Examiners' Report
June 2022

International GCSE Information and Communication Technology (ICT) 4IT1 01

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Introduction

This is the first time that candidates have sat examinations for this unit, which requires them to explore how current and emerging digital technologies impact on the lives of individuals, organisations and society. This is an untiered paper that has been specifically designed so that easier questions are more prevalent earlier in the paper, becoming progressively more difficult later on. This paper has been designed to be accessible, so that candidates of all ability ranges will find questions that are both challenging and interesting throughout. Candidates will find that 'command words' are used consistently in the paper to indicate the type of response expected. It is hoped that candidates will demonstrate the knowledge, understanding and skills required to be confident users of ICT.

Successful candidates often provided more detailed responses, providing more than just simple statements, including examples and reasons where expansions or explanations were required.

In the extended questions, candidates must demonstrate a better understanding of the requirement to 'discuss' and should note that, where a conclusion is required, it should be more than a repetition of the points already made. Candidates should develop their use of subject specific language and avoid giving generic responses, responding in the context of the question.

Question 1 (c)

A high percentage of candidates mentioned faster or high bandwidth. Candidates not scoring responded about range, which was not a suitable response in context of question.

Question 1 (d)(i)

A range of responses were seen with comments across the mark points. A number of candidates mentioned the formality of email, which was not creditworthy .

(d) Letta shares holiday photographs with her friends.

(i) Explain **one** reason why Letta shares her photographs online using a social network rather than using email.

(2)

emails would take longer time as it will have to send individually. posting it online would mean everyone would see it, like it and comment

ResultsPlus
Examiner Comments

An example of a two-mark response that provides a linked explanation.

(d) Letta shares holiday photographs with her friends.

(i) Explain **one** reason why Letta shares her photographs online using a social network rather than using email.

(2) friends
all her friends

Social networking will make her photographs available to everyone at once, if she posts it on her profile. This will save time as she doesn't have to individually send it to each friend through email, which could also use up more data, than simply uploading it across a social network

ResultsPlus
Examiner Comments

Another example of a linked explanation for two marks.

Question 1 (d)(ii)

Many candidates mentioned owning the camera but did not then clarify that Letta owned the pictures that she took.

Question 1 (e)(i)

Many candidates scored at least one mark for the expression but often failed to get the second mark for an incorrect conversion of gibibytes to mebibytes. Converting to bits was also frequently seen.

Question 1 (e)(iii)

A majority of candidates understood that ROM was non-volatile but did not link this to the importance of the start-up instructions and often referred to photos being stored in ROM.

(iii) State **one** reason why Letta's camera uses ROM.

(1)

ROM is non-volatile and so will not lose data when the camera is switched off.

ResultsPlus Examiner Comments

The question is not about storing data persistently (to secondary storage).

No mention of ROM startup instructions, so this did not gain the mark.

(iii) State **one** reason why Letta's camera uses ROM.

(1)

To boot turn on the operating system on start up.

ResultsPlus Examiner Comments

Although the technical language is not quite accurate, this response does enough to gain the mark.

Question 1 (e)(iv)

Where candidates did not gain marks, it was often due to the lack of the connection between extra storage space and ability to store more photos. (not applying the response to the context).

Question 1 (f)

Some understanding was shown of the speed of taking photos but this was then not linked to the speed of processing the data to digitise the images.

(f) Explain **one** advantage of increasing the speed of the camera's processor.

(2)

Increasing the speed of the processor allows the camera to take pictures faster as each photo will be processed sooner before the next photo can be taken.

ResultsPlus
Examiner Comments

An explanation that links the ability to take photos more quickly to the ability to process (digitisation etc) each photo more quickly.

(f) Explain **one** advantage of increasing the speed of the camera's processor.

(2)

By increasing the speed of the cameras processor more files can be transferred ~~and~~ therefore photos can be taken at a higher speed and with better quality/ ~~result~~ resolution

ResultsPlus
Examiner Comments

More photos can be transferred is not a reason why more photos can be taken and the quality of photos is also independent of these points.

