Question 2(b)(i)

The majority of candidates scored the mark for this calculation.

Question 2(b)(ii)

Generally the concept of efficiency was very well understood. Most candidates had the right idea of equal amounts of energy input linked to greater light/more useful output from that energy.

It was pleasing to see a number of candidates manipulating data to further their explanations.

(ii) Use the energy transfer diagrams to explain why the CFL lamp has a better efficiency rating than the halogen lamp.

(2)

The CFL lamp takes in the same amount of electrical energy but creates much more light energy which is the main purpose of a lamp.

ResultsPlus
examiner comment

This is an example of the type of response examiners were hoping to see and it was awarded both marks.

(ii) Use the energy transfer diagrams to explain why the CFL lamp has a better efficiency rating than the halogen lamp.

(2)

Because a lot more light energy is being transfered in one second than the halogen lamp.

ResultsPlus
examiner comment

2 marks were allocated for this question, which indicates that two suggestions were required. This candidate only gave one suggestion so only 1 mark was awarded.

ResultsPlus
examiner tip

Candidates should use the mark allocation as a guide. They need to make as many correct statements as there are marks available.

(ii) Use the energy transfer diagrams to explain why the CFL lamp has a better efficiency rating than the halogen lamp.

(2)

The CFL lamp has a better efficiency rating because 8J out of 20J is used usefully whereas in the halogen lamp only 2J out of 20J is used usefully. Therefore the halogen lamp wastes more energy giving it a worse efficiency rating.

ResultsPlus
examiner comment

This response covers all three possible marking points and makes use of the data supplied so easily scores the maximum 2 marks.

Question 2(c)

The majority of candidates found this question a little challenging. Most candidates wrote about overheating and catching fire. They didn't mention the heat energy being dissipated by the heater, electrical energy being put in or any energy transfer or idea of flow.

The idea of a thermostat came up quite often, both in the heater and somehow in the room telling the heater that the room was hot enough, though this was not specified as a wall thermostat. Also room temperature was mentioned quite often.

When the heater is switched on, it quickly warms up and then stays at a constant temperature.

Explain why the heater stays at a constant temperature.

(2)

The heater stays at a ~~constant~~ constant temperature because as ~~energy~~ heat energy is disapated to ~~the~~ surrandings, more ~~energy~~ electrical energy is transfered into heat energy, taking the place of the heat energy that was lost.

(Total for Question 2 = 9 marks)

ResultsPlus
examiner comment

This is an example of the type of response that examiners were hoping for and it was awarded both marks.

When the heater is switched on, it quickly warms up and then stays at a constant temperature.

Explain why the heater stays at a constant temperature.

(2)

If the heater goes any higher it will burn & Causes fires.

(Total for Question 2 = 9 marks)

ResultsPlus
examiner comment

This is a weak response and no marks were awarded.

When the heater is switched on, it quickly warms up and then stays at a constant temperature.

Explain why the heater stays at a constant temperature.

(2)

Because if it gets hotter and hotter and it is near to flamable liquids it will blow up.

(Total for Question 2 = 9 marks)

ResultsPlus
examiner comment

This is a typical weak response that received no marks as the candidate did not answer the question.

Electromagnetic radiation

Question 3(a)

The majority (about 90%) of candidates correctly gave the temperature of thermometer **Q** as 18 (degrees Celsius).

Question 3(b)(i)

Most candidates failed to score on this question. Whilst many stated that black absorbs heat (as do many surfaces) they failed to state it is the best/a good absorber (of thermal energy). Other popular but incorrect responses were: 'black is a good conductor' or 'black attracts heat'.

Question 3(b)(ii)

It was not uncommon for the temperatures of thermometers S, R, Q and P to simply be described (i.e. just restating the results) rather than linking the results to the spectrum of sunlight. The idea of different colours having different heating effects was given by average ability and above candidates. The idea of radiation beyond the red end of the spectrum was only given by the strongest candidates.

The following is one of the few responses giving both points.

Describe conclusions that can be made from the students' results.

(2)

That the temperature is getting hoter the closer you ~~do~~ get to red and ~~over~~ when you ~~do~~ go past red it continues to get hotter which is because of Infrared.

ResultsPlus
examiner comment

The candidate has made as many correct statements as there are marks available so both marks were awarded for this answer.

Describe conclusions that can be made from the students' results.

(2)

it hotter to the start of the spectrum and as it goes further down the spectrum it gets colder

ResultsPlus
examiner comment

This response was considered sufficient for demonstrating the idea of different colours having different heating effects and was awarded 1 mark.

