



# **T Level Technical Qualification in Digital Support Services**

## **Core knowledge and understanding**

# **Paper B**

Mark scheme

v1.1 P002267  
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603/6901/2

This mark scheme has been written by the assessment writer and refined, alongside the relevant questions, by a panel of subject experts through the external assessment writing process and at standardisation meetings.

The purpose of this mark scheme is to give you:

- examples and criteria of the types of response expected from a student
- information on how individual marks are to be awarded
- the allocated assessment objective(s) (AO(s)) and total mark for each question.

## **Marking guidelines**

### ***General guidelines***

You must apply the following marking guidelines to all marking undertaken throughout the marking period. This is to ensure fairness to all students, who must receive the same treatment. You must mark the first student in exactly the same way as you mark the last.

- The mark scheme must be referred to throughout the marking period and applied consistently. Do not change your approach to marking once you have been standardised.
- Reward students positively giving credit for what they have shown, rather than what they might have omitted.
- Utilise the whole mark range and always award full marks when the response merits them.
- Be prepared to award zero marks if the student's response has no creditworthy material.
- Do not credit irrelevant material that does not answer the question, no matter how impressive the response might be.
- When allocating marks across AOs within an individual response, these should logically link and should not be from disparate points of indicative content provided in the mark scheme.
- The marks awarded for each response should be clearly and legibly recorded in the grid on the front of the question paper.
- If you are in any doubt about the application of the mark scheme, you must consult with your team leader or the chief examiner.

### ***Guidelines for using extended response marking grids***

Extended response marking grids have been designed to assess students' work holistically. They consist of band-based descriptors and indicative content.

Band-based descriptors: Each level is made up of several descriptors across the AO range (AO1 to AO3) which, when combined, provide the quality of response that a student needs to demonstrate. Each band-based descriptor is worth varying marks.

The grids are broken down into bands, with each level having an associated descriptor indicating the performance at that band. You should determine the level before determining the mark.

Indicative content reflects content-related points that a student may make but is not an exhaustive list, nor is it a model answer. Students may make all, some or none of the points included in the indicative content as its purpose is as a guide for the relevance and expectation of the responses. Students must be credited for any other appropriate response.

## ***Application of extended response marking grids***

When determining a level, you should use a bottom up approach. If the response meets all the descriptors in the lowest band, you should move to the next one, and so on, until the response matches the level descriptor. Remember to look at the overall quality of the response and reward students positively, rather than focussing on small omissions. If the response covers aspects at different bands, you should use a best-fit approach at this stage and use the available marks within the level to credit the response appropriately.

When determining a mark, your decision should be based on the quality of the response in relation to the descriptors. You must also consider the relative weightings of the AOs so as not to over / under credit a response. Standardisation materials, marked by the chief examiner, will help you with determining a mark. You will be able to use exemplar student responses to compare to live responses, to decide if it is the same, better or worse.

You are reminded that the indicative content provided under the marking grid is there as a guide, and therefore you must credit other suitable responses a student may produce. It is not a requirement either that students must cover all the indicative content to be awarded full marks.

## **Assessment objectives (AOs)**

This assessment requires students to:

- AO1: Demonstrate knowledge and understanding of the digital support services sector
- AO2: Apply knowledge and understanding of the digital support services sector to different situations and contexts
- AO3: Analyse and evaluate information and issues related to the digital support services sector

The weightings of each AO can be found in the Qualification Specification.

**Section A: Digital Support Services pathway**

**Total for this section: 25 marks**

**1 Which one of the following describes any activity requiring the use of force by a person to lift, lower, push, pull or carry a person or an object?**

- A. Customer service
- B. Manual handling
- C. Project management
- D. Working at height

[1 mark]

**AO1 = 1 mark**

Award **one** (AO1) mark for identifying the correct answer:

**B. Manual handling.**

**Do not accept any other responses.**

**2 Mia has seen a job vacancy for a service desk technician. The role requires providing 1st line digital support to customers via phone, email and live chat.**

**a) Identify two key skills that would be included in the job description.**

[2 marks]

**b) Explain why one of the identified key skills would be required for the service desk technician role.**

[2 marks]

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark, up to a maximum of **two** (AO1) marks.

Skills may include, but are not limited to:

- analytical thinking and problem-solving skills (1)
- active listening skills (1).

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point of why the identified skill would be required for the service desk technician role, up to a maximum of **two** (AO2) marks:

- Analytical thinking and problem-solving skills would be required to help when investigating a customer problem, such as hardware or software faults, to understand the issue (1). The technician would then apply their problem-solving skills to provide a solution to the end user (1).
- Active listening skills would be required when talking to a customer over the phone to fully understand the issue they are having (1); this will help to identify if first line support is required / can be provided to solve the customer's problem (1).

