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Examiners' Report
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IAL Information Technology WIT11 01

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Introduction

The 2206 paper is the first one that approaches a 'normal' sitting since Covid restrictions were first put in place. It must be acknowledged that there are still problems in many areas where the IAL is sat and that candidates may not have had a 'normal' educational regime leading up to the examination.

Answers were, on the whole, as good as could have been expected, given the disruption over the last year.

Examples, with comment, will be given to illustrate different marking points. Zero mark answers will normally only be used to illustrate a particular point about how candidates answered/misunderstood a question. Multiple choice questions are not included. The mark scheme for these is self-explanatory and there are no possible alternatives or partly-correct answers.

This report should be read in conjunction with the question paper and mark scheme.

Question 1 (a)

This question concerned technological convergence. It asked for tasks that a smartphone can perform that could previously could only be done using a PC.

The question stated that text-messaging was introduced in the early 2000s and may not be used as one of the tasks.

Most candidates had some ideas, but many were unaware that tasks such as video calls, joining a network, and taking photographs were possible with non-smartphones in the 1900s.

1 Website traffic statistics show that mobile devices, such as smartphones, are now used more often than desktop PCs.

(a) A smartphone is an example of technological convergence. In the early 2000s, mobile phones were given extra features, such as text messaging. Since then they have been developed to perform other tasks that previously could only be done using a PC.

Give **two** tasks, apart from text messaging, that a smartphone can be used for that previously could only be done using a PC.

(2)

1 Vidio calls for example over Skype or Zoom

2 Connect to a network

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Examiner Comments

Video calls have been available since 1970.

Mobile phones have had to be able to connect to networks in order to make calls, since they were first sold in the 1970s.

Total: 0 Marks

(a) A smartphone is an example of technological convergence. In the early 2000s, mobile phones were given extra features, such as text messaging. Since then they have been developed to perform other tasks that previously could only be done using a PC.

Give **two** tasks, apart from text messaging, that a smartphone can be used for that previously could only be done using a PC.

(2)

1 Data saving

2 Browser

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Examiner Comments

Response 2, browser is accepted as just enough for mark point 1, browsing the internet.

Response 1 is not enough because phones were able to store data, in the form of phone numbers, many years before smartphones were introduced.

Total: 1 Mark

(a) A smartphone is an example of technological convergence. In the early 2000s, mobile phones were given extra features, such as text messaging. Since then they have been developed to perform other tasks that previously could only be done using a PC.

Give **two** tasks, apart from text messaging, that a smartphone can be used for that previously could only be done using a PC.

(2)

1 video streaming

2 gaming

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Examiner Comments

Gaming receives mark point 4, playing games.

The first response, video streaming, could be awarded as mark point 1 or 5.

Total: 2 Marks

Question 1 (b)(ii)

This question asked for the type of memory used to store firmware. It followed on from a multiple choice question on firmware in 1bi. An incorrect answer in 1bi should not have affected how this question was answered.

(ii) State the type of memory used to store firmware.

(1)

RAM - random access memory

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Examiner Comments

Random access memory (RAM) was probably the most frequent incorrect answer.

Total: 0 Marks

(ii) State the type of memory used to store firmware.

(1)

ROM

ResultsPlus
Examiner Comments

Read-only memory (ROM) was probably the most frequent correct answer.

Total: 1 Mark

Question 1 (c)(ii)

This question asked what was meant by a network communication protocol.

Less-able candidates often tried rearranging the words in the question, saying that a network communication protocol is a protocol used for communicating over a network.

Slightly more-able candidates tried saying the same thing in different words. Neither group received a mark.

(ii) State what is meant by a network communication protocol.

(1)

A set of guidlines in accessing and sharing data over the internet

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Examiner Comments

This answer achieves mark point 2.

"Over the internet" is an acceptable alternative to over a network.

(ii) State what is meant by a network communication protocol.

(1)

a protocol in which you use the internet to communicate with different devices

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Examiner Comments

This is a variation on a protocol for communicating over a network and does not receive a mark.

Total: 0 Marks

Question 1 (d)

This question concerned the difference between VoIP and TCP/IP.

It asked why TCP/IP is not suitable for making phone calls. The question was not answered well, with many candidates thinking that TCP/IP was somehow unable to handle packets derived from analogue/voice.

(d) **Phone calls can be made over the internet using voice over internet protocol (VOIP).**

TCP/IP and VOIP both use packets to carry data, but only VOIP can be used for making a phone call.

Explain why TCP/IP is not suitable for making a phone call.

(2)

TCP/IP is slow because it has to send packets and wait until they are received and a message is sent back so as to reduce error rate whereas VOIP sends lots of packets in one direction without having to wait hence it is faster and a call can be held in real

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Examiner Comments

This is a good answer, with the candidate knowing that TCP/IP has error-checking that can cause delays in the signal.

Total: 2 Marks

(d) Phone calls can be made over the internet using voice over internet protocol (VOIP).

TCP/IP and VOIP both use packets to carry data, but only VOIP can be used for making a phone call.

Explain why TCP/IP is not suitable for making a phone call.

(2)

· When ~~compact~~ two devices using TCP/IP to transfer data, it need run communication protocol, that will cost time. It means using TCP/IP to making a phone call that will have a long time delay than VOIP.

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Examiner Comments

This candidate understands that TCP/IP messages have time delays but does not explain why, or give a result of such delays.

Total:1 Mark

(d) Phone calls can be made over the internet using voice over internet protocol (VOIP).

TCP/IP and VOIP both use packets to carry data, but only VOIP can be used for making a phone call.

Explain why TCP/IP is not suitable for making a phone call.

(2)

As VoIP can convert starts of as analouge data and is required to be converted to digital and vice versa when reached to it required destination, TCP/IP doesn't provide this feature thus VoIP is used.

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Examiner Comments

The candidate has confused what happens with a modem (analogue to digital) with the difference between TCP/IP and VOIP.

Total: 0 Marks

Question 1 (e)(i)

This question and the following, 1eii, concerned requirements for joining a public Wi-Fi hotspot.

1ei asked why mobile devices joining such a hotspot should be allocated a dynamic IP address. Many candidates understood that mobile devices would join more than one network, but they were not always able to explain the consequence of this.

Less-able candidates appeared to think it was an anti-hacking or anti-tracking measure.

(e) Mobile devices can connect to wireless networks at public Wi-Fi hotspots.

(i) When a device connects to a hotspot it needs an IP address.

IP addresses can be static or dynamic.

Explain why a mobile device should be allocated a **dynamic** IP address.

(2)

The dynamic address changes depending on what networks you connect to. Because mobile phones are designed to connect to different networks, they are allocated a dynamic IP address

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Examiner Comments

This answer shows that the candidate knows about connecting to more than one network but they have not expanded the answer enough for a second mark.

Total: 1 Mark

(e) Mobile devices can connect to wireless networks at public Wi-Fi hotspots.

(i) When a device connects to a hotspot it needs an IP address.

IP addresses can be static or dynamic.

Explain why a mobile device should be allocated a **dynamic** IP address.

(2)

As ~~router~~ many users will disconnect and connect from that public hotspot, therefore applying a unique IP address to each device connected would not be possible as there are a limit of IP addresses. thus dynamic is better.

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Examiner Comments

This answer does not quite fit with the marking points because the candidate has written about users, rather than devices, connecting.

The meaning is clear, however, and the limited number of IP addresses available to a hotspot is a valid point.

Total: 2 Marks

(e) Mobile devices can connect to wireless networks at public Wi-Fi hotspots.

(i) When a device connects to a hotspot it needs an IP address.

IP addresses can be static or dynamic.

Explain why a mobile device should be allocated a **dynamic** IP address.

(2)

dynamic IP addres can be changed easy, so it can prevent anyon from hacking or gaining accress to your network or device.

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Examiner Comments

This is a typical answer regarding anti-hacking.