One mark was awarded.

ResultsPlus
Examiner Tip

Using connectives in responses, such as 'because', or 'so that', help to structure answers to these two mark questions.

Question 1 (g)(i)

Candidates often identified the spindle, but did not correctly identify the laser.

Question 1 (g)(ii)

Very few fully correct answers seen. Often vague responses about the disk being read and displayed on the screen but little understanding of the process involved. Also, several responses mentioned magnetic media.

(ii) Describe how an optical disk drive reads data from a disk.

(4)

The disk is spun ~~and~~ ~~by~~ ~~the~~ at a ~~red~~ constant speed. ~~The~~ ~~little~~ A laser is shone onto the platters, lands. The light is reflected and a processor interprets the data and converts it.

Question 1 (g)(iii)

A high percentage of correct responses, although a number of candidates did not attempt a response.

Question 1 (h)

Most common response was 'washing machine'. Incorrect responses were often too vague.

(h) Cameras and camcorders are examples of products that use an embedded system.

Give **one other** example of a product that uses an embedded system.

(1)

Washing Machine.

ResultsPlus
Examiner Comments

A typical correct response.

(h) Cameras and camcorders are examples of products that use an embedded system.

Give **one other** example of a product that uses an embedded system.

(1)

Video – cameras

ResultsPlus
Examiner Comments

The question asks for one **other**.

Questions that require 'one other' will always have that term emboldened to support candidates.

ResultsPlus
Examiner Tip

When asked to give 'other' examples, read back to the stem of the question to make sure you are not repeating what is already given.

Question 2 (b)(i)

Most candidates gained both marks for this question.

Question 2 (b)(ii)

Many candidates discussed issues relating to users rather than devices. The most common correct answer was related to security.

(ii) State **two** reasons for identifying devices on a network.

(2)

1. Understand where traffic needs to be routed, know the location of traffic/information

2. Understand the size of the network and what users are operating on it

ResultsPlus
Examiner Comments

The first response gains the mark, but the second is not relevant.

Question 2 (b)(iii)

Many candidates understood the idea of the extent of geographical area, but few mentioned other differences between a LAN and a WAN.

(iii) State **two** ways a local area network (LAN) is different from a wide area network (WAN).

(2)

1. Wide area networks contain multiple LANs to form the internet.

2. LANs are small and created by a switch, and a router and a wireless access point

ResultsPlus
Examiner Comments

It was good to see candidates defining types of network by referring to the hardware used to create the network.

(iii) State **two** ways a local area network (LAN) is different from a wide area network (WAN).

(2)

1. A LAN covers a smaller geographic area than a WAN.

2. A WAN is multiple connected LANs.

ResultsPlus
Examiner Comments

An excellent response that gains both marks.

Question 2 (b)(iv)

Many candidates seemed to have stopped reading the question after the word 'printer' and so talked about the ability to print from a 'phone or a PC/laptop without reference to a network.

(iv) Explain **one** advantage of connecting a printer to a network.

(2)