**Accept all other suitable responses.**

**3 Oceanside Pass is a travel and tourism platform as a service (PaaS).**

**Oceanside Pass has a knowledge base to help it reduce their customer support emails and calls by 30%.**

**Explain one way updating and maintaining a knowledge base will help Oceanside Pass achieve its goal of reducing customer support emails and calls by 30%.**

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark, up to a maximum of **two** marks:

- Updating and maintaining a knowledge base can help Oceanside Pass achieve its goal as it will be a place where they can continually publish frequently asked questions (1) that their customers can access to see if their question has been previously answered, reducing the number of customer support emails (1).
- Updating and maintaining a knowledge base can help Oceanside Pass achieve its goal as this provides a self-serve method giving customers an immediate up-to-date answer to their question (1). This will save customers time by not having to contact support and wait for an answer (1).

**Accept all other suitable responses.**

**4 Officeel provide virtual office solutions to remote business owners. They are looking to expand their services and are keen to hear their customers' feedback and ideas.**

**To help gather this information, Officeel have asked their customers to complete a survey which uses an open questioning method.**

**a) Identify two types of communication formats Officeel can use to share their survey results.**

[2 marks]

**b) Explain one reason why open questioning can benefit Officeel when surveying their customers.**

[2 marks]

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each correctly identified communication format in relation to sharing the survey results, up to a maximum of **two** (AO1) marks:

- telecommunication (1)
- email (1)
- face-to-face conversation (1)
- presentations (1).

b) Award **one** (AO2) mark for each explanation point of why open questioning can benefit Officeel when surveying customers, up to a maximum of **two** (AO2) marks:

- If Officeel use open questioning in their survey, it will mean customers have an opportunity to share more information, beyond a yes or no to the question (1). This will provide Officeel with more insight about their customers' experiences with their current services / products (1).
- By using open questioning in the customer survey, Officeel are encouraging customers to provide detailed feedback on current services / share ideas on services which they would find useful (1), the insights from which can then be used to develop / improve their services to further support their remote business owners (1).

**Accept all other suitable responses.**

**5 A telecommunications company has scheduled some essential maintenance and there will be interruption to the service it provides.**

**The company needs to communicate this information to their customers.**

**Explain one reason why the communication format must be considered by the telecommunications company when communicating with their customers.**

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark for a correct explanation point of why the communication format must be considered by the telecommunications company, up to a maximum of **two** marks:

- The telecommunications company's customers may be technical or non-technical so the message they want to communicate needs to be formatted clearly, concisely and so it is easy to understand (1). This will ensure the content is accessible to / understood by everyone receiving it (1).
- Determining how best to communicate to customers is an important audience requirement for the telecommunications company to consider and should be based on information such as demographics and their feedback (1). This can help build and improve relationships as customers will receive the communications in a format they are more likely to read and therefore will be aware of the essential maintenance taking place (1).

**Accept all other suitable responses.**

**6 A customer is in the middle of an important secure booking with a new, high-profile client and their software has frozen. The customer urgently contacts the technical support team who provide remote support.**

**Explain one benefit of remote technical support being offered to the customer.**

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark for each explanation point of a benefit of remote technical support offered, up to a maximum of **two** marks:

- Remote technical support allows for the technical support team to log, investigate, diagnose and resolve the software freezing issue without the need to be physically present with the customer (1). This means the issue that is being encountered can be resolved quicker and therefore can save time and improve customer satisfaction (1).
- Remote technical support allows for the technical support team to provide on-demand support and in real-time (1). This means that there is a more rapid response time to troubleshoot and resolve the freezing issue which will improve customer satisfaction (1).

**Accept all other suitable responses.**

**7 Jack is the owner of a local bookstore. He received an email telling him he was behind with a tax payment and that he needed to click on a link to update his details. He did attempt this but encountered some problems.**

**When launching the system this morning, Jack encountered some faults and problems. He noticed that the system is running very slow and is unresponsive. He is now worried that his system might have been compromised as he uses this system for all his business operations and customer tracking.**

**a) Identify two fault analysis tools Jack may have used to identify the faults and problems he encountered.**

[2 marks]

**b) Explain one requirement for external reporting of faults and problem resolution that will ensure Jack's compliance with relevant legislation, regulation and external standards.**

[2 marks]

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each correctly identified fault analysis tool Jack may have used, up to a maximum of **two** (AO1) marks.

Fault analysis tools may include, but are not limited to:

- activity / error logs (1) as a record of all interactions and events within network systems
- system alerts (1) to flag when the system condition is outside pre-determined parameters
- live traces (1) to identify any network traffic or activity in real-time
- dashboards (1) as a consolidated visual representation of system condition and performance.

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point for the action Jack must take to comply with relevant legislation, regulations and external standards, up to a maximum of **two** (AO2) marks:

- Jack has a requirement to notify customers and end users to report any faults or problems that relate to failures of components / systems if there is the possibility of a data breach (1), as the system faults have led to significant loss of previous customer data which may include personal details (1).

