

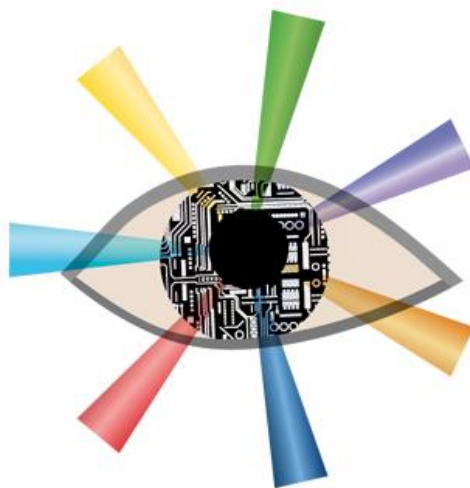


Pearson



Examiners' Report/
Lead Examiner Feedback
Summer 2017

BTEC Level 3 Nationals in IT
Unit 1: Information Technology Systems
(31760H)



Information Technology

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What is a grade boundary?

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

Setting grade boundaries

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

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

Variations in external assessments

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

Grade boundaries for this, and all other papers, are on the website via this link:

qualifications.pearson.com/gradeboundaries

Unit 1 – Information Technology Systems

Grade	Unclassified	Near Pass	Pass	Merit	Distinction
Boundary Mark	0	10	20	31	42

Introduction

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

The question paper followed the format identified in the sample assessment materials published on the Pearson website. Four scenarios were used for assessment; each scenario was then 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 was to offer as broad a coverage as possible for all areas of the unit content. Questions had varying weightings attached to them. There were 4 or 6 marks available for the lower demand questions and 6 to 12 marks for questions where an extended response was required, such as discussion, analysis or 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.

There was one diagram question on the paper and this was also 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, an advantage or drawback related to the scenario and then gaining additional marks for giving appropriate expansion(s).

Introduction to the Overall Performance of the Unit

Although some learners coped well with the content, requirements and degree of difficulty, it would appear that a number were not ready for the external assessment. Only a minority of responses achieved high marks in the long answer questions. These questions required clear and detailed answers covering all sides of an argument or the scenario and in many instances responses evidenced a lack of knowledge of the overall specification content. There were also many blank responses.

Individual Questions

Question 1

The scenario for the question was based on a small business buying and selling sports memorabilia. The business has a very small office with three computers.

Q1(a)

This was a points-based question with responses gaining the first mark for identification and the second for expanding upon this.

Learners were asked to explain two features provided by social networking site that would benefit the owner in advertising his business.

Responses to the question generally achieved low marks with very few learners gaining all four marks available. Many learners did not read the question carefully and therefore missed the reference to 'features provided' and gave generic responses relating to the benefits of online advertising such as reaching a wider audience. Many responses mentioned cost which again is not a feature of social networking.

Where responses did achieve marks, it was often for citing the ability to communicate with customers or posting videos/pictures of the memorabilia. Unfortunately, a few responses commented on how this would benefit the company. However, a small minority mentioned that this would build up customer relationships or lead to increased sales. A few responses mentioned demographics but did not refer to 'specific' groups such as sports enthusiasts.

If responses are to gain high marks, learners should be encouraged to read the question carefully before answering and then to include detail, in particular with reference to the scenario.

The response shown below is typical of a generic answer which does not identify the 'features' provided by social networking and this did not gain any marks.

(a) Explain **two** features provided by a social networking site that would benefit Ohman in advertising his business.

(4) Q01a

- 1 There are alot of people that use social media as a form of contact or to generally just have therefore alot of people will be aware of ~~the~~ ^{ohmans} business.
- 2 Also, the sites are mostly free and if not they are very cheap therefore not costing ohman as much money.

The following response gained two marks for the first part. The ability to 'score a post based on hits' gained a mark for the identification. It then gained a second mark for the expansion point 'which will better home in on how to advertise effectively towards his target market'.

Unfortunately the second part of the response did not gain a mark.

(a) Explain **two** features provided by a social networking site that would benefit Ohman in advertising his business.

(4) Q01a

- 1 The ~~abit~~ ability to "score" a post based upon the ~~likes/likes~~ it recieres can help him to better hone in on how to advertise effectively towards his target market.
- 2 Social Networking is free and can get huge attention so will be very cost effective for a small business who will likely be somewhat lacking in capital.