If you connect your printer like a pheripheral device it can be used by everyone without the need of buying more printers and keeping it supraicans and effective
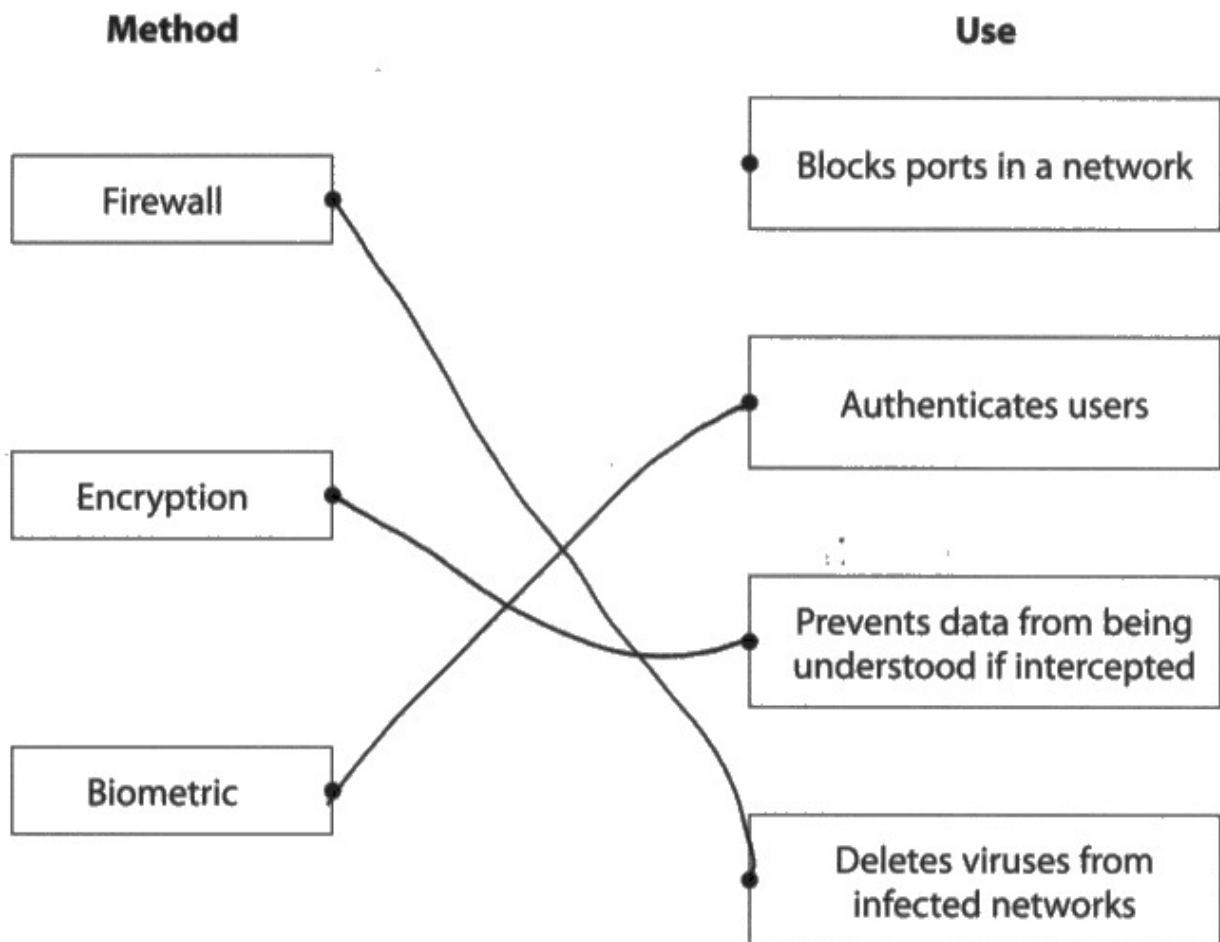
ResultsPlus
Examiner Comments

An example of a linked explanation for two marks.

Question 2 (b)(v)

Several candidates drew multiple lines from one of the methods. The most common error was indicating that the firewall was used to delete viruses.

(v) Draw **one** straight line from **each** method of protecting a network to the correct use.

(3)

Method	Use

Firewall

Encryption

Biometric

Blocks ports in a network

Authenticates users

Prevents data from being understood if intercepted

Deletes viruses from infected networks

ResultsPlus
Examiner Comments

The most common misconception was that a firewall is used to delete viruses.

Question 2 (c)

Many candidates mentioned distance to the router without commenting on bandwidth or reducing the resolution of the film, or buffering.

(c) Letta watches a film online.

Describe **one** way to reduce the amount of time a film appears pixellated when it first loads from an online streaming service.