ResultsPlus
examiner tip

As before, candidates should use the mark allocation as a guide. They need to make as many correct statements as there are marks available.

Question 3(b)(iii)

This question was well answered, with some very clearly thought-out explanations. However, there was much evidence of confusion between heat and temperature. Some candidates stated that there would be no heat in the shade or that the temperature there would be 'zero degrees'.

Question 3(c)(iii)

The majority of candidates were able to score a mark for identifying a use of UV. The use of UV in sunbeds was well known and was used in many responses. Many were limited to 1 mark because they didn't accurately explain how the UV worked in the named context.

(iii) Describe **one** use of ultraviolet radiation.

(2)

Ultraviolet is used to detect forged bank notes.

ResultsPlus
examiner comment

This answer was awarded 1 mark as the question asked for a description so more is required for both marks.

(iii) Describe **one** use of ultraviolet radiation.

(2)

one use of ultra violet radiation could be sun beds for people to tan there skin

ResultsPlus
examiner comment

This candidate describes the use of UV 'to tan the skin' and so gains both marks.

Using sound waves

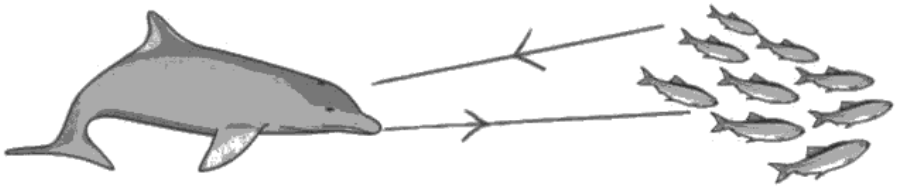
Question 4(a)(ii)

Many candidates scored full marks, usually by adding to the diagram, which gave the first three marking points. Some candidates believed that the dolphins were communicating to the fish or the other way round and others that the sound waves have to bounce off the seabed before getting to the fish or the dolphin. A few candidates also talked in terms of the dolphin 'following sound' made by the fish or referred to the dolphin/fish looking for sound.

This is a good example of the high standard of response that examiners saw from some candidates.

You may add to the diagram to help with your answer.

(3)



The dolphin gives off ultrasound and it travels through the water and when it reaches the fish it reflects off them and the dolphin can detect the ultrasound waves that are being reflected back.

ResultsPlus
examiner comment

This response scored all 3 marks.

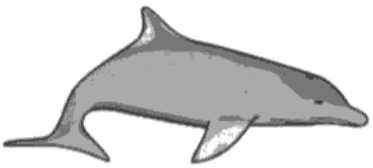
ResultsPlus
examiner tip

Candidates could be encouraged to use diagrams in this type of question as those who did often gained all 3 marks.

You may add to the diagram to help with your answer.

(3)

DOLPHIN



FISH

Because when the fish move they give off tiny sound waves which the dolphin can track to the position of the fish

ResultsPlus
examiner comment

Responses such as this did not score any marks and was a common response to the question.

Question 4(b)

There was generally a good understanding shown in answers to this question.

However, some candidates were confused and saw the graph as a diagram of the ocean and talked of ultrasound getting 'deeper down in the ocean'.

Whales use sound to communicate over long distances.

Explain which is the best type of sound wave for whales to use when communicating over long distances.

(2)

Infrasand because it will be easier for the whales to communicate with each other.

ResultsPlus
examiner comment

The candidate has identified the correct sound wave but has given an incorrect explanation. This response was awarded 1 mark.

Whales use sound to communicate over long distances.

Explain which is the best type of sound wave for whales to use when communicating over long distances.

(2)

Ultrasound So whales Can Communicate over long distances.

ResultsPlus
examiner comment

This candidate has given the wrong type of sound wave and the explanation is merely a restating of the question. Hence, no marks were awarded.

Whales use sound to communicate over long distances.

Explain which is the best type of sound wave for whales to use when communicating over long distances.

(2)

infrasound because its amplitude stays the biggest as it travel through the water.

ResultsPlus
examiner comment

This response was awarded both marks as the candidate chose the correct type of sound wave and gave a correct explanation.

Question 4(c)(ii)

This was the most incorrectly answered question on the paper. Many incorrect answers often involved candidates saying 'because oil was a liquid' or 'the waves cannot pass through the oil'.

Below is one of the few responses that was awarded the mark.

(ii) A small explosion is triggered at the Earth's surface.
The waves reflect back from the top of the oil field.