Q1(b)

This was also a points-based question and the responses to Q1b were similar in standard to Q1a.

The focus of the question was on the drawbacks of using social networking sites to advertise a business.

Many learners produced responses relating to hacking and viruses which were not mark worthy. As above' costs were often mentioned and many implied that the company was wasting its time as there is huge competition for business on the internet.

A few responses gained marks for customers 'posting negative comments' but then failing to expand upon their answers to the impact on the company.

The following response achieved no marks.

(b) Explain **two** drawbacks that may arise from using a social networking site to advertise the business.

(4) Q01b
1 People could start copying the idea and use it for ~~their~~^{their} own business, this means he could lose customers.

2 There is a chance his ~~his~~ site could get hacked as ~~you~~^{you} don't know what kind of people are on the site, this means loss of data could happen.

Q1(c)

This was the first level-based question on the paper. Marks were awarded for the overall standard of the response and the understanding shown by reference to the indicative content given in the mark scheme.

The question asked learners to discuss factors that should be considered before upgrading to a new proprietary Operating System.

Many learners completely missed the focus of the question and discussed the benefits and drawbacks of a proprietary operating system as against an open source operating system, others incorrectly discussed security.

As in Q1a where points were correctly identified there was no expansion of the marks, limiting responses gaining higher marks.

The response shown below does not gain the highest level marks, however, it has attempted to use logical chains of reasoning to link the response to the scenario and achieved 5 marks.

The learner has discussed several points, compatibility, training needs - linked to both costs and downtime, the effect of downtime is linked to sales and there is also reference to cost benefit analysis.

Discuss the factors that Ohman should consider before making his decision.

~~He~~ He should ^{first} consider whether or not ^{the machines (6)} ~~he~~ will be able to run the new operating system well or at all, because if they cannot, he will end up with three computers that are practically useless. Another factor he should consider is whether or not the employees will need new training on the new operating system because this can cause more costs associated with this training, also if they do require training it will cause down time, which can hurt sales, so should be kept to a minimum. Another factor he should consider are the costs and benefits associated, because if the costs are ~~huge~~ ^{huge} whilst the benefits are little to non-existent then it would not be wise to switch over.

Q01c

Q1(d)

This question was also levels-based and the main focus was on the 'business owner's' obligations with respect to 'display screen' element of the Health and Safety (H&S) Act.

The overall marks gained for the question were the lowest on the whole paper. This was largely down to learners failing to read the question and subsequently not identifying the focal points.

Many responses contained detailed discussions about varying aspects of the H&S Act. However the majority were not mark-worthy as they referred to such things as ergonomic furniture and RSI all unrelated to display screens. Other responses relating to the employees' obligation, rather than the owner's, again none of these gained any marks.

The need for learners to read the questions carefully is essential.

The following response was typical in that there is some discussion of generic issues, but no marks were given relating to 'display' screens' as specified in the question.

(d) Ohman is aware that the office environment must comply with health and safety regulations.

Explain how Ohman can ensure he fulfils his obligations with respect to the display screen equipment element of the Health and Safety (Display Screen Equipment) Regulations 1992.

(6) Q01d

~~The~~ To follow the regulation the organisation must ensure that they provide the workers with the correct equipment, failure to do so ~~would~~ could lead to 2 years in prison. If he doesn't follow this it could lead to RSI (repetitive strain injury), eye and back problems. He can ensure that he provides the correct equipment to the workers for example the correct desk and chair that ensures that the ~~the~~ user's eye is aligned with the computer screen. Also a firm chair that keeps the users back straight.

Question 2

The scenario for Question 2 was based on a college with several computer rooms linked to a LAN and remote access via a VPN.

Q2(a)

This was another points-based question and responses achieved higher marks than most others on the paper. The focus was on the advantages of using biometrics to gain access to a server room.

Many learners failed to pick up the identification marks which were the uniqueness of a finger print and the need for a physical presence. However they were able in this case to gain marks from expansion marks such as lost, stolen or damaged cards.

Learners should understand that where two marks are available for a response in an 'explain' question, there will always be one mark for an identification and one for an expansion.

The following response gained two marks for part 1, the identification mark 'their finger is always attached to them' and the expansion mark 'no need to carry an ID card'. In the second part, two expansion marks could be seen, however only two expansion marks are available in total for the question. Three marks were achieved in total.

Explain **two** advantages of introducing a biometric access system rather than an ID card system.