(2)

One way to quickly make a film appear less pixelated is to disconnect some devices that may be using too much bandwidth, making the film pixelated, from the network. This way, more bandwidth will be available for the stream

Question 2 (d)

Quite a number of responses described latency well, but occasionally responses indicated incorrectly that high latency was good.

(d) Describe high latency.

(2)

The time it takes for a request between a server and a computer. High latency means this time taken is increased resulting in lag, or high ping.

Question 2 (e)(i)

Many candidates discussed blocking of websites and did not mention user permissions and access rights.

(e) The hotel network manager has administrator privileges.

   (i) Explain **one** reason an administrator would use a network operating system to manage users.

                                                         (2)

This is to make sure unauthorized users dont access certain files.

ResultsPlus
Examiner Comments

This response misses the expansion about user permissions to gain the second mark.

Question 2 (e)(ii)

Occasionally the second mark was not gained due to the vagueness of the response.

   (ii) Explain **one** reason why the network manager should back up data regularly.

                                                           (2)

He should back up data regularly in order to ensure that even if he accidentaly deletes any, he would still have all the data from the last backup stored safely.

ResultsPlus
Examiner Comments

This response gains both marks for implying that the restore process protects against the issues caused by accidental deletion of data.

Question 2 (f)

It was very rare to see a correct response to this question. Most incorrect answers referred to the importance of the path rather than the dependent nature of tasks.

Question 3 (a)(i)

Gaming, shopping and banking were the most popular responses.

3 Letta uses an online travel booking system.

    (a) A travel booking system is one type of online service.

        (i) Give **two other** types of online service.

                (2)

1 *train ticket booking system*

2 *filght booking system*

ResultsPlus
Examiner Comments

It is important that candidates give responses that are not a repeat of the examples in the question when asked to give 'other' types/examples, etc.

Question 3 (a)(ii)

Many candidates referred to advantages rather than features, limiting the award of marks.

        (ii) List **two** features of a travel booking system.

                (2)

1 *You can book a trip for traveling.*

2 *You can preview the place, which you will go in the trip.*

ResultsPlus
Examiner Comments

The first response is a repeat of the question.

The second response is too vague.

Question 3 (d)

Many candidates did not reference the impact on 'society'. Others responded with vague answers about extending knowledge and communicating with friends and family.

(d) Describe **two** positive impacts on society of increased access to technology.

(4)

1 Can connect with people from other cultures and become more culturally aware because now you can connect with anyone in the world using the internet

2 Can become more knowledgable due to how knowledge can be accessed easily through technology

Question 3 (e)(i)

Not many candidates responded fully that wikis allow for users to have edit rights over all content rather than just their own posts.

(e) Letta checks some hotel reviews on an online community.

(i) Describe **one** key feature of a wiki that is different from the key features of a forum.

(2)

Other users in a wiki are allowed to change and post newer updated content, as a wiki is user generated however a wiki is checked to see what the most appropriate and relevant content is.

ResultsPlus Examiner Comments

This response implies that all users have edit rights to all content and therefore gains both marks.

Question 3 (e)(ii)

A number of responses contained vague answers about the reduction of inappropriate behaviour, without commenting about the expectations and consequences.

(ii) Describe **one** way an acceptable behaviour policy will benefit an online community.

(2)

By following the rules and regulations of the online community not accepting any cookies.

ResultsPlus Examiner Comments

Although the word 'rules' is here, the response is not in the context of the question and was not awarded marks.

Question 3 (e)(iii)

The second mark was often not gained due to vague mentions of outcomes.