Suggest why the waves are reflected from the oil field.

(1)

because the oil field is denser.

ResultsPlus
examiner comment

The candidate stated the oil field is more dense and so gained the mark.

Question 4(d)

All except the weakest candidates scored 2 marks. A common incorrect answer was 8.33 (because of 125 ÷ 15).

The unit mark was awarded much less frequently, 'Hz' or 'V' were popular errors, 'mps' was also a common incorrect response.

(d) A wave has a frequency of 15 Hz.
Its wavelength is 125 m.

Calculate the speed of the wave.

State the unit.

equal.

Speed = frequency x wavelength

$V = f \times \lambda$ (3)

$V = 15 \times 125$

speed of wave = 1,875

unit = Volts

ResultsPlus
examiner comment

This is an example of a typical 2-mark response. Clearly the candidate thinks that the 'V' in the formula represents voltage.

(d) A wave has a frequency of 15 Hz.
Its wavelength is 125 m.

15 x 125 = 1500 / 125

Calculate the speed of the wave.

State the unit.

(3)

speed of wave = 1625 ~~130~~

unit = ~~Hz~~ (m/s)

ResultsPlus
examiner comment

This response gained 2 marks – 1 mark for the correct substitution and 1 mark for the correct unit for speed.

Investigating the Universe

Question 5(b)

Over half of the candidates were awarded both marks for this question and about a fifth gained one mark.

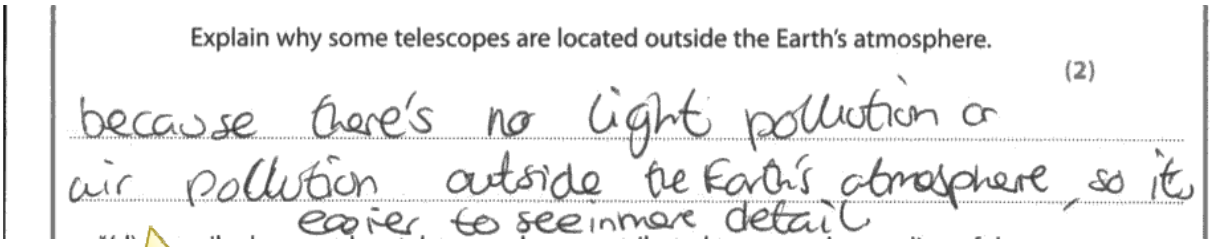
Question 5(c)(i)

Just over half of the candidates correctly identified part **Q** of the spectrum as infrared.

Question 5(c)(ii)

It was more usual for candidates to score one of the two available marks for a simple statement about the image being 'clearer', but few developed the argument further to score the second mark. Stronger candidates generally gave very clear answers, demonstrating a proper understanding of the issues involved, but these were not common. Responses were often too vague, such as 'gathering more information', 'seeing other forms of life' or 'see further'.

Many weaker responses were confused about scale and candidates believed that putting telescopes in space would bring them significantly closer to objects such as planets and stars.


Explain why some telescopes are located outside the Earth's atmosphere.

(2)

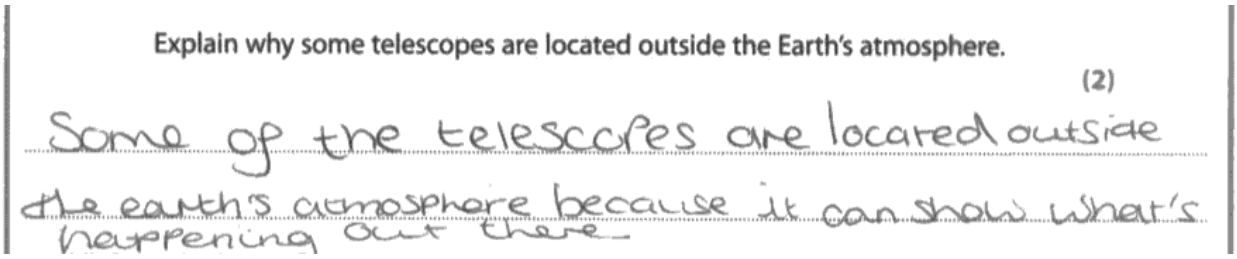
because there's no light pollution or air pollution outside the Earth's atmosphere, so it's easier to see in more detail

ResultsPlus
examiner comment

This response scored 2 marks for 'no light pollution' and 'no air pollution'.
There is also the idea of the image being more detailed.