Total: 0 Marks

Question 1 (e)(ii)

This question and the previous, 1ei, concern the requirements for joining a public Wi-Fi hotspot. 1eii asks why a mobile device joining such a hotspot sends its MAC address.

Many candidates understood that MAC addresses are unique but they were not always able to expand the answer for a second mark.

Less-able candidates appeared to think it was an anti-hacking or anti-tracking measure.

(ii) **The mobile device will send its media access control (MAC) address to the hotspot.**

Explain why the MAC address is used in making the connection.

(2)

MAC address is a fixed address in the mobile device, It uses MAC address because it doesnt change

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Examiner Comments

This answer does not quite achieve mark point 1, MAC address is unique. "Fixed" is not an acceptable alternative to 'unique'.

Total: 0 Marks

(ii) The mobile device will send its media access control (MAC) address to the hotspot.

Explain why the MAC address is used in making the connection.

(2)

Because a MAC address is unique to every device so they are identified in a network, so during the process of connecting the device can be known as an Authorised user.

(Total for Question 1 = 12 marks)

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Examiner Comments

This answer would achieve:

mark point 1, MAC address is unique

mark point 2, it is used to identify the device

mark point 5, allows hotspot to block/allow devices

Total: 2 Marks

(ii) The mobile device will send its media access control (MAC) address to the hotspot.

Explain why the MAC address is used in making the connection.

(2)

MAC addresses are unique to a given device hence it will not be confused for another device that may already be connected.

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Examiner Comments

The answer achieves:

mark point 1, MAC address is unique

mark point 4, prevents two devices being confused for each other

Total: 2 Marks

Question 2 (a)

This was a practical question, requiring candidates to analyse a dataflow diagram and identify which pieces of data were being moved.

The mark scheme allows for meaningful alternatives to the items listed: one example is given for each but others could be acceptable.

Complete the table by stating what data is moving for the labels A to F.

The first one is done for you.

(6)

Label	Data
A	Order
B	Processed order
C	stock removed
D	reports
E	orders of the day
F	new stock order
G	Purchase order

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Examiner Comments

The answer receives full marks. Note that there are several meaningful alternatives allowed here.

B, "processed order", the word 'processed' is ignored because the whole diagram is about processing the order

C "stock removed" is acceptable as 'stock used'

D "reports" is acceptable because it implies more than one, ie stock and order reports. 'Report', singular, would not be allowed.

E "orders of the day" is acceptable as meaning 'daily orders'

F "new stock order" is acceptable as 'stock required'

Total: 6 Marks

Complete the table by stating what data is moving for the labels A to F.

The first one is done for you.

(6)

Label	Data
A	Order
B	Order
C	Type of flower
D	reports
E	order
F	~~Purchase order~~ Stock required
G	~~Stock required~~. Purchase order

ResultsPlus
Examiner Comments

B, D, F and G are correct.

D, "reports" is acceptable because it implies more than one report, ie stock and order.

Total: 4 Marks

Complete the table by stating what data is moving for the labels A to F.

The first one is done for you.

(6)

Label	Data
A	Order
B	~~display~~ Daily order
C	updating
D	~~Sending~~ report
E	Daily orders
F	~~Request~~ Stock order
G	Stock

ResultsPlus
Examiner Comments

In this answer, E and F are correct.

B, "daily order" is not allowed because there will be more than one order per day and 'daily order' will be part of E.

D, "report" needs to be plural to receive a mark.

Total: 2 Marks

Question 2 (b)

This question was about the advantages of changing from a paper-based system, described in the scenario, to an IT system.

Most candidates could produce an answer, but less-able candidates were unable to extend their explanation for a second mark, or wrote about two unlinked points.

A frequent incorrect answer was to claim that an IT system would be cheaper than a paper-based one. This could only achieve marks if the answer went on to explain where the saving would be, eg less admin staff needed.

(b) In the paper-based system orders were taken by phone and recorded on order pads.

At the end of each day the manager reviewed the orders that had been placed and purchased new stock.

Explain **one** advantage **to the company** of changing from a paper-based system to an IT system.

(2)

will cost you less because instead of ~~Eg~~ buying and restoking on paper you will have ~~it~~ it stored in a ~~vertal~~ vertal place.

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Examiner Comments

Although this answer does give buying less paper as a reason for an IT system costing less, it did not receive a mark because IT systems tend to be expensive to purchase, run and maintain, and also use quite a lot of paper.

Total: 0 Marks

(b) In the paper-based system orders were taken by phone and recorded on order pads.

At the end of each day the manager reviewed the orders that had been placed and purchased new stock.

Explain **one** advantage **to the company** of changing from a paper-based system to an IT system.

(2)

An IT system is more organized and easier to use therefore easy to access records and securely keep them in comparison to the paper based system.

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Examiner Comments

This answer receives 1 mark for easier to search, the second part of mark point 1.

"Securely keep them" is not enough for a second mark because paper records can be kept securely. The response does not extend the point about searching being easier.

Total: 1 Mark

(b) In the paper-based system orders were taken by phone and recorded on order pads.

At the end of each day the manager reviewed the orders that had been placed and purchased new stock.

Explain **one** advantage **to the company** of changing from a paper-based system to an IT system.

(2)

An advantage to the company changing to an IT system is that the data can easily be accessed without the risk of it getting lost, thus enables the company to use it for future reference.

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Examiner Comments

This answer receives marks for a sensible link between two points:

"ease of access" mark point 1

"not losing data" mark point 7

Total: 2 Marks

Question 2 (c)(i)

This question and the following, 2cii, concerned the environmental impact of changing from a paper-based system to an IT system.

This questions asked for a positive impact. Most candidates made the point that using less paper meant cutting down fewer trees. This was an acceptable answer because although most trees used for paper are a sustainable crop, there is still a significant amount of forest destruction.

(c) The company's change from a paper-based system to an IT system has an environmental impact.

(i) Explain **one positive** environmental impact.

(2)

- Less pollution as papers won't be dumped to cause land and air pollution.

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Examiner Comments

This candidate understands about landfill and pollution, but does not state that there will be less paper, for the second mark.

Total:1 Mark

(c) The company's change from a paper-based system to an IT system has an environmental impact.

(i) Explain **one positive** environmental impact.

(2)

Less paper will be used ~~workspace~~ which means you are saving trees and helping the environment, allowing more CO_2 to circulate.

ResultsPlus
Examiner Comments

This is a typical answer noting using less paper and saving trees.

Total: 2 Marks

Question 2 (c)(ii)

This question, and the preceding 2ci, concerned the environmental impact of changing from a paper-based system to an IT system.

This questions required a negative impact.

This was answered less well than 2ci, the positive impact. Candidates often stated that there would be pollution but did not always explain that adequately.

(ii) Explain **one negative** environmental impact.

(2)

In case the computers are disposed off improperly the non biodegradable parts can lead to land and water pollution

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Examiner Comments

This answer receives marks from the second example, improper disposal, causing pollution, which in this case is specified as non-biodegradable parts.

"Pollution" with no further detail would not have been enough for the second mark.

Total: 2 Marks

(ii) Explain **one negative** environmental impact.

(2)

The IT systems hardware is hazardous to the enviornment, with its implementation will come a higher demand for electricity which will impact the enviornment through continuous usage, some models (mostly older ones) can even release carbon emisions, or when the hardware becomes obsolete, the chemicals and metals won't degrade when thrown away

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Examiner Comments

This answer would receive one mark for a part answer about energy use, but receives both marks for "chemicals and metals won't degrade when thrown away".

Total: 2 Marks

Question 2 (d)(ii)

This question was about how location awareness works, in the context of a delivery driver's tablet computer knowing when it has reached company premises.

Frequently, candidates who wrote about GPS were confused as to how it works, with many saying that the satellites are somehow doing the calculations and telling the tablet where it is.

Those writing about using Wi-Fi often did not say that the tablet had to have Wi-Fi enabled for it to detect the company's signal.

(ii) The tablet is location aware.

Explain how the tablet 'knows' when it is on company premises.