Question 4 (a)

Many responses focussed on working from home, without any mention of the impact of the Internet.
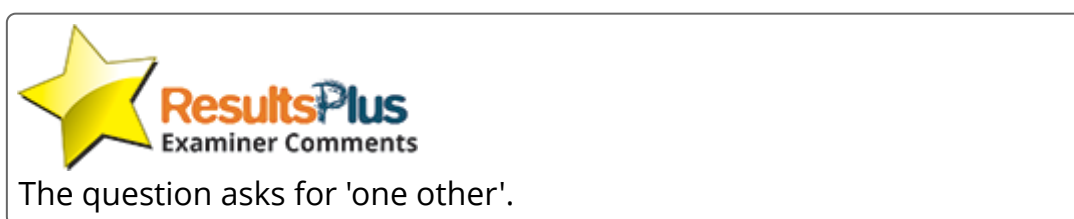
4   Letta uses the Internet for work.

   (a) Letta can collaborate with others so expertise can be shared.

      Explain **one other** way that the Internet could positively impact how Letta works.

(2)

each individual takes a specific task which means work can be divided so work will be done much faster

ResultsPlus
Examiner Comments

The question asks for 'one other'.

Question 4 (b)(i)

Many responses focussed on benefits to Letta rather than benefits to her employer. Also there were many vague responses about saving on storage space without mention of cost benefit or consistency/availability of documents.

Question 4 (b)(ii)

43% of candidates gained the mark from this question.

Question 4 (c)

Many responses for this question were confused about the type of software required. For example, filter options in image manipulation software or filtering searches within a web browser or file explorer software.

Question 4 (d)

Many candidates gave more than two rewardable responses.

Question 4 (e)

Many good responses were seen related to fake websites. Where candidates did not gain marks it was usually due to not mentioning explicitly that users were fooled into entering data into the fake website.

(e) Describe how pharming is a risk to data.

(2)

Pharming attracts uses into putting personal information into an untrusted website in order to gain their data.

ResultsPlus
Examiner Comments

The trustworthiness of the website is not relevant.

(e) Describe how pharming is a risk to data.

(2)

Pharming is a criminal activity used to trick users into giving out personal information by creating fake versions of trusted websites. Users could be tricked into giving personal information which can be used to blackmail them and extort them for money.

ResultsPlus
Examiner Comments

An example of a two-mark response.

Question 4 (g)

Incorrect discussions often focussed on the religion, poverty, lack of knowledge and/or skills of rural areas. It was felt that candidates were muddling up rural communities with developing countries. Whilst infrastructure was mentioned there was a popular misconception about the relative merits of mobile or landline broadband. Many candidates also focussed extensively on voice calling access rather than broadband.

P E E L

(g) Discuss the factors that influence the choice of landline broadband or mobile broadband connectivity for rural communities.

(8)

In rural communities there aren't many cell towers so access to mobile broadband is will be harder because the radio signals are lower in certain locations. Mobile broadband connects your phone to the internet by 3G or 4G because it uses your sim card from your network provider to connect to radio signals by cell towers. So rural communities would much prefer to have a landline broadband than a mobile connectivity because of their area. Landline broadband is also much cheaper than mobile broadband. Although mobile broadband is faster it may not have consistent internet access that a landline provides. Rural communities must also view maintenance as that is an issue that you have to deal with, with a landline. When it comes having communication much more important than having internet connection.

would be better

Finally, ~~I would suggest~~ a landline broadband because it would cuccessed wraghout the community while mobile broadbard meny very and make it hard for members of the community to access the internet.

Content:

Cell towers, 3G & 4G, cost (limited number of points)

Level 1 – sometimes irrelevant.

Evidence:

Inaccurate idea that mobile is faster

Level 0 – the evidence seems to contradict the points being made.

Link to scenario:

Maintenance of landline – not really relevant to discussion (expansion is poor)

The scenario (rural communities) has not been addressed.

Level 1 – Few if any links

Conclusion:

Level 1 – It is a simple statement.

Clarity and organisation:

It is well organised and clear as far as the coverage of content allows.

Level 1 (lacks focus required for Level 2)

On best fit:

3 marks awarded as the response meets most of the Level 1 descriptors (only the evidence is lacking).

(g) Discuss the factors that influence the choice of landline broadband or mobile broadband connectivity for rural communities.

