



Examiners' Report Lead Examiner Feedback

January 2021

Pearson BTEC Nationals
In Information Technology (31760H)
Unit 1: Information Technology Systems

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Introduction

This was the seventh series of the new specification for Information Technology, and as such, the seventh time that assessment has been via an externally set examination rather than via centre based internal assessment.

The question paper followed the same format as the January 2020 paper and the sample assessment materials published on the Pearson website. Four scenarios were used for assessment; each scenario broken down into a number of questions which assessed a range of specification topics. Learners were expected to demonstrate knowledge and understanding of the specification topics and apply this knowledge to the given scenarios.

The intention is to offer as broad a coverage as possible for all areas of the unit content. Questions have varying weightings attached to them, with 2 to 6 marks for the lower demand questions and 6 to 12 marks for questions where an extended response was required, such as discussion and evaluation.

Extended response questions were marked using a 'levels based' approach to assessment. The overall quality of the response was considered rather than the specific number of points gained. There was also a focus on the use of suitable technical and vocational language and terminology within each response. In line with the January 2020 paper there were six extended questions on the paper.

In this series there was one diagram question, marked using a level based approach.

The remainder of the questions on the paper were assessed using a 'points based' approach, where learners gained marks by identifying, for example, a benefit or drawback related to the scenario and then gaining additional marks for giving appropriate expansion(s).

Introduction to the Overall Performance of the Unit

In general learners are coping slightly better with this type of external assessment, although trends identified in January 2020 are still in evidence.

Learners often failed to read the questions carefully and provided responses which did not answer the question set and were therefore not mark worthy.

Others failed to gain all of the marks available on short response questions by not looking carefully at the number of marks available for a question. The marks shown in brackets on the paper indicate the number of points required in the response.

As in January 2020 only a minority coped well with the long answer questions, where clear and detailed answers covering all sides of an argument or scenario were required and in many instances learners showed lack of knowledge of the overall specification content with some blank responses.

Individual Questions

Question 1

The scenario for this question was based around students living in shared accommodation with other students. The accommodation has access to a shared network with internet access.

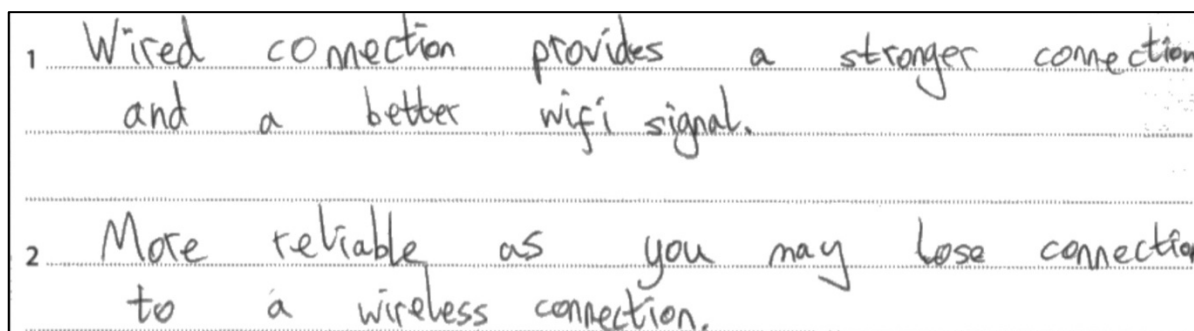
The students use both wired and wireless connections to the network.

Q01a

Learners were asked to identify two benefits of using a wired connection rather than wireless to connect to the shared network.

The question was marked using a points-based system, learners gaining two marks for identifying two benefits. Majority of learners gaining 2 marks, and very few learners gaining 0 marks.

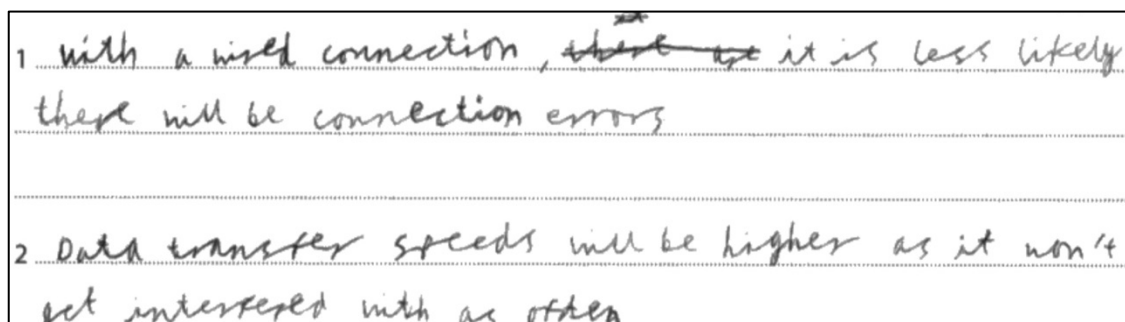
This learner was awarded 1 mark. The first response was not mark worthy. The second response gained 1 mark for 'More reliable'.