(2)

• It has in built or online GPS enabled which connects to the internet and is able to detect it's location. It also has connections in the premises previously connected which connects when the tablet is within range. These connections can include wifi or bluetooth connections.

ResultsPlus
Examiner Comments

This answer receives one mark for the part about GPS.

It receives two marks, just enough, for the Wi-Fi explanation.

Total: 2 Marks

(ii) The tablet is location aware.

Explain how the tablet 'knows' when it is on company premises.

(2)

A aPS (global positioning system) technology maybe used by the driver's tablet, which uses 4 satellites and microwave signals to locate th exact coordinates of the driver an tablet

ResultsPlus
Examiner Comments

This is a typical one-mark GPS answer.

The candidate knows something about GPS, but does not say anything about a stored/home location being needed.

Total: 1 Mark

Question 3 (a)

This is an extended writing question in the form of a short essay concerning structured and unstructured data in the context of a garden centre. The mark scheme is levels-based.

Many of the less-able candidates did not know what the terms 'unstructured' and 'structured' data meant. Instead, they wrote about them as if they were data and information. Marks could still be gained if the examples they used fitted the terms, but they were unlikely to get more than a Level 1 mark.

3 A garden centre stores information about its plants and customers.

(a) The garden centre collects and stores both structured and unstructured data.

Explain the difference between structured and unstructured data.

Where possible, support your explanation using examples of structured and unstructured data that the garden centre might use.

(6)

Unstructured data is such data that has not been given a context. Whereas structured data is data that has been given context and now is information that can be used for example for decision making.

Garden centre may have data of for example; red, green, green, yellow, red, violet..., this is unstructured data as it yet has not been given a context. However, once the context of flowers is given, this becomes structured data which is information of how many flowers there are of each colour, this has now became data that can be used and help the garden centre to keep up to date with their stock. For example if they were to notice that yellow flowers there are no red flowers left, they can order new red flowers from suppliers using that information, rather than relying on manually noticing that they have ran out of red flowers.

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Examiner Comments

The candidate writes about data and information, instead of unstructured/structured data.

Some marks are awarded for appropriate examples of unstructured and structured data.

Total: 2 Marks

3 A garden centre stores information about its plants and customers.

(a) The garden centre collects and stores both structured and unstructured data.

Explain the difference between structured and unstructured data.

Where possible, support your explanation using examples of structured and unstructured data that the garden centre might use.

(6)

structured data is data represented in a uniform format, it can also be referred to as data that limited to be within a set of rules. Unstructured data is data whose format varies, it is not restricted ~~to~~ by many limits and is idependent of them.
Secondly, structured data can be referred to as data that is quantitative which means it is or can be expressed in numbers. Unstructured data is qualitative data, it is in most cases text and can also be thought of as being opinion based.
An example of structured data that the shop can use is the product ID of the flower, the amount ~~ordered~~ ordered and the total cost. Each of these has their own format. An example of unstructured data is customer reviews, this is feedback and is influenced by the customers opinion and experience and so is not likely to be restricted to a certain format. Therefore, generally, structured data holds important information whereas unstructured data does not.

ResultsPlus
Examiner Comments

The answer is difficult to read but worth doing so because it is clear and has good discussion.

It covers structured and unstructured data and includes examples for both.

It is just enough for the top of Level 3.

Total: 6 Marks

3 A garden centre stores information about its plants and customers.

(a) The garden centre collects and stores both structured and unstructured data.

Explain the difference between structured and unstructured data.

Where possible, support your explanation using examples of structured and unstructured data that the garden centre might use.

(6)

Structed data is formatted, organized quantitative data. While onstructed data is qualitative unformatted and unorganised. The centre may store its structed data in a relational database such as plant stock remaining for ~~different~~ different types of its plants. ~~They~~ Their product ID's can be stored in a orderly manner. This is structered data. Unstructed data in this case can be customer comments and reviews. They have no format or order, just qualitative ~~dat~~ data stored in the system.

ResultsPlus
Examiner Comments

The answer covers structured and unstructured data and gives appropriate examples of each.

It is a little too brief and lacking in detail to access Level 3. This is a good Level 2 answer.

Total:4 Marks

Question 3 (b)(i)

Question 3b, sub-questions i – iv were based on a database used by a garden centre. Two tables, with sample data were provided. Candidates were asked to give keys and data types being used in the database.

3bi asked for a primary key. The only possible answers were Supplier ID or Product ID. Minor spelling errors or misuse of capitals were ignored.

Question 3 (b)(ii)

Question 3b, sub-questions i – iv were based on a database used by a garden centre. Two tables, with sample data were provided. Candidates were asked to give keys and data types being used in the database.

3bii asks for a foreign key. The only possible answer was Supplier ID. Minor spelling errors or misuse of capitals were ignored.

Question 3 (b)(iii)

Question 3b, sub-questions i – iv were based on a database used by a garden centre. Two tables, with sample data were provided. Candidates were asked to give keys and data types being used in the database.

3biii asked for the data type being used for 'height'. The only possible answers were Float, Double, Decimal, or Real. Minor spelling errors were ignored.

Question 3 (b)(iv)

Question 3b, sub-questions i – iv were based on a database used by a garden centre. Two tables, with sample data were provided. Candidates were asked to give keys and data types being used in the database.

3biv asked for the data type being used for 'telephoneNumber'. The only possible answers were Text, String or Varchar. Minor spelling errors were ignored.

Question 3 (c)

This was a short practical question. The candidates were asked to write a Structured Query Language (SQL) query.

The database needed was that given in question 3b. The table headings shown in 3b were those to be used in writing the query, but understandable variations were accepted.

SQL queries have a set structure and syntax, but this varies according to the version of SQL and the database being used. Marks were awarded as long as the query was understandable.

(c) A customer brings in a photograph of a plant she wants to buy.

She says that the plant has white flowers and is at least two metres tall.

The garden centre identifies the plant as a type of mimosa.

Write an SQL query that:

- finds all the mimosa plants that meet the criteria
- displays the official name of each plant, and the names and telephone numbers of the suppliers, if any, who stock that plant
- orders the list alphabetically by supplier name. Asc

(6)

```
SELECT officialName, supplierName,
telephoneNumber FROM tbl_supplier,
tbl_plant WHERE height >= 2 AND
flowerColour = 'White' AND officialName
= '%mimosa%' ORDER BY supplierName;
```

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Examiner Comments

The answer notes everything except mark point 6, the join between the two tables.

The answer is not well-structured, because each word written in capitals should have started a new line. It is, however, understandable.

Total: 6 Marks

```
SELECT officialName, SupplierName, telephoneNumber
FROM tbl-Supplier, tbl-plant
  WHERE commonofficialName = "mimosa"
    AND height >= 2
    AND flowerColour = "white"
    AND tbl-Supplier.SupplierID = tbl-plant.SupplierID
ORDER BY name;
```

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Examiner Comments

This response accesses mark points 1 and 2, having only the correct fields from the correct tables.

It does not receive mark point 3, because the candidate has crossed out the correct answer and replaced it with something else. If it had not been replaced, the crossed-out work would still have been valid.

The response does not have any form of 'wildcard' for mark point 4, but does have an AND condition for mark point 5.

Mark point 6 is for the join shown on the next to bottom line.

Mark point 7 is not given as the ORDER needs to be by supplierName. Name by itself is not accepted as it could apply to commonName or officialName as well as supplierName.

Total: 4 Marks

Question 4 (a)

This question asked why a website needs a domain name as well as an IP address.

There were many answers saying that a domain name was needed to register the website, or needed to be unique. Although correct, these do not answer the question.

4 Tanvik makes and sells decorative candles.

He wants to expand his business by creating a website for online sales.

(a) Tanvik's website has an IP address and a domain name.

Explain why a domain name is needed.

(2)

So you are not confused with other domains, & so everyone knows your name is taken.

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Examiner Comments

Although correct, the need to avoid confusion with other websites does not answer the question, because the IP address would be sufficient.