(8)

Mobile broadband is more expensive than landline broadband. Therefore, many citizens within the rural communities may opt for the landline broadband connectivity as they don't have such a high income.

However, some citizens may choose mobile broadband connectivity as it is much faster, such as 3G or 4G. This is an advantage, as it means they are able to connect to the Internet much faster in case of emergency situations.

Another factor why people may not choose mobile broadband connectivity within rural communities is because the signal may not always work perfectly and is often interfered. Which is a disadvantage as people might need to search for certain areas in order to access a good signal.

However, landline broadbands aren't always available as rural communities are often far from internet service providers (ISP's) and they could be quite costly to install and maintain. Therefore, it's a disadvantage to the citizens as they don't have much income anyways.

In conclusion, it's a very tricky choice

in rural communities to decide between a
landline broadband or a mobile broadband
                                    economical
connectivity , as there are disadvantages to
both.

Content:

- expense of adding infrastructure
- incorrect assumption that mobile is quicker than landline
- signal quality issues (this part is slightly spurious)

There are a range of points, so this just does enough to be in Level 2.

Evidence:

- Incorrect assumption that rural communities are poor, so may struggle to afford to add required infrastructure.
- Incorrect reference to interference as an issue.
- The evidence to support is too often inaccurate – e.g. signal quality / interference (it's more about range with this scenario – which is covered in the relevant section – so one point is supported.)
Level 1.

Link to scenario:

The response picks up on the fact that rural communities may lack the infrastructure required and have mentioned cost of installation.

Level 2 – (including some generic points)

Conclusion:

Level 0 – No relevant conclusion.

Clarity and organisation:

The argument is not clear but the organisation is satisfactory. Level 1 (lacks focus required for Level 2)

On best fit:

4 marks awarded as the response is better Level 1 in places, but lacks the focus to clearly meet all Level 2 descriptors.

Question 5 (a)

Many candidates focussed their responses on the features or internet access limitations rather than on the need for rapid access to the video file for editing and rendering the film.

5 Letta downloads software to her laptop.

(a) Explain **two** reasons why locally installed software is used for editing video.

(4)

1 video-editing software is very large in size (multiple GB), and it would take a very ~~long~~ long time to download ~~of host~~ ~~off hosted~~ off hosted every time it needs to be used, if the software is hosted.

2 video editing software ✗ requires a lot of processing power and ~~of~~ high ~~✗~~ ✗ data-transfer speeds in order to be used efficiently. If the software is hosted, it may take much longer to render ~~videos~~ and upload videos.

RESPONSE 1: Two marks from the second mark point.

RESPONSE 2: One mark (from the second part of the first mark point) "video editing requires lots of processing power" and one mark (from first part of the third mark point) for "may take much longer to render videos", which was just enough to imply rendering could not be done in real time.

Question 5 (b)

Candidates often lost marks for repeating the question in terms like 'communication software is used for communicating with friends/relations'.

(b) State **two** purposes of communication software.

(2)

1. Send & text messages to people

2. Share files or images with people

ResultsPlus
Examiner Comments
Two marks: awarded from mark point 3 and mark point 2.

(b) State **two** purposes of communication software.

(2)

1. To email people.

2. to message people via SMS.

ResultsPlus
Examiner Comments
Both responses are from mark point 3 so a maximum of 1 mark could be awarded.

ResultsPlus
Examiner Tip
When asked to state two of something, make sure the responses are unique.

Question 5 (c)

Many candidates provided multiple examples of benefits but did not provide a creditworthy expansion of the explanation.

Question 5 (d)

Many candidates responded with adapted keyboards and/or mouse – eg braille keyboards, joystick. Some mentioned software applications such as speech-to-text rather than a hardware device.

(d) List **two** peripheral devices that could be used to input text by people who are unable to use a mouse and keyboard.

(2)

1. Touch Screen

2. Sensor Speech recognition

ResultsPlus Examiner Comments

Speech recognition is software not hardware.