1. Wired connection provides a stronger connection and a better wifi signal.

2. More reliable as you may lose connection to a wireless connection.

This learner was awarded 2 marks. The first response was not mark worthy because the response was too vague to be awarded for 'stable/reliable'. The second response gains 2 marks for 'data transfer speeds will be higher' and 'it won't get interfered with as often'.



1. with a wired connection, ~~there is~~ it is less likely there will be connection errors

2. Data transfer speeds will be higher as it won't get interfered with as often

Q01b

Learners were asked to identify two benefits of using a wireless connection rather than a wired connection to the shared network.

The question was marked using a points-based system, learners gaining two marks for identifying two benefits. Majority of learners gained 1 mark.

This learner gained 1 mark. The first response gained a mark for 'no wires to trip ...'. The second response is not mark worthy.

- 1 less risk of damage as there is no wires to trip on or drop water on
- 2 wireless connections are faster than wired

This learner gained 2 marks. The first response gained a mark for the first response for '... the user can be moving and can be further away from charging points' against signal is available anywhere. The second response gained a mark for 'easier and simpler to connect' against easier to connect.

- 1 With wireless connection the user can be moving and can be further away from charging ports in the house. They can be accessing internet outside.
- 2 It is easier and simpler to connect on the wifi because you just need to ~~use~~ use the username and enter the password on the back of the router.

Q01ci, Q01cii and Q01ciii

One of the students travels to college by train and uses a laptop for internet research during the journey. The train company provides a free internet connection, however the student prefers to set up a personal area network (PAN) between the laptop and mobile phone.

Q01ci:

The question was marked using a points-based system, learners gaining two marks for explaining an advantage of using a PAN to connect to the internet.

The marks were spread with the majority of learners gaining 1 or 2 marks. A small percentage of learners did not achieve any marks.

This learner gained 1 mark for this response for '... allows the connection to be fast ...' against faster connection speed.

By using a PAN there is a more stable connection and allows the connection to be fast and stable and strong. Giving her fast connection and allowing her to be do her research quicker.

This learner gained 2 marks for this response for '... it will better security ...' against improved security, and 'The train companies free internet ... since the connection isn't secure', just enough to award against prone to vulnerabilities.

(2)
The advantage of using a PAN connection is that it will better security between ~~the network~~^{her laptop} and ~~the internet~~^{her phone} compared to using the train companies free internet. The train companies free internet would be prone to hackers since the connection isn't as secure.

Q01cii:

The question was marked using a points-based system, learners gaining two marks for explaining a disadvantage of using a PAN to connect to the internet.

The majority of learners were awarded 1 mark.

This learner gained 1 mark for this response for '... only covers a small geographical area' just enough to award against limited signal range.

The disadvantage of a ~~personal~~ connection is that it only covers a small geographical area. So it will be quite difficult to connect to internet. A user would be more suitable for ~~the to connect~~ connect to the internet.

This learner gained 2 marks for '... user has limited amounts of data' for uses (cellular) data allowance, and the expansion mark for '... could mean they could potentially run out of and be unable to do their work' for use up data available for other activities.

A disadvantage of using Personal area network is that if the connection is weak then the internet connection will be weak, also if the user has limited amounts of data that they can use it ~~can~~ could mean that they could potentially run out and be unable to do their work.

Q01ciii:

The question was marked using a points-based system, learners gaining four marks for describing the steps that needed to be followed to allow a friend's tablet computer access to the PAN.

The majority of learners were awarded either 2 or 3 marks.

This learner gained 1 mark for '... when giving her friend the code', just enough to award against Jacky needs to tell the friend the password. The first part of the response does not gain any marks because the question asks for the steps needed to follow to allow the friend to gain access and not able creating a PAN.

Jacky need to create a PAN with a password so other people close to her wouldn't have access to it. She would then need to make sure she isn't loud when giving her friend the code in case there are eavesdroppers.

This learner gained 4 marks for:

'... make sure that Bluetooth is turned on ...', for Jacky needs to turn on Bluetooth

'... friend would have to search for the device ...', for The friend would need to search for the device

'she will click on the device', for The friend needs to join the network (just enough)

'Jacky would have agree to allow her friend to have access to the connection', for Jacky would need to accept the pairing

Both of them would have to make sure that Bluetooth is turned on on ~~both~~ their devices. Then Jacky's friend would have to search for device that she wishes to use. After she finds the device, she will click on the device and it will connect to Jacky's device. Lastly Jacky would have agree to allow her friend to have access to the connection.

Q01d

Learners were required to explain the purpose of two given utility programs.

Some learners did not achieve marks for Disk cleanup because they explained 'defragmentation' instead.