Total: 0 Marks

4 Tanvik makes and sells decorative candles.

He wants to expand his business by creating a website for online sales.

(a) Tanvik's website has an IP address and a domain name.

Explain why a domain name is needed.

(2)

So that when a user inputs the HTML adress the domain name server can identify the ip adress of the website.

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Examiner Comments

This answer receives one mark from the second example, regarding a domain name server looking up an IP address.

Total: 1 Mark

4 Tanvik makes and sells decorative candles.

He wants to expand his business by creating a website for online sales.

(a) Tanvik's website has an IP address and a domain name.

Explain why a domain name is needed.

(2)

A client will use the domain name of the website to connect to the website through their browsers which will get the IP address of the website through DNS servers since IP addresses are ~~not as~~ not able to be remembered for every website.

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Examiner Comments

This is a good answer.

It has part of the first example, regarding IP addresses being hard to remember.

It also has a two-mark answer regarding using the domain name in the browser to access an IP address via a domain name server.

Total: 2 Marks

Question 4 (b)

This question concerned the difference between static and dynamic web pages.

Unfortunately, numerous candidates wrote instead about static and dynamic IP addresses.

Another popular incorrect answer was simply to define the words static and dynamic, with little or no reference to a web page.

(b) The website can be built using static or dynamic web pages.

Describe **one** difference between static and dynamic web pages.

(2)

Static is only one and dynamic will keep changing.

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This is an example where the candidate says what static and dynamic mean, without relating the terms to a web page.

Total: 0 Marks

(b) The website can be built using static or dynamic web pages.

Describe **one** difference between static and dynamic web pages.

(2)

For static webpages, content is fixed for all users while in dynamic webpages the content is personalized for all users.

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This answer is a variation on mark point 4 and receives both marks.

Total: 2 Marks

(b) The website can be built using static or dynamic web pages. be difficult

Describe **one** difference between static and dynamic web pages.

(2)

Static uses front-end and information does not change while Dynamic uses server-sided scripting languages like PHP, Dynamic is interactive while static is not. Static runs on client side only

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Examiner Comments

This answer combines parts of two marking points.

"Static uses front-end and information does not change" is mark point 4.

"Dynamic uses server-side scripting like PHP" is from mark point 1.

"Dynamic is interactive while static is not" is from mark point 4. By itself it would not be enough for 2 marks

Answers may be spread across marking points providing they make sense overall.

Total: 2 Marks

(b) The website can be built using static or dynamic web pages. the internet is loaded.

Describe **one** difference between static and dynamic web pages.

(2)

In a static web page, the content does not change unless changed manually but for Dynamic web page, the content is different for different users. Static written in HTML, CSS ~~, Javascript~~ while dynamic written in ASP, ASP.NET, AJAX, PHP, etc.

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Examiner Comments

This is a good answer that covers all of mark points 1 and 4.

Total: 2 Marks

Question 4 (c)

This was an extended-writing question in the form of a short essay about improving the digital footprint of a small business.

The mark scheme is levels-based. Most candidates had some basic idea of what a digital footprint is but rather fewer seemed to know about how to be pro-active in improving a footprint.

(c) A friend tells Tanvik that he could get more online sales of his candles by improving the digital footprint of his business.

Discuss how Tanvik might improve the digital footprint of his business.

(6)

• Digital Footprint is when an ~~of~~ individual or a organization's history in the internet such as their activity ~~in~~ in the internet.

• Tanvik can improve his digital footprint by creating social media accounts for his organization. Creating these social media accounts will make him have a stronger digital Footprint thus getting more online customers.

• Creating online adverts can create a better digital footprint such as sponsorship adverts or pay-per-click adverts that make his product have a stable digital footprint.

• Asking the customers to review the product online and rate the product in his website or social media accounts can make him improve his digital footprint and create a reputation for his product.

• Creating a website for his product will also impact ~~Such~~ his digital footprint. Tanvik can create a static or dynamic webpage that customers will visit and also improve his digital Footprint

ResultsPlus
Examiner Comments

The candidate shows knowledge of what a digital footprint is and some of the activities that contribute to it.

They also indicate relevant measures to improve a footprint.

The final paragraph appears to have been added because of the previous question about static and dynamic web pages. It can be ignored as irrelevant, rather than incorrect.

This is a good Level 3 answer.

Total: 6 Marks

(c) A friend tells Tanvik that he could get more online sales of his candles by improving the digital footprint of his business.

Discuss how Tanvik might improve the digital footprint of his business.

(6)

Send some advertisment online and. Send some ~~bolg~~ blog on social media. or pay for the search engin make them put your website or information of your website at the ~~fromt~~ front.

ResultsPlus
Examiner Comments

This is a weak answer, simply giving a few measures that would contribute to, and possibly improve, a digital footprint.

It is a Level 1 response.

Total: 2 Marks

(c) A friend tells Tanvik that he could get more online sales of his candles by improving the digital footprint of his business.

Discuss how Tanvik might improve the digital footprint of his business.

(6)

A digital footprint is a trail that is left on the internet either intentionally or unintentionally. Tanvik can create digital footprints through various ways to help get more online sales

Tanvik can post on social media about his business on a daily ~~business~~ basis and advertise his posts to other customers who are interested in ~~decorat~~ buying decorative candles through targeted advertising and this will drive more customers to his ~~business~~ website and gain more sales

Tanvik can advertise his website through ~~his~~ a search engine, this will increase traffic on tanvik's website and ~~increase~~ to improve his searchengine optimization so that his website is in one of the top results

He can also join other online communities and share details about businesses to attract more ~~to~~ customers

ResultsPlus
Examiner Comments

The candidate shows understanding of what a digital footprint is and factors that might affect it.

They make some attempt to say how to improve a footprint but there is not enough detail to reach Level 3.

This is a good Level 2 answer.

Total: 4 Marks

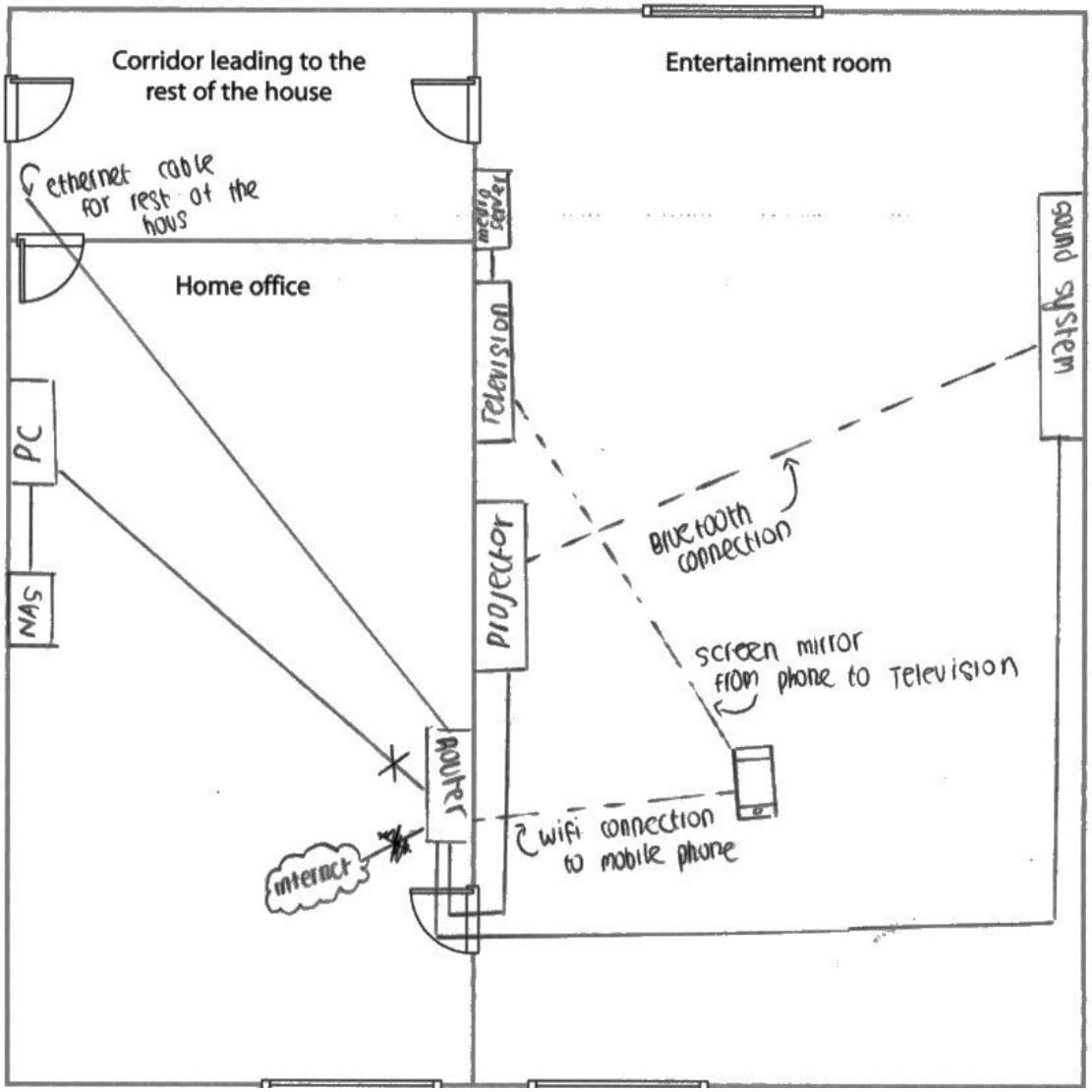
Question 5 (a)