ResultsPlus
examiner tip

Candidates should use the mark allocation as a guide. They should make as many correct statements as there are marks available.


Explain why some telescopes are located outside the Earth's atmosphere.

(2)

Some of the telescopes are located outside the earth's atmosphere because it can show what's happening out there.

ResultsPlus
examiner comment

Responses such as this did not score any marks and were fairly common.

Question 5(d)

Many less able candidates ignored 'modern telescopes' and responded by discussing geocentric/heliocentric models of the solar system and in particular, Jupiter's moons. A discussion of the origin of the Universe, the Big Bang, etc, was also popular.

Other responses were too generalised, referring to alien life forms, other universes and the possibility of colonising other planets.

The answers from the most able candidates discussed higher magnification, clearer images, use of photography, the discovery of new planets, use of different electromagnetic waves and the positioning of telescopes outside the atmosphere. Most candidates seemed to enjoy writing about this topic.

A few candidates got side-tracked into discussing 'what' rather than 'how', demonstrating the need for candidates to carefully read the question.

*(d) Describe how modern telescopes have contributed to our understanding of the Universe.

(6)

Modern telescopes are better than the naked eye they magnify things making them seem closer to us this helps as we can observe smaller detail we can also leave them connected to a laptop, the telescope can then pick up on the smallest of movement as lots of pictures, we can then come back and observe what has happened. Modern telescopes can also be sent into space where there is less pollution this means the image is clearer than on earth. when the telescope is in space it is also closer and we can see smaller things happening in which we can not see on earth using either a telescope or naked eye.

(Total for Question 5 = 12 marks)

ResultsPlus
examiner comment

The candidate gives a detailed description including at least three improvements and was awarded 6 marks.

*(d) Describe how modern telescopes have contributed to our understanding of the Universe.

(6)

Modern telescopes have a clearer image so you are able to see things you might not of been able to see with the old telescopes. Also now telescopes can be put in space so you can see more distance objects you would not be able to see from Earth.

ResultsPlus
examiner comment

This candidate has identified two examples of improvements with the idea of modern telescopes producing a clearer image and that they can be 'put in space', this is sufficient at this level for orbital telescopes. This is a typical Level 2 response and scored 4 marks.

*(d) Describe how modern telescopes have contributed to our understanding of the Universe.

(6)

The Modern telescopes have contributed as the images and magnification are getting better so than they can see further out in to the Solar System.

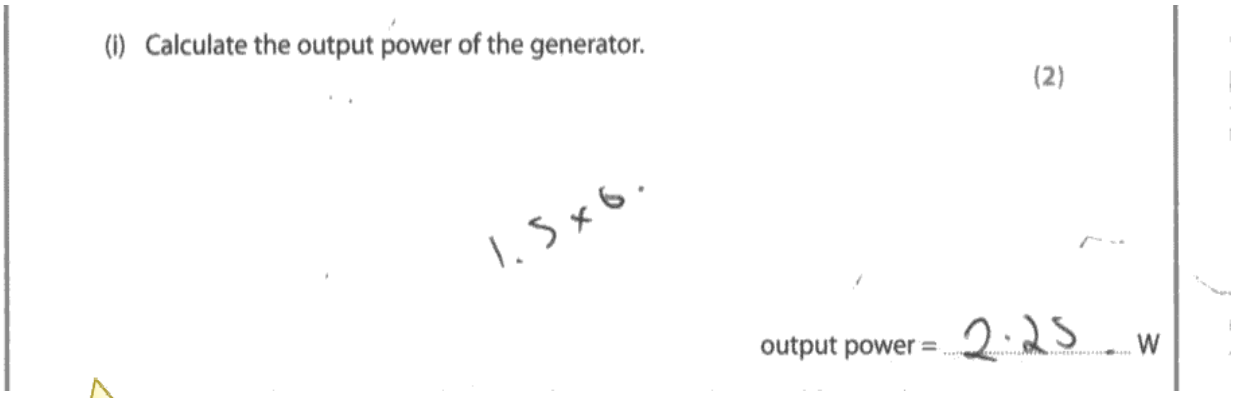
ResultsPlus
examiner comment

The candidate has the idea of modern telescopes giving higher magnification. The idea of being able to see further was not credited. This is a typical Level 1 response and scored 2 marks.

The generation of electricity

Question 6(a)(i)

Most candidates gained both marks for this calculation. The most common mistakes involved dividing or adding rather than multiplying.


(i) Calculate the output power of the generator.

(2)

1.5 × 6.