The question was marked using a points-based system, learners gaining a total of four marks. Two marks for explaining disk cleanup and two marks for software firewall.

The majority of learners were awarded either 2 or 3 marks.

This response did not gain any marks because the learner explains defragmentation.

Disk cleanup

Disk cleanup defragments a disk, meaning ~~the~~ linked data sets that are physically separated are put together to make faster ~~the~~ data reading times.

Software firewall

It ~~sees~~^{scans} packets of data for malware, and when malware is detected, it alerts the user.

This response gained 4 marks. The learner describes both disk cleanup and software firewall fully.

Disk cleanup:

'This frees up disk space ... and a faster performance' can be awarded 1 mark for designed to free up disk space/improve performance, and 'removes any programs or apps that haven't been used ...' can be awarded 1 mark for removing unnecessary files/programs.

Software firewall:

'filters what data enters the laptop' can be awarded 1 mark for monitors incoming traffic, and 'this is for security' can be awarded 1 mark for ensure security.

Disk cleanup

Removes any programs or apps that haven't been used or have been completely used to the point that it cannot be used again. This frees up disk space allowing the laptop more storage and a faster performance.

Software firewall

Filters what data enters the laptop, this is for security. Data is checked to see if it should be allowed in or not protecting from viruses and cyber attacks.
based on irregular data being blocked

Q1e

This was the first level based extended question on the paper and worth 8 marks. Learners were asked to discuss the implications of installing open source rather than proprietary software for Jacky who uses proprietary software to complete her word processing and spreadsheet based college assignments.

The majority of marks were awarded for top of Level 1 and Level 2 responses, with learners scoring between 3 and 5 marks (Level 1 and 2).

The following response was placed in Level 1 mark band. The learner makes two points about security and cost which demonstrates isolated elements of knowledge and understanding. The response makes very little reference to the context in the question, with limited discussion.

Open source will have better security than Proprietary because open source software tend to be updated frequently. Open-source is more cost-efficient than Proprietary application, since open-source software doesn't cost anything. Open-source softwares are easier to use and ~~have~~ more have a more user-friendly interface than Proprietary softwares. Open source applications ~~are~~ are more compatible with other devices which would make it easier to work open source than Proprietary softwares. Also, is Turkey is working on out of date Proprietary softwares. She is at the risk of losing her ^{work} due to software having bugs and deleting her or potentially her work being stolen due to the application being out of date.

This response was placed in Level 3 mark band. The learner has demonstrated some accurate knowledge and understanding with a partially developed discussion that considers some different aspects. There are some gaps and omissions, however most points made are relevant to the context in the question, however the link is not clear.

The response considers a range of different aspects and how they interrelate, such as software customization/code, cost, community support, tools might not be suitable, and compatibility.

With open source software it allows the user to customize the software and code on the computer. This means it allows the user to have more freedom in changing the code on the software. The open source software is free to use so the user won't have to pay for the accessing the tools on the software. The community that use the software can give advice on how to use the software and provide help. The community will provide regular patches and fixes because they in the community is always looking for patches and fixes in the code and software. This means it is less susceptible to hackers because it is regularly updated so hackers are less likely to think to hack it. However open source software it may be costly to get someone in the community to help teach you how to use the software. The software itself may not have all the tools required for the assignments set by the teacher. The software may not be compatible with the operating system of the computer.

Question 2

The scenario for this question was based around a company that provides software for primary school children. The company use PCs in the office and laptops when demonstrating the software to the children in the school.

The devices have a graphical user interface (GUI), optional command line interface (CLI), single-user multi-tasking operating system and a hard disk drive.

Q2a

This was a points based question where the learners were required to explain the purpose of a user interface. Two marks were to be awarded, one for an identification point and one for the expansion.

In general learners made a good attempt at the question, with the majority of learners at least gaining one mark. Most marks were awarded for identifying that a GUI allows users to interact or navigate with the computer system.

This response gained 1 mark for '... allows the user to communicate with the computer' which was the identification point.

A user interface allows the user ~~the~~ to communicate with the computer by using devices such as a graphical user interface, ^{and} a command line interface. This allows the user to communicate with the operating system.

This response gained 2 marks. '... purpose of communicating between the users commands and the device' for method for a user to communicate, and '... carry out the necessary procedures', just enough to award for in order to carry out tasks.

A user interface has a purpose of communicating ~~#~~ between the users commands and the device. The user interface must acknowledge the user's commands and carry out the necessary procedures. The user interface allows the user to interact with the ~~can~~ PC.

Q02b

Following on the theme from **Q02a** learners were asked to explain two benefits of using a GUI rather than CLI.

Out of the 4 marks available most learners achieved 2 marks for a mixture of the first two mark points.

This response was awarded 2 marks for the identification and expansion for the first mark point.

The first response gains a mark for '... much easier to use and quicker to learn', and the expansion mark is gained in the second response for '... if people don't know how to code'.