This was a large practical question. Candidates were asked to analyse a set of requirements for an extension to a home network. They then needed to draw a network diagram that met those requirements.

The specification does not include a standard set of network symbols, so candidates were told they may use a labelled box or symbol. Marks were **only** awarded for labelled items.

The question stated that connection media, Ethernet and wireless, must use solid and dotted lines respectively. Candidates could only obtain marks for other ways of showing connection media if they were clearly labelled and used consistently in their diagram.

Nearly everyone who attempted the diagram was able to gain some marks. Common weaknesses were in not showing the existing connections to the internet or the rest of the house.



ResultsPlus
Examiner Comments

The answer receives:

Mark points 1 and 2, Internet connection going to a router

Mark point 3, cable to the rest of the house

Mark point 4, NAS and PC in office, with cable

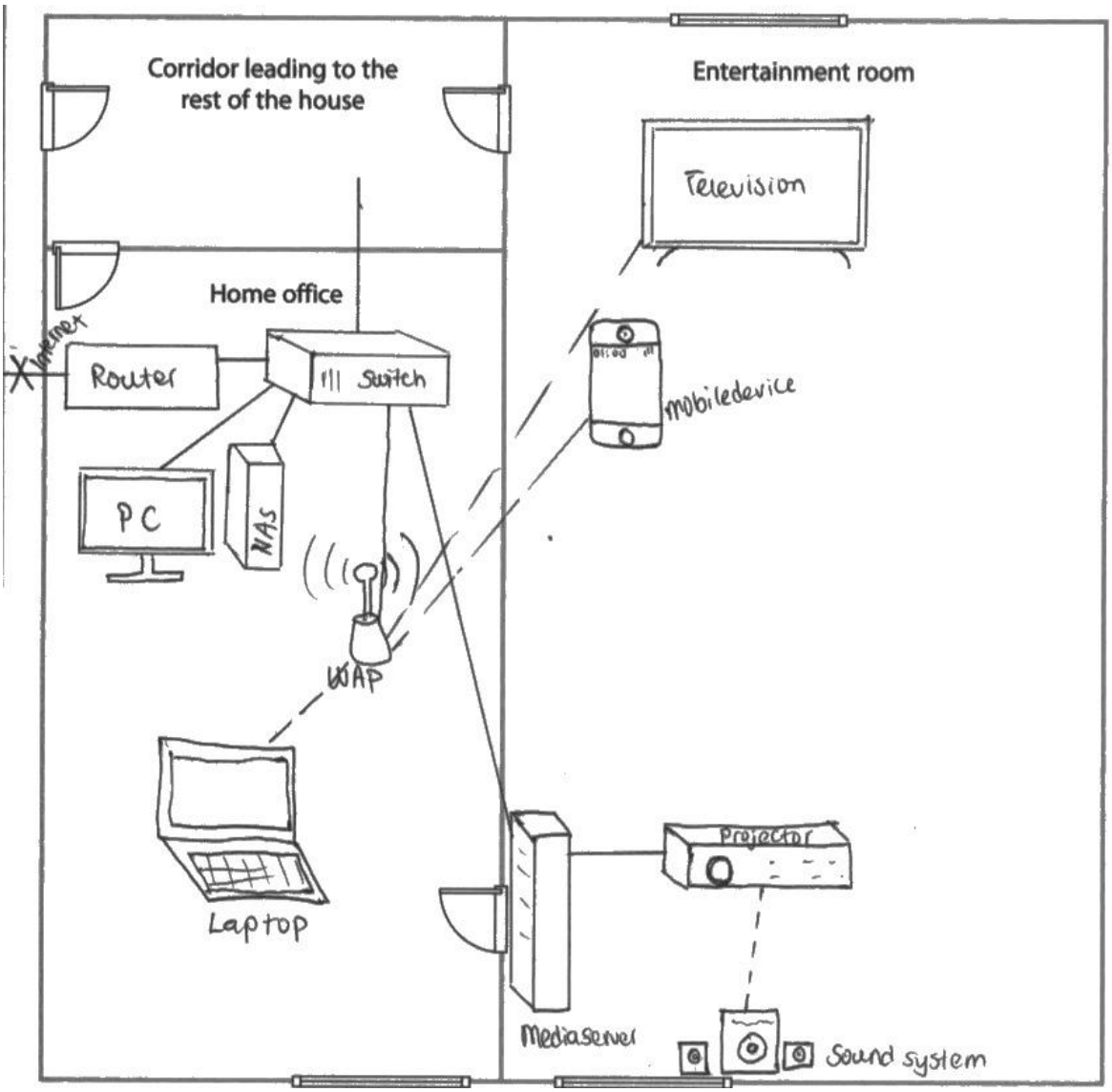
Mark point 10, mobile device linked to TV

Mark point 11, projector linked to sound system

The diagram does not include a laptop, switch or WAP, so misses mark points 5 to 8.

The TV is not linked to the network by cable, so misses mark point 9.