(4) Q02a

1 one advantage of introducing biometric access is that the id card holder doesn't need to carry the card with them at all times. Their finger is always attached to them and they can't lose it like an ID card can. Meaning as long as they have their finger and the print is registered, they can ^{enter}.

2 Another advantage is that it limits unauthorised access. only authorised people will have their fingerprint uploaded to the system, so it limits unauthorised people who may have found an ID card and used it to gain entry. With an ID card, if it is lost or stolen, anyone holding it can gain access.

Q2(b)

The focus of this part of the question was the impact of user accounts on different user groups of the college system. The groups; IT technicians, administrative staff, teacher staff and students were identified in the scenario at the beginning of the question and the fact that the IT technician sets up user accounts was given in the stem. Learners should ensure that they read the information given and then use this as the cornerstone of their responses. This was another level-based question.

Unfortunately, many responses did not use the information and gained low marks. Where they did use the information, responses general identified the hierarchy of user accounts, particularly in respect of accessing data. Only a minority took this any further by mentioning different types of file access rights. There was also little reference to applications or hardware, although restriction to internet access was often cited. The responses achieving higher marks were able to build upon the IT Technician's role, but generally only in a limited fashion.

The following response gained marks in the middle band and was one of the better responses seen.

The response discussed the access by both staff and students and some of the impact of this. The role of 'Administrative Staff' is briefly discussed and they have taken this as the administrators of the network which, whilst not intended in the wording of the question, was acceptable. There is identification of files and also software.

Discuss how user accounts impact on different user groups of the system.

(8) Q02b

The IT technicians may wish to restrict profiles on student accounts to prevent them from being able to hack/cause disruption to the network. However, this may prevent students from being able to run specialist software they need for their studies.

Teacher/Staff accounts may be given higher levels of access to features, as staff are more likely to be trusted, and pose a lower risk to the network than students. This also enables teachers to run and install programs to use in their teaching.

Finally, Administrators will be given user accounts with the highest levels of access, as this enables them to run and control the network and ensure it is performing as designed. Admin accounts are only given to trusted and authorised users on the network.

It is important each ~~user~~ account is only accessible by the intended person.

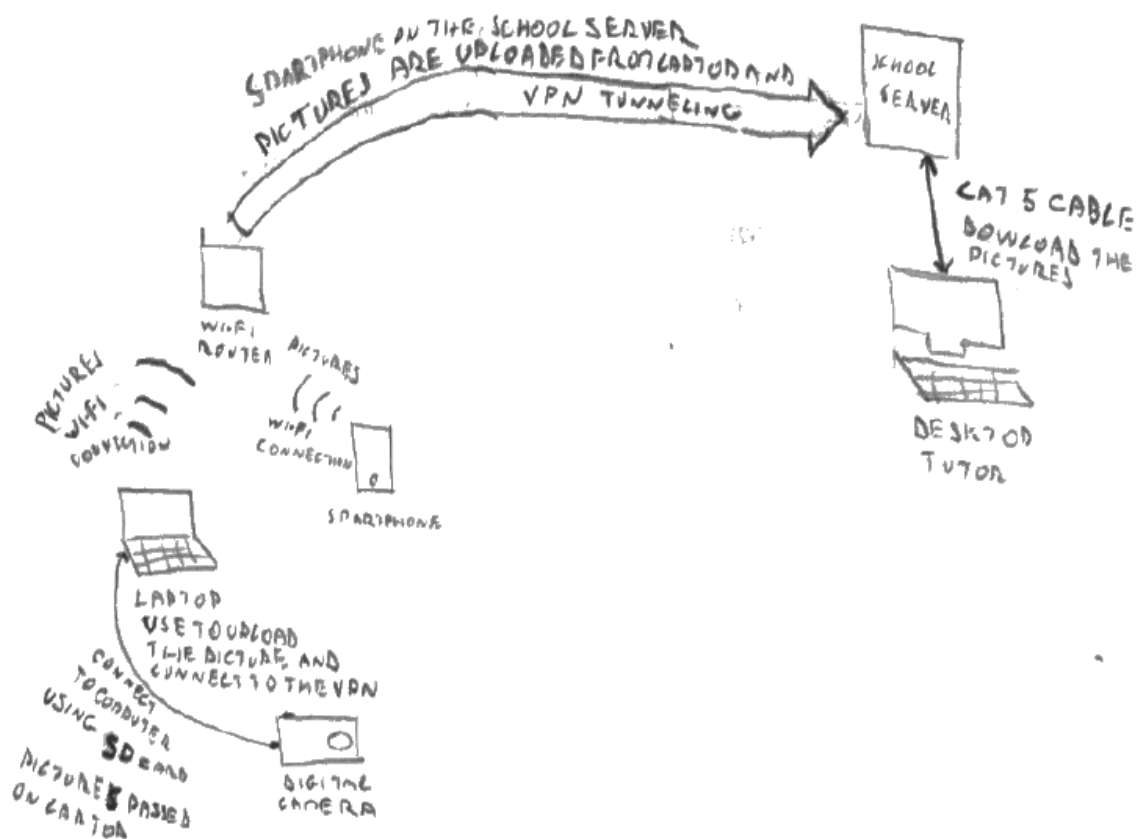
Q2(c)