1 A benefit of a GUI is that it's much easier to use and quicker to learn. This means that many people would be able to use it and if they don't know how, they can easily learn.

2 Another benefit is that there isn't any or much code unlike CLI. This means that if people don't know how to code, they will still be able to use GUI.

This response was awarded 4 marks for the identification and expansion for the first and second mark points.

The first response gains 2 marks for '... easier to use for beginners ... as with CLI they would need to know the correct inputs of code'.

The second response gains 2 marks for 'it allows more room for error' (expansion point), and 'if you put something wrong in the command line' (identification point, commands do not have to be typed).

1 It is much easier to use for new beginners as with CLI they would need to know the ~~can~~ correct ~~way~~ inputs or code to get what they want.

2 It allows more room for error as with a ~~room~~ CLI if you put something wrong in the command line it will not work and you may have to start again.

Q02c

The learners were required to explain two reasons why a single-user multi-tasking OS would be installed on each office PC.

This question was not answered well, with most learners answering by stating one user can multi-task.

The majority of learners scored 1 or 2 marks which were awarded from the second mark point. Most learners did not gain a mark for only one user would need to access the PC because they didn't include 'at any one time'.

This response was awarded 1 mark. The first response gains 1 mark for 'The user may be using several programs at once ...' for the expansion of the second mark point. The second response is not mark worthy.

1 The users may be using several programs at once, such as a text editor, internet browser and email. This would allow them to work on several things at once.

2 Single-user would be more secure allowing individuals to have their own login details. This would allow data to be private between users.

This response was awarded 4 marks. The first response is just enough to gain 2 marks for '... as single user means they are the only ones that can access that information as it is for their own specific user ... through user name and password', for expansion in mark point three. The response is just enough to award for the identification mark 'They are the only one working on that PC'.

The second response gains 2 marks for 'Multitasking allows more work to be done at once ... as more than one application can be open at a time' for expansion mark point 2, and '... increasing productivity', for the identification mark point 2.

1 It keeps peoples files and data secure as single user means they are the only ones that can access that information as it is for their own specific user that requires verification through username and password to gain entry. They are the only one working on that PC so all work done is their own meaning it is safe and secure from being tampered with.

2 Multi tasking allows more work to be done at once increasing productivity as more than one application can be open at a time so applications can run and work in the background so the user can do multiple things without having to close everything down, also saving time.

Q02di

Programmers store their designs on the internal hard disc drives on their PCs which can be at risk even when not connected to the internet.

Learners had to explain two threats to data that can arise when a PC is not connected to the internet.

The majority of learners scored between 2 marks, with some not achieving any marks. This seemed to be because learners were unfamiliar with using computers and working offline.

This response was awarded 2 marks. The first response gains both marks for '... overriding a document' expansion for mark point 4, and 'accidentally click yes' identification for mark point 4. The second response gains no mark for 'deleting files' because the mark has already been awarded for the expansion of accidental damage in response 1.

- 1 The first risk they may face could be overriding a document and losing any up-to-date work, for example if they tried to ~~rename~~ a folder the same as another ~~it~~ and the names are identical, it should prompt you by asking if you want to override this and if they accidentally click yes they will lose their work.
- 2 The second risk is deleting files that they need, for example they could be cleaning up their folders and delete them by accident, and unless they have a ~~new~~ 'recycling bin' ~~then~~ they will be ~~un~~ unable to access the ~~to~~ work once it's been deleted.

This response was awarded 4 marks. The first response gains both marks for 'human error' identification for mark point 4, and 'users can accidentally delete data' expansion for mark point 4. The second both marks for 'or the HDD is damaged' identification for mark point 5, and 'the user may never be able to retrieve that data again ... has been lost' expansion for mark point 5 (data loss).

- 1 one threat is human error, users can accidentally ~~delete~~ delete data that is stored on their PC's. This means that the data may not be recoverable and the user ~~to~~ will never get that data back.
- 2 another threat to data ~~threat~~ is damage. is a computer or the HDD is damaged then the user may never be able to retrieve that data again as the data has been lost.

Q2dii

This was the second level based extended question on the paper and worth 6 marks.

The company is considering moving to cloud storage system to reduce the threats when storing data to their hard disk drives.

Learners were asked to discuss how moving to a cloud storage system would impact Miguel and the programmers.

The majority of marks were awarded for Level 2 responses, with learners scoring between 3 and 4 marks.

The following response was placed in Level 1 mark band. The learner makes two points about cost and security of data which demonstrates isolated elements of knowledge and understanding with limited discussion. The response is generic and makes little or no consideration of different aspects, with major gaps/omissions. The learner does make reference to the context in the question.