Question 5 (e)

Many candidates responded that defragmentation produced more storage space. Few mentioned the benefit of reducing the access time.

Question 5 (f)

Most candidates scored well on this question.

Question 5 (g)

This question was better answered than Q04(g), with many candidates providing balanced arguments about privacy and trust and the need for security in their discussion about the monitoring of movements and communications. Where responses did not gain marks, it was often because they made simplistic points, limited in scope, with little expansion of the ideas.

(g) Discuss the choices society must make about the rights of individuals when monitoring movements and communications.

(8)

By monitoring individuals movements and communications, ~~society can be~~ and flaws it can keep ~~so~~ our society more safe but can also bring its own dangers. In this essay I will be discussing the benefits and drawbacks of monitoring individuals ~~so~~ which the society ~~can~~ could take into consideration when making choices.

First of all, CCTV and cameras on the road can monitor our society and ensure better security. It makes criminals on the run easier to ~~track~~ find and arrest which avoids them from harming more people and breaking more laws. This is also important in giving us justice since it can sometimes prove our innocence as well.

~~ID~~ ID cards and passports are also important in monitoring individuals since it is needed ~~in~~ for us to travel and work. This ~~texts~~ ~~B~~ can help us to find people who are missing and again, limits criminals' convenience to travel or run away which can stop ~~potential~~ people from wanting to commit crimes in the first place.

Communications online can be monitored as well, in some countries, all text messages can be kept ~~see~~ recorded for years ~~in~~ in order to monitor individuals. This does help ~~to~~ to keep online communities more safe and also ~~exists~~ stops young people from spreading inappropriate things and videos.

However, as it keeps us safe, it can make us feel less trusted since it feels like our every move is watched and supervised. This can make people feel uncomfortable and offended. As mentioned earlier, some countries, ~~keep the text for example like~~ keeps peoples messages for 3 years and that could cause some people to move away.

It can also ~~steal~~ invade people's privacy. We might feel like we have to compromise basic rights and privacy to be kept safe, which is definitely a disadvantage of individual monitoring.

GPS ~~is~~ is a part of monitoring individuals. Nowadays many people

use navigation applications that tracks our locations in the process of navigating, and many other applications can ask for permission to get our GPS data too. This might give criminals chances to find out where we, or our friends and family are, or where we live. That can bring great dangers to us too.

Overall, I believe that individual monitory does make force the society to compromise their privacy to a certain level; and could bring potencial safety issues, but the advantages and "safety it ensures definitely out weights the drawbacks.

Content:

- Methods of moitoring (CCTV, road cameras, ID cards, passports)
- Keeping records of communications
- Privacy
- Feeling of mistrust
- Compromise privacy for safety
- GPS
- Permissions
- Dangers presented by this.

Level 3

Evidence:

Finding criminals Proving guilt *or innocence* – – this is good counterpoint, especially as it is discussed in the terms of 'justice'.

Knowing they are being tracked may prevent criminals from carrying out criminal/inappropriate behaviour.

Level 3 – Evidence for all points.

Link to scenario (rights of individuals) :

The scenario has been clearly addressed Level 3 – Majority (all) links

Conclusion:

Level 3 – Excellent. It links the comparisons made in the discussion.

Clarity and organisation:

Well organised and clear as far as the coverage of chosen content allows.

Level 3.

On best fit:

Exemplary response: 8 marks.

Paper Summary

Based on their performance on this paper, candidates are offered the following advice:
- Develop the good practice of expanding and explaining answers using examples and reasons, where more than a simple statement or list is required
- Respond with the context of the question in mind
- Do not repeat responses when more than one example/reason is required
- Identify key words and command words in the question to ensure responses reflect what the question asks
- When required to give one other example/reason, ensure the response is discrete from the given example/reason
- Practise a range of extended questions, not just balanced arguments
- Allocate time to plan responses to the extended questions

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