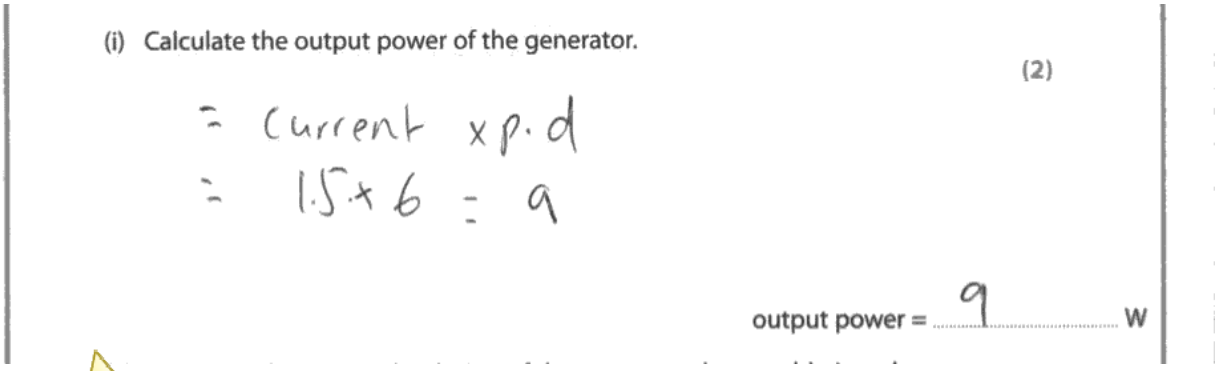
output power = 2.25 W

ResultsPlus
examiner comment

This is an example of where showing working enabled the candidate to score 1 mark (for the correct substitution of values read from the question). If this candidate had just written 2.25 on the answer line and nothing else, then no marks could have been awarded.

ResultsPlus
examiner tip

Candidates should always show their working. If they get the answer correct with no working then they will get full marks but if their answer is wrong with no working they will get zero.


(i) Calculate the output power of the generator.

(2)

= Current x p.d

= 1.5 x 6 = 9

output power = 9 W

ResultsPlus
examiner comment

This is a well laid out example of a candidate showing their working. 2 marks were awarded.

(i) Calculate the output power of the generator.

(2)

6V ÷ 1.5A = Output power

Output power = 4w

output power = 4 W

ResultsPlus
examiner comment

This candidate used the wrong equation and may have confused the equation for electrical power with that for electrical resistance. This was a common mistake. This response did not score any marks.

Question 6(a)(ii)

The most common errors were 'bigger magnet', 'rotate the magnet faster' and 'bigger coil', in that order. A worrying number of candidates suggested 'better battery', 'stronger current', 'shorter wires/distance between components' and even worse 'move the/use a more powerful ammeter/voltmeter'.

(ii) State two changes to the design of the generator that would give a larger output power for the same speed of rotation.

(2)

1 include more coils of wire to make the field stronger

2 include a more powerful(stronger) magnet

ResultsPlus
examiner comment

This response scored both marks. 'More coils' was accepted as a weak interpretation of 'wrapping more turns on the coil'.

(ii) State two changes to the design of the generator that would give a larger output power for the same speed of rotation.

(2)

1 size of the magnet

2 coil of wire

ResultsPlus
examiner comment

The candidate has not identified a 'more powerful' magnet or 'increasing' the number of turns on the coil and so scored no marks.

(ii) State two changes to the design of the generator that would give a larger output power for the same speed of rotation.

(2)

1 more coils of wire

2 spin magnet faster

ResultsPlus
examiner comment

'More coils of wire' was an acceptable interpretation of 'more turns on the coil' and so 1 mark was awarded.

The question states that the speed of rotation is constant and so the second point did not score.

Question 6(a)(iii)

Many candidates clearly had oscilloscope trace images in mind when answering this question, talking about waves going up and down for AC and straight for DC. The idea that direct current 'goes straight to where it's needed' was common, but probably improvised when memory failed rather than learned incorrectly.

AC was often described as 'going in all directions'.

(iii) This generator supplies an alternating current (AC) to the lamp.
Other types of generators supply a direct current (DC).
Describe the difference between charge movement in a direct current and in an alternating current.

(2)

an alternating current changes directions ~~but~~ but a direct current goes in one direction.

ResultsPlus examiner comment

This response scored both marks as 'changes direction' was deemed acceptable for reversing direction.