(6)

Moving to a ^{Storage} cloud ~~Storage~~ system would be beneficially because it will cost less ~~too~~ due to not buying HDD or a SSD to store all of your data. Secondly can be it can be easier to retrieve your data by clicking cloud storage on settings on your computer. It will be harder to keep the ^{data} ~~Storage~~ secure due to it being in a cloud storage system. Miguel and the other programmers would not have to worry about the HDD breaching the computer due to the ~~cloud~~ ^{Cloud} storage systems.

The following response was placed in Level 3 mark band. The learner makes five points about remote working, getting used to the system, collaborative working, costs, and security that demonstrate mostly accurate knowledge and understanding with a well-developed discussion that considers a range of different aspects. Although there are minor gaps or omissions, the points made are relevant to the context in the question, and the learner provides consideration of how they interrelate.

It may benefit them as they might be able to work from home which means they might have more time to get more work done.

They will have to get used to using a cloud storage system as they may not be used to using it before and they might not like the change. It will take time for them to get used to.

However it may be beneficial as they can all work on a project together working from home as they have a ~~st~~ can share files, this will make it easier to work with groups and prove its ~~efficient~~ efficient.

Overall once everyone has got used to it, it will be easy to use the cloud storage system. Also the Miguel will benefit as he can have a

(Total for Question 2 = 20 marks)

subscription for unlimited storage for a certain time frame.

It is also more secure.

Question 3

The scenario for this question was based around a furniture company that sell furniture to schools throughout the UK. The manager and administrative staff use PCs whilst working in the company office and the three sales staff use laptops when working remotely visiting clients.

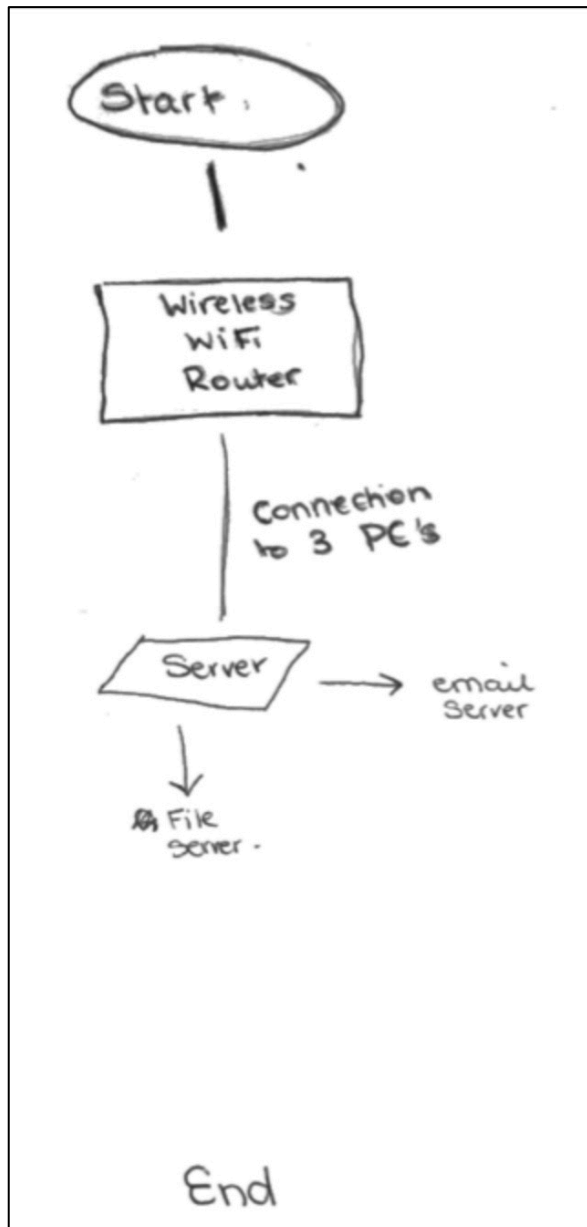
Q03a

The company want a system that provides wireless connection for the three office PCs, file and email servers, and secure remote wireless access for laptops.

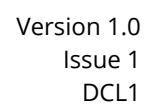
Learners are required to draw a diagram to show the setup of the system that includes devices, connections and annotations.

The majority of learners scored between 2 and 3 marks (Levels 1 and 2).

The following response gained Level 1. Diagram provides partial coverage of devices in a flow chart. Even though there seems to be some annotations and connections included, there is no indication as to whether they are wired or wireless.



The following response gained Level 3. Diagram provides thorough coverage of appropriate devices which almost meets the requirements of the scenario. Diagram does not include Internet or firewall. Connections are shown which fully meet the requirements, and includes detailed and accurate annotations of devices and connection types used.