In this question learners were required to draw a diagram to show the integration of systems that could be used in the process of a student submitting a digital photography assignment to his tutor. A levels based approach was used to assess this question.

The diagrams took many forms, which was accepted as long as the structure showed some logic and could be followed. Annotations also took many forms; again this was acceptable as long as they were clearly used to clarify connections between devices, connection types, the flow of data through the system and the data to be passed through the system.

Unfortunately, many of the diagrams were restricted to the system used by the student within his home. There was little or no description of the connection to the college system or the systems used by the tutor at the college. The diagrams in general showed little logic and were very difficult to understand.

The diagram shown below was typical of a response that achieved marks within the level 2 mark band, showing some logic with annotation that helps clarify data flow and connections. However, there are some 'gaps' in the system and little information shown about the college and/or tutor systems. There are also some dubious features such as uploading photos via a smartphone, which is unlikely when submitting an assignment.



Question 3

The scenario for Question 3 was based on a leisure centre, where the manager was hoping to make some improvements by improving facilities for young people and introducing a class booking system.

Q3(a)

A levels-based approach was used to assess this question in which learners were asked to discuss the implications of collecting information about improved services for young people via an online survey rather than face to face.

Very few learners used the scenario when answering this part of the question; answers were generic and in the main concentrated on:

- being able to collect information from a wide area, which was not relevant as the survey was about a local leisure centre
- the statement that online surveys do not provide accurate responses. There were a wide variety of reasons given for this, many of which were inaccurate, many focusing on anonymity.

There were a minority of responses that correctly identified the benefits of online surveys in analysing data and others that identified the benefits of not needing to travel.

Only a small minority made any mention of young people and their familiarity with technology and/or access to it. Learners must use the scenario if they are to achieve marks in the higher level bands.

The following response gained lower level mark band marks for a very limited discussion of time saving and generic communication. A total of 2 marks were achieved.

Discuss the implications of collecting this information online rather than via face-to-face meetings.

(6) Q03a

One benefit of collecting information online is that it is less time consuming for Joseph. Also, the data collection is more automated for her than Joseph having to note down what is said in meetings. However, face to face meetings would give Joseph a better understanding of opinions as it is vocal communication rather than text on a screen. Also, face to face, he would receive an immediate response instead of waiting for results from a survey.

Q3(b)(i)

The question asked learners to explain three different error reduction methods that could be used when creating the interface for the online survey discussed in Q3a.

This question was marked using a points-based mark scheme and, as before, there was one mark for a correctly identified point and an additional mark for a correct expansion. The fields to be used in the interface were given in the question.

Some learners did refer to the fields and when they did this they generally gained more marks than those that gave generic responses. For example, a response such as 'Use a drop down list for gender' would gain the identification mark, whereas a response such as 'Use drop down lists' would not gain the mark.

The expansion marks also need to be carefully considered, 'Use a drop down list for gender, to reduce typing errors' would not gain the expansion mark as 'error reduction' was given in the question. 'Use a drop down list for gender, to ensure that only pre-set values can be entered' would gain both marks as the expansion shows how the method would reduce errors.

The following response gained 4 marks.

Explain **three** different error reduction methods Joseph can use when collecting this information.

(6) Q03bi

- 1 Joseph could use a range check on his survey. This ensures that numerical data is between a specific range. He could add this validation to the telephone number to ensure each digit is between 0-9.
- 2 Another is length check. This ensures that data entered does not exceed a certain number of characters. This could be added to the telephone number to ensure it is the correct length.
- 3 A third is format check. This ensures data is entered into a set format. It could be added to postcode e.g. LLN/ALL.