(iii) This generator supplies an alternating current (AC) to the lamp.
Other types of generators supply a direct current (DC).
Describe the difference between charge movement in a direct current and in an alternating current.

(2)

Alternating currents change direction ^ and direct Currents stay in the same direction.

ResultsPlus examiner comment

'Direct currents stay in the same direction' was an acceptable response for 'one direction' and scored both marks.

(iii) This generator supplies an alternating current (AC) to the lamp.
Other types of generators supply a direct current (DC).
Describe the difference between charge movement in a direct current and in an alternating current.

(2)

The direct current travels faster than an alternating current.

ResultsPlus examiner comment

No marks were awarded for this and it was a fairly common response.

Question 6(b)

Most candidates managed to obtain at least 2 marks here, but only the more able candidates managed to develop their argument by incorporating several linked differences into their answer to give a logical comparison. Less able candidates seemed to be limited by their language skills.

Generally there were some very good responses but using the correct terminology proved too much for a number of candidates. Many didn't seem to know the word 'pylon' and frequently 'electricity' was used instead of energy, voltage or current. The standard of writing was very often quite poor.

The idea that the National Grid system supplies energy over much greater distances was typical of points candidates tried to make but was often expressed in terms of: 'millions of homes', 'the whole city', 'cover the whole world'.

Level 3 was frequently missed because answers failed to show a direct link between two of three ideas that had been given. Where it was achieved it was usually the 'use of transformers to give a lower current in transmission cables thus reducing energy losses from the cables' ideas that were linked.

The correct ideas that were most frequently seen were:

- providing energy to customers further away
- the ability of AC to power more devices
- the use of overhead transmission cables
- the use of transformers to change current/voltage.

Compare the modern National Grid system with the early system in New York.

(6)

The national grid system uses an alternating current and can be used in plug points. The power station produces electricity and as they electricity arrives at the pylons the ~~alternating current~~ Voltage gets stepped up using a 'step up' transformer to around 400,000 volts. The current is not stepped up as it will just lose energy through heat in the cables, ~~it is~~ The Voltage is then stepped down by a 'step down' transformer so the electricity can be used at safe levels for consumers e.g. factories for the machines and is then stepped further down to around 23 volts so that it can be used at a safe level in homes. The National Grid provides power all over Britain whereas The New York cables can only supply nearby shops and offices.

(Total for Question 6 = 12 marks)

TOTAL FOR PAPER = 60 MARKS

ResultsPlus
examiner comment

This candidate has a detailed comparison of the two systems. They link the idea of using transformers with AC to reduce the current and thus reduce energy losses in the cables. The candidate also has the idea of the National Grid providing energy over much greater distances. The slip referring to using AC at a potential difference of 23 volts in homes was ignored.

This is an example of a Level 3 response and was awarded 6 marks.

Compare the modern National Grid system with the early system in New York.

(6)

The early system in ~~New~~ New York could only support a few people in the surrounding area, whereas the National Grid ~~Syst~~ system allow a wider range of people. The New York system only gave out small amounts of power compared to the National Grid which gives out vast amounts. New York only had DC whereas the National Grid is AC.

ResultsPlus
examiner comment

The candidate has a number of correct comparisons between the two systems but does not link any ideas. This is an example of a simple comparison at Level 2.

This response was awarded 4 marks.

Compare the modern National Grid system with the early system in New York.

(6)

The national grid system powers ~~nearly~~ all of englands electricty it send out electricty all over the country where as the new york system only did that area because the technology wasn't as good.

ResultsPlus
examiner comment

This was deemed sufficient for the idea that the National Grid system supplies energy over a much greater distance than the New York system. There is limited comparison in this Level 1 response though and so 2 marks were awarded.

Compare the modern National Grid system with the early system in New York.

(6)

THEY SHOULD SET UP ANOTHER GRID SYSTEM AND USE THEM FOR DIFFERENT THINGS.

ResultsPlus
examiner comment

This response had no rewardable content.

Summary

The paper allowed candidates of all abilities to access marks in all questions. Fewer candidates found difficulty with describe, explain and discuss questions, and with some of the calculations.

In order to improve their performance, candidates should:

- memorise the basic facts that are stated in the specification
- use technical terms wherever possible in descriptions and explanations
- give a reason as well as a statement when answering an 'explain' question
- practise applying their knowledge to new situations by attempting questions in support materials or exam papers
- read the question carefully and underline the key words.

Grade boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com
Order Code UG035109 March 2013

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual

Llywodraeth Cymru
Welsh Government

Rewarding Learning