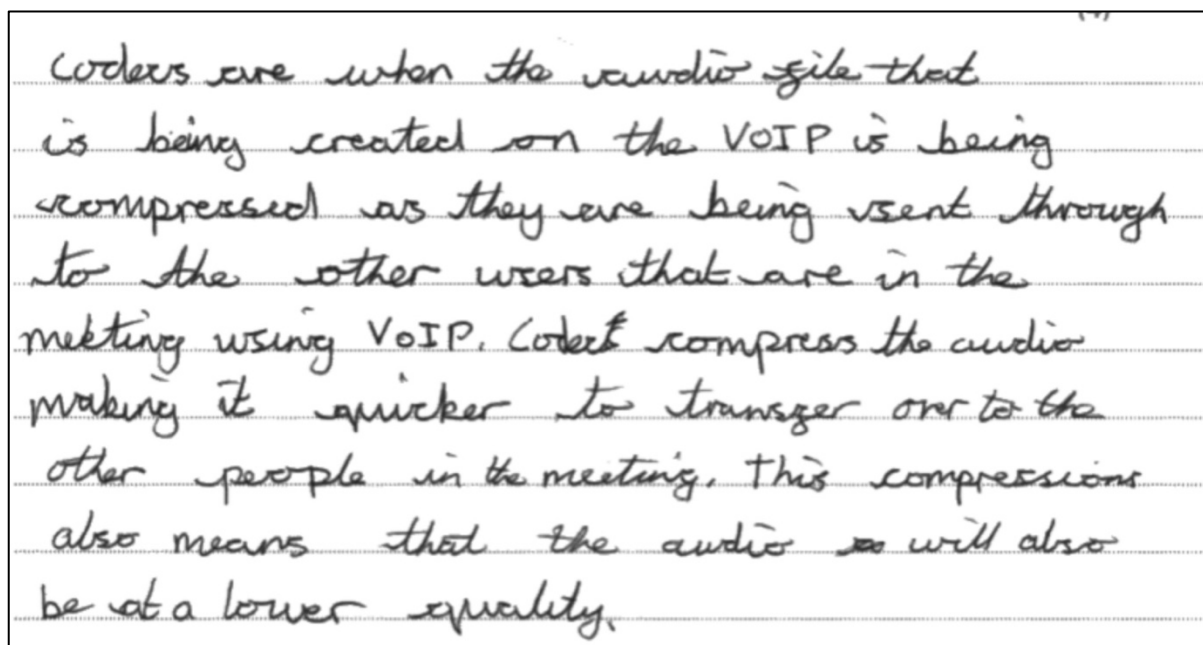
Q03bi

Sales staff work remotely from home using a laptop provided by the company. The company hold weekly meetings with all sales staff using voice over internet protocol (VoIP).

Learners were required to describe the use of codecs when using VoIP.

The majority of learners did not achieve any marks due to a lot not attempting the question, with other learners gaining at least 1 mark. The learners seemed to know codecs compressed/decompressed and coded/encoded signals.

This response was awarded 2 marks for '... audio file ... is being compressed' and '... that the audio will also be at a lower quality'



Codecs are when the audio file that is being created on the VOIP is being compressed as they are being sent through to the other users that are in the meeting using VoIP. Codecs compress the audio making it quicker to transfer over to the other people in the meeting. This compression also means that the audio will also be at a lower quality.

This response was awarded 4 marks. The learner gained the marks for showing an understanding that '... signals from analogue signals into digital signals', '... and decoded back ... for the recipient on the other end ...', 'CODECs perform this function because ... files are very large and need their file size needs to be reduced', and '... reduce quality'.

Codecs are used to encode and decode data. When using VOIP, (Glands)
the software uses a hardware CODEC. This encodes the person's speaking signals from analogue signals into digital signals. This ~~data~~ is then processed in the system, and decoded back into analogue signals for the recipient on the other end to understand.

CODECS perform this function because video and audio files are very large and need their file size needs to be reduced, in order to send the data ^{using less bandwidth} more quickly. However, CODECS can reduce the quality of the VOIP.

Q03bii

This question was level based extended question and worth 6 marks. The learners had to discuss the implications to the company of using a VPN to allow the sales staff to work remotely.

The majority of learners achieved Level 1 and Level 2 marks with a lot talking about remote working in general rather than focusing on VPNs.

This response was awarded Level 1 marks. The learner has demonstrated isolated elements of knowledge and understanding with the discussion focused on generic points, such as encryption for data security. There is little consideration of different aspects, and the response has major gaps. The points discussed are relevant to the context in the question. In the second paragraph, learner discusses working from home rather than the implications of using a VPN to work remotely.

When using a VPN to work remotely, ~~you have to~~ It allows you to access Company files from anywhere ~~without~~ without the fear of it being leaked it does this by ~~encrypting~~ encrypting your data to make it unreadable for anyone ~~without~~ ~~an encryption~~ who tries to intercept her while she's accessing her Company's server.

VPN ~~access~~ also allows for staff working from home ^{able to} to be ^{able to} have Video Conferencing with other staff at the Company which can improve productivity. Working from home with a VPN also makes it easier to move about and see clients while still being secure, they would be able to send reports to the Company server without any problems.