Total: 6 Marks



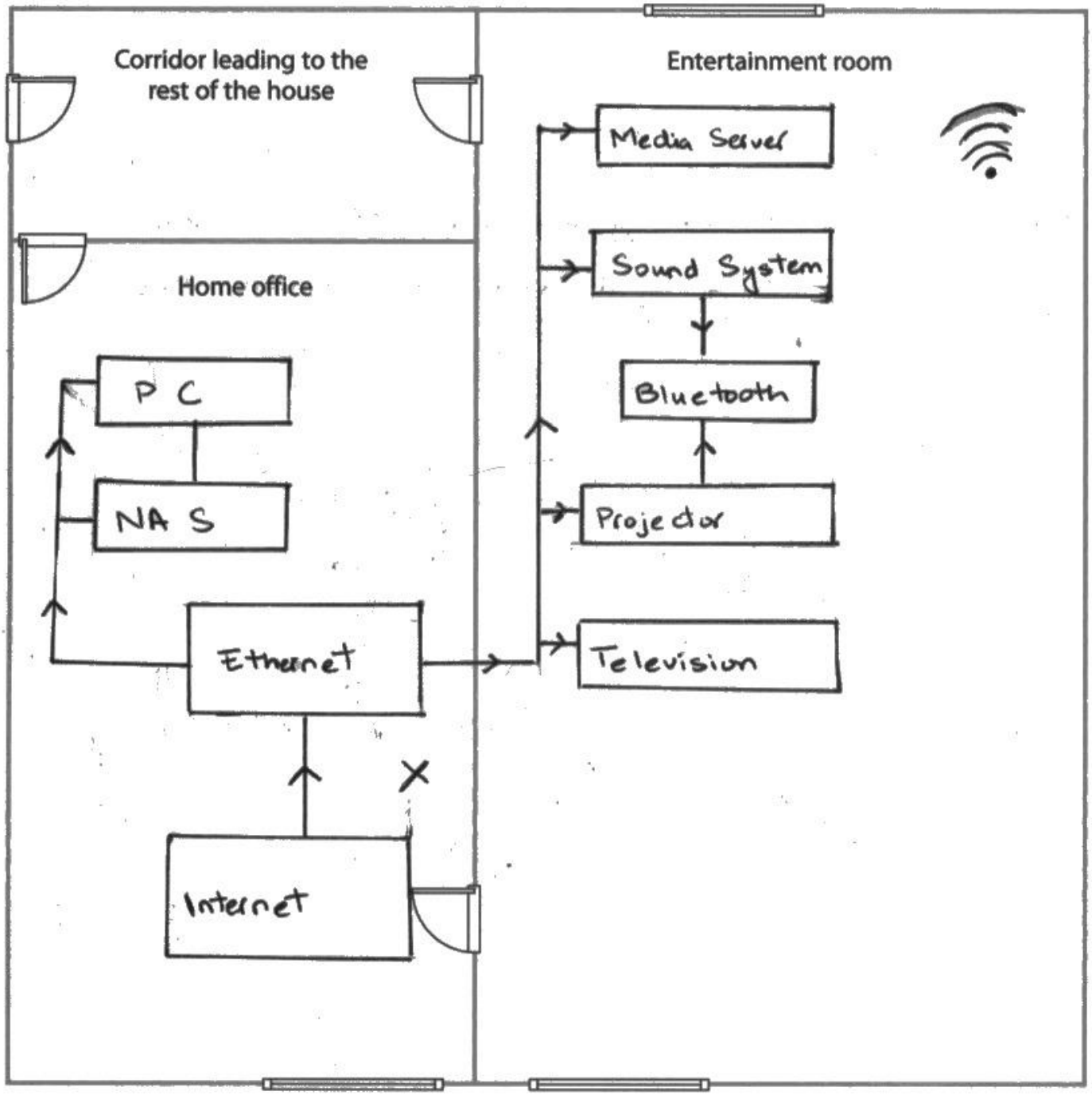
ResultsPlus
Examiner Comments

The diagram only misses mark point 9, the TV is not linked by cable.

The short cable leading into the room top left is the minimum acceptable for mark point 3, cable to rest of house.

The candidate draws a number of 'realistic' symbols, eg the laptop and PC. These would not receive a mark if they were not labelled correctly.

Total: 10 Marks


Corridor leading to the rest of the house
Entertainment room
Media Server
Sound System
Home office
Bluetooth
P C
NA S
Projector
Ethernet
Television
Internet

ResultsPlus
Examiner Comments

This diagram receives:

Mark point 1, the internet connection. It does not need to be outside the house.

Mark point 4, NAS and PC connected by cable, ignore the arrows on the cables.

Mark point 9, media server, projector, TV with cables. Ignore the way the cable branches.

It does not receive mark point 11, projector wireless link to sound system. Although there is a box saying bluetooth, the link is shown using cables.

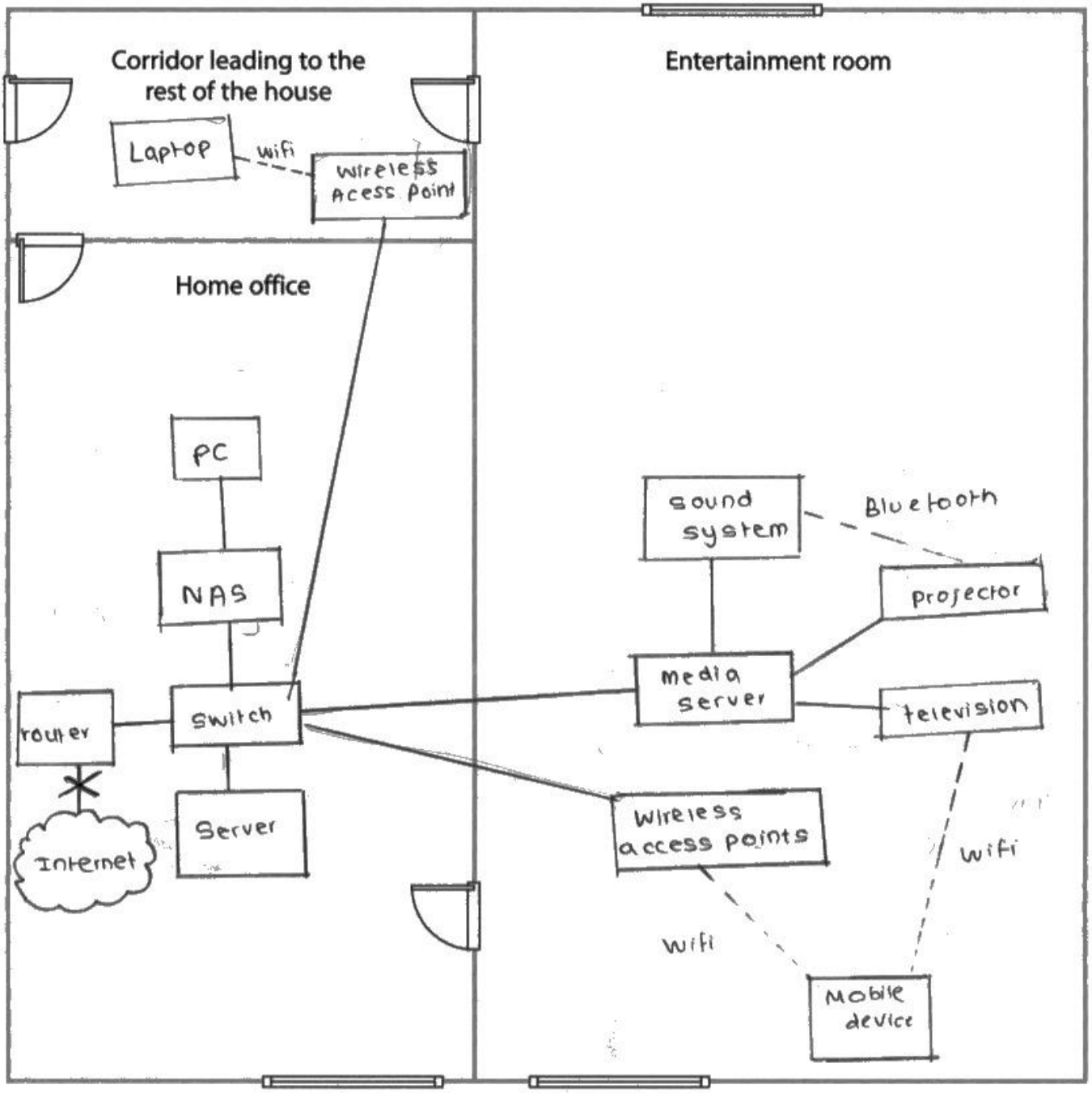
It does not receive mark points 6 or 7 because the object that might be a switch is labelled Ethernet.

There is no laptop, WAP, mobile device, or link to rest of house shown in the diagram.

Total: 3 Marks

Question 5 (b)(i)

This question asked for the candidates to show where a hardware firewall could be added to the diagram. It was poorly-answered, with numerous candidates trying to put the hardware firewall inside an existing device instead of adding it to the network.



(b) Paula's network can be improved by adding a hardware firewall.

(i) Draw an X on your network diagram to show where the hardware firewall should be located.