Q3(b)(ii)

Learners were asked to discuss the factors to consider when setting up the interface given in Q3bi.

The mark scheme for this question was levels-based; however, very few responses were able to access anything other than the lowest mark band.

The main factors identified in the indicative content were ease of use, accessibility, functionality, performance and compatibility. Learners were not expected to cover all factors and may indeed have focused on only one or two, if these were discussed in depth access to higher level marks was possible.

Whilst many responses identified one or two of the main factors, they did not discuss them in any depth, showing only a superficial understanding of the scenario and restricting their marks achieved to the lower mark band.

In other instances, responses were generic with no attempt made to link the factors identified to the scenario, again restricting marks to the lower mark bands.

The response below achieved 3 marks in the level 2 mark band. The response discussed two relevant factors in some depth (intuitiveness and accessibility) showing some logical chains of reasoning. The first point, validity is not relevant in this context and can be ignored.

(6) Q03t

He must make sure that the data insert is valid, inserting a space where the user can re-insert important data such as the telephone number.

Secondly he must make sure that the form is intuitive so that the client of the leisure centre doesn't make mistakes and can easily understand where to write and what type of information write.

Lastly, he should consider some feature which might help people with disabilities to use the form such a feature that allow the user to zoom in or to increase the font or a feature with allow the user to dictate to the computer what to write.

Q3(c)

In this part of Question 3 learners were asked to discuss the factors that the manager of the leisure centre should consider when setting up an online system for class bookings.

The mark scheme for this question was levels-based with eight marks available. Unfortunately very few learners were able to access anything other than the lowest mark band.

Responses to this question were similar marks gained to Q3bii. The indicative content was comprehensive giving learners a wide range of factors that could be included. However, identifying, rather than discussing, factors again restricted marks achieved to the lower mark band. In this instance, many learners did attempt to link responses to the scenario.

Popular factors correctly identified included costs, usually development costs and training, security and implementation timescales. Had the learners discussed rather than identified these factors marks would have been significantly higher.

The responses often incorrectly focused on the needs of the actual booking system e.g. ensuring classes could not be over booked, or teachers only being linked to their own classes.

The following response gained 3 marks at the lower end of the middle mark band. There is some discussion of cost, time, performance and security although all are very limited.

Discuss the factors that Joseph needs to consider when creating the online system.

(8) Q03c

When he makes the system he needs to make sure everything he's doing is private as we won't want to lose the system, so security is very important. Needs to think about how well the system ~~is~~ will actually do when released to the public. He must look at the time it's going to take to make and the cost it would be to make the system himself or hire people to make it for him. Doing it himself won't cost as much, but ~~could~~ ^{would} take longer while hiring programmers would cost more, but won't take as long. He also needs to make sure it stands out more than other ~~country~~ companies as there could be competition and he needs to make sure he's attracting more ^{customers} ~~customers~~. However, he needs to know that he's not doing the same thing as someone else, so making the system a ~~little~~ little more fancy ~~could~~ bring more ~~user~~ users in.

Question 4

The scenario for the final questions on the paper related to an interior design company with offices around the country. There is a Local Area Network with files manually backed up on magnetic tape. The company is considering moving to a cloud-based storage system.

Q4(a)

In this question learners were asked to analyse the impact of moving to a cloud-based storage system.

A levels-based mark scheme was used for this question with ten marks available. The overall marks achieved were slightly higher than on the other levels based questions on the paper.

As in previous questions, a lack of depth in responses limited gaining marks. Many responses included inaccuracies which demonstrated a lack of understanding. The cost of backing-up on magnetic tape, rather than backing up on a cloud-based system produced many interesting, although inaccurate responses. Similarly, many learners cited the strain on the current network system as a possible disadvantage.

Responses were often vague with a great deal of superfluous content included. However, when marking examiners are able to ignore this and assess only on valid content.

Responses that achieved high marks generally considered:

- the ability to scale up and down the storage capacity to meet the companies needs
- security of data. In a small minority of responses this was developed to identify customer data in particular and the implications of tis including the Data Protection Act
- implications on security of introducing a third party to manage data
- the ability of staff to access the files in remote, out of office situations
- the need for internet connection
- ability to share data with colleagues

The following response gained 8 marks at the top of the middle mark band. The learner discussed a range of relevant issues, using logical chains of reasoning. Technical language is used accurately to support the arguments but not all of the arguments are relevant. The learner has, in the main, linked arguments to the scenario.