This response was awarded Level 3 marks. The learner has demonstrated mostly accurate and detailed knowledge and understanding with a well developed and logical discussion that considers a range of different aspects, such as security, cost implications and training needs.

There are minor gaps/ommissions, however points made are relevant to the context in the question with consideration of how they interrelate.

VPNs are important for the sales teams because they transfer sensitive information and because they visit clients, they are likely to connect to multiple unsecure networks where the encryption of a VPN would be important.

One implication is cost. The company would be paying monthly or yearly fees to the VPN company to access their servers, possibly paying extra for each device used. ~~The company~~

Another implication is security. While transferring data to the VPN is secure, the company has to trust that the VPN company won't do anything malicious with the sensitive data it transmits like setting.

Another factor is the ease of use and implementation. If the VPN software isn't easy to use the staff might not use it leading to security weaknesses. The employees were likely given training on how to use the software.

Q03c

This question was level based extended question and worth 8 marks.

The company holds data about employees and client sales, and there is legislation in place to ensure this data is protected. Learners have to discuss the relevant legislation that protects this data, including company and employee responsibilities.

Most learners achieved between 3 and 4 marks (Levels 1 and 2). Most marks were awarded for understanding the Data Protection Act and Computer Misuse Act, but very few learners discussed company and employee responsibilities. Some learners discussed Copyright Act which is not relevant for this question.

This response was awarded Level 1, 3 marks. The learner has demonstrated some accurate knowledge and understanding with a partially developed discussion that considers some different aspects surrounding different legislation.

There are some gaps/omissions, however the points made are relevant to the

context in the question. The learner discussed Data Protection Act, Computer Misuse Act and GDPR, but has not considered the acts from the company and employee perspectives. They have memorized each of the acts, but did not relate the points to the scenario, otherwise would have achieved higher marks.

→ company employees must ensure that they follow guidelines from the Data Protection Act, Computer Misuse Act, and the ~~GD~~ GDPR Act.

→ The Data Protection Act consists of 8 principles to ensure that data of individuals is kept ethically, securely and safely.

→ Principles of the Data Protection Act include:

- Data must be accurate and up to date.
- Data must be specific and relevant.
- Data should be adequate (the company cannot hold data that is more than they need).
- Data should not be kept longer than needed.

→ The Computer Misuse Act ~~ensures~~ was to ensure that cyber crimes were dealt with appropriately and that unauthorized access to IT systems was not permitted.

→ Principles of the Computer Misuse Act include:

- intent of unauthorized access
- ~~intent to modify or change information or systems~~
- intent of unauthorized access to commit a crime
- intent of unauthorized access to change or modify information.

→ GDPR GDPR is legislation used by for surveillance to ensure safety of individuals. Public bodies are able to access information based on the GDPR legislation.

This response was awarded Level 3, 8 marks. The learner has demonstrated mostly accurate and detailed knowledge and understanding with a well-developed and logical discussion that considers a range of different aspects.

Although there are minor gaps/omissions, most points made are relevant to the context in the question with clear links. The learner discussed GDPR/Data Protection Act, consequences of not adhering to legislation, protection for safeguarding sensitive data, security for devices.

The biggest legislation that is in place for protecting data is the (GDPR) General Data Protection Act (1976) which states that a business, when holding data of a customer/client must be fully transparent with how their data is used, stored and protected. Their data must also be protected adequately so that it cannot be illegally accessed by unauthorised personnel. Otherwise the business will find itself heaped in legal and financial trouble, most likely at risk of being sued by clients or even be forced to close.

Company responsibilities include providing sensible protection for data held, such as firewalls, data encryption and VPNs to name a few. These must also be kept up to date, which may mean that Sch Furn may need to train existing employees, hire new IT staff or hire a 3rd Party company.

to secure their data. All of which will cost the business a lot but will greatly mitigate the risk of a security breach. Staff and other responsibilities include things like keep devices secured with tough passwords and not neglecting them where they can be easily accessed. The cloud ~~water~~would be useful here as it means that staff will not need to use as many physical storage devices like HDD's or USB drives which can be easily lost, damaged or stolen. ~~As~~ All of which is covered by the GDPR to help keep the business and customers safe and secure.

Question 4

The scenario focusses on a bank that has several high street branches and an online banking service. One of their customers accesses the online banking service via his portable device which has up-to-date virus checker to protect against viruses and other malware.

Q04a

This question was level based extended question and worth 10 marks.

The learners are required to discuss threats when using the portable device for online banking. They were to consider threats other than virus and malware attacks and steps that can be taken to reduce the threats.

This question was well attempted by most learners although, a lot of learners did not read the question properly and discussed virus and malware attacks so lost valuable marks.

The range of marks were spread between 3 and 7, with most being awarded in Level 2.