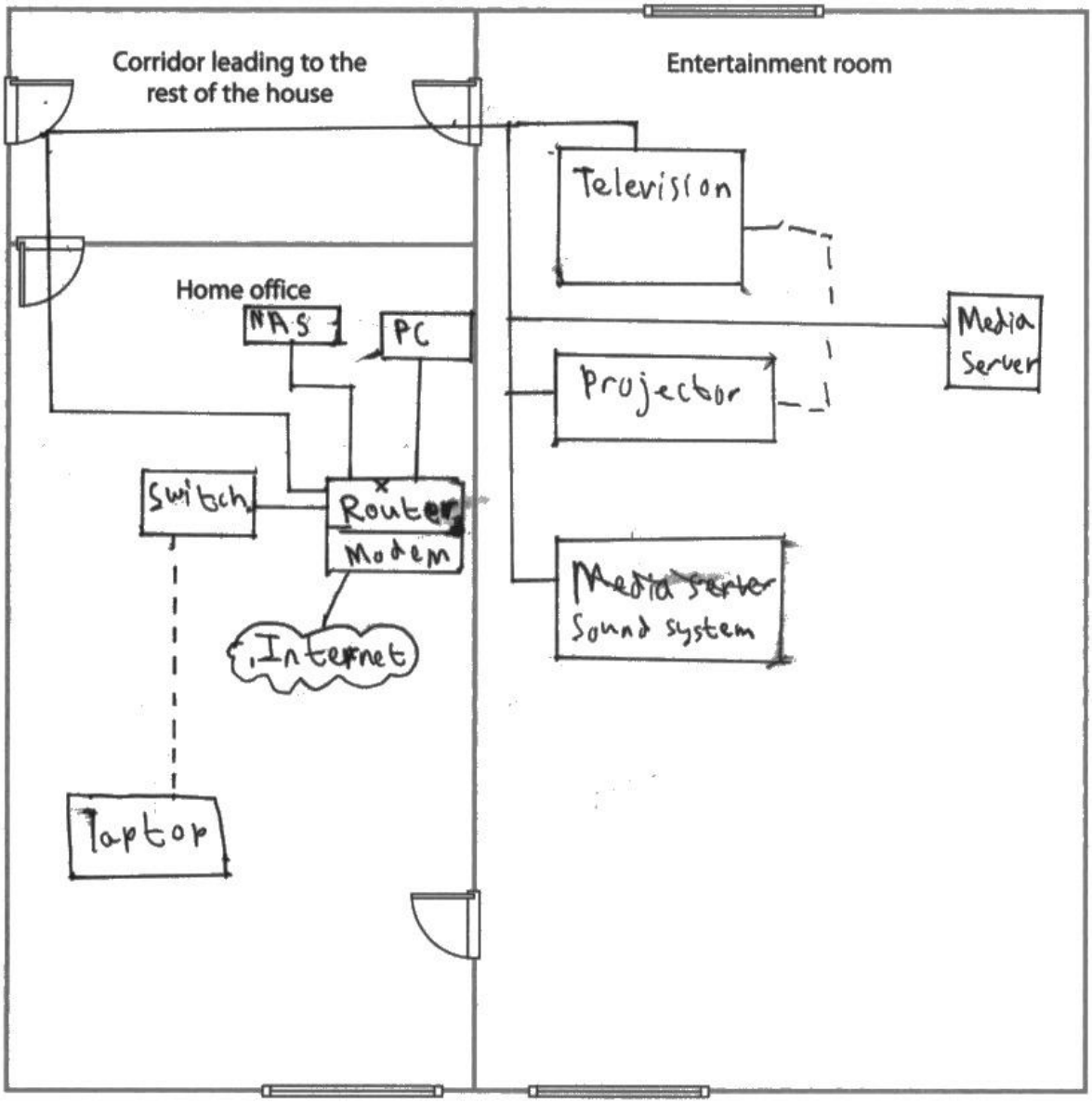
(1)

ResultsPlus
Examiner Comments

This is the correct answer, with the X between the internet and the router.

If the candidate had not had a router in their diagram, the X would have been acceptable between the internet and the first network device to which it connected.

Total: 1 Mark



(b) Paula's network can be improved by adding a hardware firewall.

(i) Draw an X on your network diagram to show where the hardware firewall should be located.

(1)

ResultsPlus
Examiner Comments

Although the diagram shows the internet and the router, the candidate has put the hardware firewall inside the router instead of adding it bewteen the internet and the router.

Total: 0 Marks

Question 5 (b)(ii)

This question asked for an advantage of a hardware firewall over a software firewall. It was not answered well, with many candidates saying that hardware firewalls could only be attacked/hacked at their physical location instead of via the network/internet.

This is a zero mark answer

(ii) Explain **one** advantage of a hardware firewall over a software firewall.

(2)

Its a physical hardware so it can be trusted and no one can access it by hacking you need to be physically there to access it.

ResultsPlus
Examiner Comments

This answer illustrates the common, incorrect idea that a hardware firewall can only be hacked at the firewall's location.

This is a two mark answer.

(ii) Explain **one** advantage of a hardware firewall over a software firewall.

(2)

It prevents unauthorized devices from connecting or entering the network ~~while~~ and protects all devices from malicious data ~~unauthorized data~~ while software firewall only protects the device with the fire wall installed.

ResultsPlus
Examiner Comments

This answer is mark point 2, protecting the whole network rather than just the device it is installed on.

Question 5 (c)

This question asked why a video needs to be sent over Ethernet cables while the video's audio track can be sent over Bluetooth. It required the candidate to understand the difference in file size, as well as the difference in bandwidth of the two transmission media.

(c) When a video is sent to the projector it requires an Ethernet cable connection but the audio track for that video can be sent to the sound system via Bluetooth.

Explain why the video must be sent by Ethernet but the audio only needs Bluetooth.

(2)

The ethernet sends the entire video to the projector, and since the projecter does not have any speaker, It will connect to the sound system via bluetooth and therefore enable the user to hear and see the video with low latency.

ResultsPlus
Examiner Comments

The candidate is simply describing the situation, which was explained in earlier parts of Question 5. It does not answer the question.

Total: 0 Marks

(c) When a video is sent to the projector it requires an Ethernet cable connection but the audio track for that video can be sent to the sound system via Bluetooth.

Explain why the video must be sent by Ethernet but the audio only needs Bluetooth.

(2)

The video track is consisted of images and audio, therefore a proper ethernet conection is required to send the ~~image~~ video directly to projector with out any Lag or loss of data, And as the audio file is small, it can be transfeed to the speaker via bluetooth

ResultsPlus
Examiner Comments

This response is a slightly different approach, well-linked to the question.

First half of example 2 plus implied file size difference.

Total: 2 Marks

(c) When a video is sent to the projector it requires an Ethernet cable connection but the audio track for that video can be sent to the sound system via Bluetooth.

Explain why the video must be sent by Ethernet but the audio only needs Bluetooth.

(2)

This is because a video file is generally much larger in size due to the amount of things going on in it. But since an audio file is nothing but sound it does not have much size in terms of file size and so can be easily transferred via bluetooth.

ResultsPlus
Examiner Comments

This answer says only that video files are bigger than audio files, obtaining mark point 1.

Total: 1 Mark

(c) When a video is sent to the projector it requires an Ethernet cable connection but the audio track for that video can be sent to the sound system via Bluetooth.

Explain why the video must be sent by Ethernet but the audio only needs Bluetooth.

(2)

The video contains more data packets hence it'll may not be possible or take longer time to send via bluetooth. ~~But~~ However, audio can be sent through bluetooth since it has less datapackets, it'll easily transfer to the sound system.

ResultsPlus
Examiner Comments

This response is a variation on the file size mark point.

It concerns there being more data packets in video than audio. Since the question is about sending files, this is an acceptable alternative.

Total: 1 Mark

Question 6

This was an extended writing question in the form of a long essay, about introducing and supporting digital devices in the context of a sixth form college. The mark scheme is levels based.

Candidates were asked to consider aspects of both hardware and software.

Most candidates obtained better marks than expected, possibly because of their own experience with digital devices in school or college.