(a) The company is considering a move to using a cloud-based storage system.

Analyse the impact of moving to a cloud-based storage system on IDC and its staff.

(10)

Q04a

The cost would generally be quite high for needing to store as large of an amount of data as the company would have. If the company does not have a reliable internet connection they may not be able to access their files all the time as an internet connection is required. Even if they can connect to the cloud server a fast data connection would be required as uploading and downloading would be slow with large files which is most likely the case as a interior design company would tend to have large, high quality photos and maybe even 3d models files which have very high file sizes. Some benefits of ~~the~~ cloud storage would be that the company

would be able to access their data
anywhere with an internet connection
this negates the need for external
hard drives that would have to be
constantly updated with current versions.
This would be ~~so~~ useful for
meetings or showing potential clients.
They would no longer require a main
server on site with a wired connection
so adding branches or more computers
would be much easier. As it is a
different storage system they would
likely need to re-evaluate their
backup procedure resulting in potential
downtime however it may also make
backing up files easier.

Q4(b)

Using the same scenario as Q4a learners were in this instance asked to evaluate the company's decision to allow employees access to the company network using personal mobile devices.

A levels-based mark scheme was used for this question with twelve marks available..

As in previous questions, learners generally produced unstructured responses which did not show logical chains of reasoning, lacked depth, included inaccuracies and did not relate to the scenario.

Where correct content was identified, it did in general give both benefits and disadvantages of the change to staff and the company.

The main factors considered included:

- ability of staff to go to customer's homes and show designs
- increased flexibility in working practices
- risks of lost and stolen mobile phones, in particular on work related files such as designs for customers
- security of data and wider implications, such as the Data Protection Act
- reliance on staff to secure devices
- staff 'time wasting' during works time, including using social networking sites.

As this was an 'evaluate' question where a conclusion should have been included in order to gain high marks. However, it must be emphasised that this does not need to be a separate paragraph at the end of the response. Marks were given when an evaluative statement was included throughout the response.

This response gained marks at the bottom of the middle mark band. Some technical language has been used to support arguments, although not all are relevant. The learner has considered some relevant issues but no real depth of understanding is shown. An attempt at a conclusion has been made.

Evaluate the company's decision to allow employees access to the company network using personal mobile devices.

· Pur system
· or risk
· malware / virus
· Loss device
(12) Q04b
· by

There are positive impacts that this could have on IDC. One is that it would allow staff to work remotely. They would be able to access the system on their mobile device from home allowing them to complete work more. Also, they could work on projects when travelling to and from work. This would help increase the company's productivity as work would be completed faster. As well, a mobile device would be more convenient when in a meeting with a client. The employees may feel more comfortable as the device is their own and it is more portable or accessible than a desktop device.

However, there are negative implications to this decision. If employees can access their phone whilst in the office then it may distract them from

work. This would have a negative effect on productivity and quality of work. Also, employees may access material which is not appropriate for the work place. This may lead to viruses or malware finding their way onto the system. This would put data at risk of loss or damage. As well, if employees are accessing the system whilst travelling, they could potentially have their device lost or stolen. This could give unwanted access to the system and further risk the data.

To conclude, I believe they should allow employees to use mobile devices in certain circumstances. I believe employees would feel comfortable using them in a meeting with a client. Also, it allows better productivity when travelling. However, the business should block certain sites which aren't appropriate and put anti virus measures in place. (Total for Question 4 = 22 marks)

Summary

Based on their performance on this paper, learners should:

- read the question carefully before attempting a response, in particular identifying:
 - key words e.g. features / factors
 - focus of the question e.g. employer / employee / particular aspect of a scenario
 - information that should be used to help inform/exemplify responses
- link responses to the given scenario, rather than giving generic answers
- use the number of marks awarded as a guide to the depth of detail required in a response. For example, a 4 mark question which asks for 'explain 2 factors', will require 2 identification points and for each 1 correct expansion point
- tailor responses based on the command word in the question. For example 'discuss' requires looking at both possible points/arguments, whereas 'evaluate' will require some form of conclusion
- structure responses, if necessary producing a 'plan' beforehand, to help focus on salient points and avoiding vague answers
- use appropriate technical language throughout