This response was awarded Level 1. The learner has demonstrated isolated elements of knowledge and understanding with limited discussion that considers a couple of different aspects, such as hackers and protecting data during transmission via a VPN. There are major gaps / omissions, and points discussed have not been expanded.

plan

hacker.

- malware

one threat to Jason's data is hackers, if ~~to~~ Jason is using an internet connection that many people have access to then he could be targeted by hackers who could use the internet connection to hack in to his device and steal his data.

one way he could prevent this is by using a VPN which would protect his devices against hackers when using open networks.

another threat is malware. Jason could accidentally download malware sent to him or off the internet, that to collect his information and data. this

means that some one else could gain access to the data from the malware.

one way to ~~stop~~ ^{system} this is by using ~~data~~ that checks for malware on devices and to not open documents if he doesn't ~~to~~ ^{he} has unsure about.

This response was awarded Level 3. The learner has demonstrated mostly

accurate and detailed knowledge and understanding with minor gaps or omissions. Most points made are relevant to the context in the question. There is a well-developed, logical discussion which considers a range of different aspects.

The learner has discussed physical protection of portable device, phishing, firewall, and protecting data during transmission.

One threat to Jason when using a portable device for banking is malware such as spyware. Spyware hides itself in a computer system and monitors a users activity. For example, keyloggers monitor a persons keystrokes. This malicious software can thus record passwords to steal data. To prevent this, Jason could use anti-virus software.

One threat to Jason using a portable device for online banking is unauthorised access. For example, if Jason's phone gets stolen, the thief may have access to his online banking and accounts. This can lead to money being stolen out of his account. One way to prevent this is by having passwords. Jason's password should be 8 characters long, and contain upper, lower case letters and symbols. He should also not use the same password for multiple accounts. This reduces the risk of any thief accessing Jason's banking if his portable device is stolen.

Another threat to Jason of using mobile device is phishing. Phishing is when emails are sent, pretending to be from a real company. The email contains a link, where users enter personal data. This data is then sent to hackers. If Jason falls victim to a phishing attack, this could lead to identity fraud or bank theft, which could be harmful to Jason. To prevent

This, Jason could use a ^{hardware} firewall. Firewalls sit on a network and use packet filtering to spot dangerous or suspicious malware. They do this by comparing data packets to the firewall policy. If they do not match the policy, the data is blocked. This would ensure that phishing emails are detected as harm ~~not~~ ^{with} malicious intent, to ensure Jason is safe when online banking.

Another threat is if Jason transfers data on unsecured means. For example, transferring data online which doesn't have 'HTTPS' in the URL. The threat to this is that data can be stolen from Jason's account, such as money. To prevent this, Jason could use encryption such as symmetric. This ensures his data is encoded into a ciphertext so that it is secure.

Q04b

The bank is considering closing all high street branches and moving solely to its online banking service.

This question was level based extended question and worth 12 marks.

Learners have to analyse the implications, other than security of data, for the bank moving the online banking only. They have to consider the implications for the customers, employees and the bank itself.

The majority of marks were awarded between 5 and 9 marks (Level 2).

This response was awarded Level 1. The learner has demonstrated isolated elements of knowledge and understanding with major gaps / omissions, and has given limited analysis. The response has been broken down into component parts and given a few points which are relevant to the context in the question. The learner has provided discussion on the customers' difficulty to deposit money and lack of access to IT, job losses for the employees, and the bank losing customers.

- It will become difficult for customers to deposit money into their account with cash.
- Bank employees will lose their jobs if high street branches ~~close~~ close down.
- JKH bank will lose customers because customers will move to another bank that has high street branches.
- Elderly customers won't be able to use JKH online banking because they probably don't have a smart phone or computer to access it.

This response was awarded Level 3. The learner has demonstrated mostly accurate and thorough/detailed knowledge and understanding with a well-developed and logical analysis that considers interrelationships in a sustained manner. The learner has broken the situation down into component parts and most are relevant to the context in the question.

For JHK Bank, moving to an online banking only service will have some advantages such as them saving money because they would require less employees and facilities (save money on electricity etc.) This also means that employees wouldn't have to work as hard because there are no customers coming into their facilities. Moving to online banking only wouldn't ~~benefit~~ ^{affect} some customers as they may already be using it however, some customers especially the elderly might be very unfamiliar with IT and prefer to use the high

street branches so moving to online banking only could ~~also~~ lead to losing customers. It also means that a lot of employees would lose their jobs because the company needs less workers so some employees could be against

the change. For JKH Bank, losing a lot of employees and customers could lead to ^{receiving} bad reviews and a decrease in profit, also making their reputation suffer. In conclusion, I think JKH Bank should not close their high street branches because customers might not have access to the internet or are unfamiliar with IT which could lead to them leaving.

Summary

Based on their performance on this paper, learners should:

- Ensure they read the scenario to gain an understanding of the context of the question.
- Ensure they read the questions carefully to enable them to answer the question fully and gain the higher mark bands.

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