More-able candidates also noticed the number of students involved, 1200, and based some good answers around the costs and logistics of dealing with large numbers of devices.

6 A new purpose-built sixth form college will be opening next year.

The college will have 1200 students.

The college has these decisions to make.

1. Whether students will be allowed to use their own digital devices for their college work or only be able to use college-provided hardware.
2. Whether to use web-based software applications, such as online productivity apps, or locally-installed software.

Evaluate the options and make recommendations on the decisions that the college should make. You could consider:

- technical support
- security
- connectivity.

(12)

Technical Support: Students will be needing their digital devices if they will have to work online or research for their work process keeps quizzes a web based software applications can be more useful to use due to the reason that they don't need online access and this makes their work simpler and quicker to finish and as the softwares get up graded online or homepages they will able to be use more amount of work experience am make high amount of best research due to their topic.

Security:

Due to the security conditions it is better to download the software (easier than working online due to malwares

Viruses Encryption Made by unauthorised access by threats with their other names hackers. In order to keep their devices softwares and network safe they can make uses of firewalls to check the computer system traffic and block users who try to gain access to system. Use strong passwords capital small letters numbers. Make mixed use of Pin codes. Biometrics: finger print face recognition foot prints just to recognize the real users of the IT system.

Connectivity:

For the connectivity they could use with routers switches modems and a VPN for networks security system.

Conclusion

I agree with the statements of college to make use of these type of systems with all the correct conditions and restrictions noted.

ResultsPlus
Examiner Comments

The answer does discuss technical support, security and productivity as required by the question, but only looks at the software.

The candidate does not make any recommendations on the decisions that need to be made.

This is a mid-Level 2 answer.

Total: 6 Marks

6 A new purpose-built sixth form college will be opening next year.

The college will have 1200 students.

The college has these decisions to make.

1. Whether students will be allowed to use their own digital devices for their college work or only be able to use college-provided hardware.
2. Whether to use web-based software applications, such as online productivity apps, or locally-installed software.

Evaluate the options and make recommendations on the decisions that the college should make. You could consider:

- technical support
- security
- connectivity.

(12)

If the college were to provide its students with college-provided hardware, students may not have the college-provided hardware. They ~~would not have~~ might not care about the technology provided by the school.

Furthermore, college-provided hardware would be hard to maintain for the college and might be ineffecient. The hardware would need constant updates and need to be powered (charged or plugged in).

The college provided hardware would be reratively secure, preventing the college's students from misusing its ~~the~~ hardware devices. The college may provide an internet connection, however it would be slow as around 1200 students would be using the same connection this would incur extra costs to the college.

If the college were to allow students to bring their own digital devices it would be more convenient. Students can access data comfortably. Students devices may be up-to-date making it fast and secure. Students would have placed

Passwords / authentication to protect their devices and data. Students may access the internet using a mobile connection rather than the college provided internet, which would be more faster. Although students may misuse their digital devices it would be more convenient for the school and its students, as students can store their data with them and take their devices back home without having to leave them at school, the school will not have to spend a lot of money on college-provided hardware.

The college should use web-based software applications as it would be much more effecient to the college and the students. Web-based softwares are up-to-date whilst locally-installed software would need to updated manually. Web-based softwards may also offer 24/7 technical support if you would need any help. However, Web based softwares are not as secure as a locally-installed software, adverts and popups may appear and if clicked could allow malware to enter the device, but it can be avoided by having a strong anti-malware software. The use of web-based software would allow the college to upload data/information (presentations, notes) online so students could access these from files at a later time. However, these applications cannot be accessed without an internet connection, which would make the user be unable to access the files.

ResultsPlus
Examiner Comments

This answer discusses both hardware and software. Some of the aspects could have had more detail but there is enough to reach Level 3.

There are no recommendations for devices and the answer was assessed as being at the lower end of Level 3.

Total: 9 Marks

6 A new purpose-built sixth form college will be opening next year.

The college will have 1200 students.

The college has these decisions to make.

1. Whether students will be allowed to use their own digital devices for their college work or only be able to use college-provided hardware.
2. Whether to use web-based software applications, such as online productivity apps, or locally-installed software.

Evaluate the options and make recommendations on the decisions that the college should make. You could consider:

- technical support
- security
- connectivity.

(12)

Since the college is new and will be expecting 1200 students providing these 1200 students college provided hardware won't be easy. this is because since the college intends to provide all 1200 student with college provided hardware it will ~~get expensive~~ become expensive. Furthermore, Since you are providing students with hardware they have never seen before they will require technical support in order to learn how to use these new devices. Also there is also the possibility that since the ~~the~~ the hardware are provided by the college students may not take care of them well. Some students may not even attempt to steal the hardware given to them. Furthermore since these devices do not have sim cards to provide cellular connectivity the college will have to setup an internet network that works throughout the college premises. this will also be an additional cost. However if the college were to allow the use of students own digital devices it would benefical to the college firstly, this is because the college does not have to spend money purchasing digital devices for all 1200 students. this will mean they don't have the additional cost compared to providing students with hardware. Because they don't have to provide students with hardware and students are

using their own devices no technical support will be needed as the students are already familiar with their own devices due to them having it for a long period of time as such they wont need tech support. Furthermore, Since students are using their own digital devices they will go to great lengths to protect them and the chances of this devices being stolen is slim. Lastly, Since most of the devices have their own sim cards most likely they will use their own cellular connection this way the college wont have to provide connectivity to the internet for students. In conclusion my opinion I believe the college should allow students to bring their own digital devices as it is more cost effective and beneficial for both the college and students.

With if the college using locally installed software there is no internet connections required this allows the use of being able to store files online or they could have it made available offline. Furthermore Since the software is available locally on the device this means that the software in itself does not require an internet connection and work can be done while you are offline However if the college uses web based software they will require an internet connection. this means that the files can be made offline but cannot be edited unless there is an internet due to the web based software itself requiring an internet connection to run. meaning working on the files offline is not possible. therefore I believe ~~it is the better option to use locally installed software~~ therefore the college should use locally installed software as it is more convenient as files can be edited as well as made offline on locally installed software whereas this can't be done on web-based software applications

(Total for Question 6 = 12 marks)

ResultsPlus
Examiner Comments

This answer covers technical support, security and connectivity for both devices and software.

It has a good discussion of the issues and makes recommendations with reasons.

This is easily a top of Level 3 answer.

Total: 12 Marks

6 A new purpose-built sixth form college will be opening next year.

The college will have 1200 students.

The college has these decisions to make.

1. Whether students will be allowed to use their own digital devices for their college work or only be able to use college-provided hardware.
2. Whether to use web-based software applications, such as online productivity apps, or locally-installed software.

Evaluate the options and make recommendations on the decisions that the college should make. You could consider:

- technical support
- security
- connectivity.

(12)

*The Students having their own digital devices used in the college is more secure than having to use the general devices provided by the School This is because the Student would ~~there~~ not like it if anyone would have to tamper with their School work or even have access to them.

*It is more effecient for Students to have their Personal WiFi router other than using the general one provided by the School because due to too many users on the WiFi router the network might become slow and thereby making the Student to feel uncomfortable and making their work slow

ResultsPlus
Examiner Comments

This is a Level 1 response.

The answer does include a few points about devices, but not the software.

The first sentence of the second paragraph could be seen as a sort of recommendation.

The answer was assessed as being mid-Level 1.

Total: 3 Marks

Paper Summary

Based on their performance on this paper, candidates should:

- read the scenarios/question terms carefully, looking for specific mentions of eg technical details or concerns of the people involved
- avoid the pre-planning of answers based on the sample assessment material or previous examinations. Although some of the questions may be similar, the context and emphasis will be different
- look for the key words and number of marks. Eg explain one benefit, for two marks, will require a linking of two facts or statements about the topic
- ensure that diagrams are clear and legible, especially any labels
- not cross out replaced answers until after they have actually been replaced
- indicate clearly if a replaced or extended piece of work has been written elsewhere in the paper.