- Jack should report this data loss to the Information Commissioner's Office (ICO) within 72 hours of becoming aware of it (1), providing details of the impacted areas including any personal data breaches (1).

**Accept all other suitable responses.**

**8 A website hosting a company's service desk receives an incident from a customer reporting that its e-commerce website is failing to load and is unavailable. This is a widespread issue with a financial impact.**

**As part of its incident management process, which follows a structured workflow, the hosting company logs the incident, along with the following information:**

- **incident category: outage**
- **incident prioritisation: severity level red.**

**Assess how prioritising and categorising incidents impacts the website hosting company.**

[3 marks]

**AO3 = 3 marks**

Award **one** (AO3) mark for each assessment point of how prioritising and categorising incidents impacts the website hosting company, up to a maximum of **three** marks:

- Prioritising and categorising incidents will simplify the escalation process for the website hosting company, as there will be a clearly defined workflow for incidents for them to follow (1). Without a defined workflow, both the service desk team and the hosting customers would have nothing to refer to (1). Therefore, prioritising and categorising incidents is beneficial to the website hosting company as it ensures the service desk team focus on the most important issues first and customers will have a resolution quicker (1).
- Prioritising and categorising incidents is beneficial to the website hosting company as it will help with preventing any future outage issues that are categorised as severity level red (1). Performing some root cause analysis and looking at opportunities for improvement will help prevent these types of incidents happening again and affecting customers (1). It will also ensure that the company's service-level agreement (SLA) is adhered to, and levels of continued service will be provided to customers (1).

**Accept all other suitable responses.**

**9 Six Logistics, a transport and logistics company, requires its helpdesk teams to complete customer service training. The teams are responsible for managing all customer service requests within the company.**

**Six Logistics has decided the training will be pre-recorded e-learning in place of in-person training.**

**Assess the impact to Six Logistics and its helpdesk teams of using pre-recorded e-learning modules.**

[3 marks]



### **AO3 = 3 marks**

Award **one** (AO3) mark for each assessment point of an impact to Six Logistics of using pre-recorded e-learning, up to a maximum of **three** marks:

- Using pre-recorded topic-based e-learning for their customer service training means that the Six Logistics' helpdesk team members can do their training from anywhere, using any device and at their own pace (1). Without these positive impacts, the training would not be accessible nor allow for team members to learn about customer service at their own speed (1). Therefore, by using pre-recorded e-learning, Six Logistics is ensuring the training is fully inclusive (1).
- Using pre-recorded e-learning for the helpdesk team's training will have a positive impact, as the content can be created and varied to support all learning styles as not all members of the team will learn the same way (1). If they do not vary the learning resources, it may be seen that Six Logistics has assumed all team members learn the same way and taken a one-size-fits-all approach (1). Therefore, using pre-recorded e-learning for their customer service training will mean that Six Logistics' training will be more engaging, resulting in increased participation and completion levels (1).

**Accept all other suitable responses.**

**Section B: Tools and testing**

**Total for this section: 20 marks**

**10 State two purposes of testing digital components.**

**[2 marks]**

**AO1 = 2 marks**

Award **one** (AO1) mark for each correct purpose of testing digital components, up to a maximum of **two** marks.

Purposes of testing (as per spec):

- functionality (1)
- usability (1)
- compatibility (1)
- accessibility (1)
- customer / client / end user satisfaction (1)
- fault-finding and debugging (1)
- impact assessment (1)
- efficiency of individual components (1)
- reviewing accuracy of data (1)
- ensuring desired outcome (for example, service or product) (1)
- performance monitoring (1).

**Accept all other suitable responses.**

**11 State two reasons for using black box testing.**

**[2 marks]**

**AO1 = 2 marks**

Award **one** (AO1) mark for each reason why black box testing would be used, up to a maximum of **two** marks:

- to test the inputs and outputs against expected results (1)
- to measure the functional requirements of the system / programme (1).

**Accept all other suitable responses.**

<b>12</b>	<p><b>Chloe is project managing the development of a new product. There are several internal and external stakeholders involved in the development of the new product. Chloe needs to keep all stakeholders informed of the development progress and the anticipated delivery timescales.</b></p> <p><b>a) Identify two collaborative communication tools and technologies Chloe can use throughout the product development.</b></p> <p style="text-align: right;">[2 marks]</p> <p><b>b) Explain one project management tool Chloe can use to help her manage the development of the new product.</b></p> <p style="text-align: right;">[2 marks]</p>
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**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each correctly identified collaborative communication tool and technology, up to a maximum of **two** (AO1) marks:

- intranet (1)
- shared workspaces (1)
- shared documents (1)
- mark-up (1)
- video conferencing (1).

**Accept all other suitable responses.**

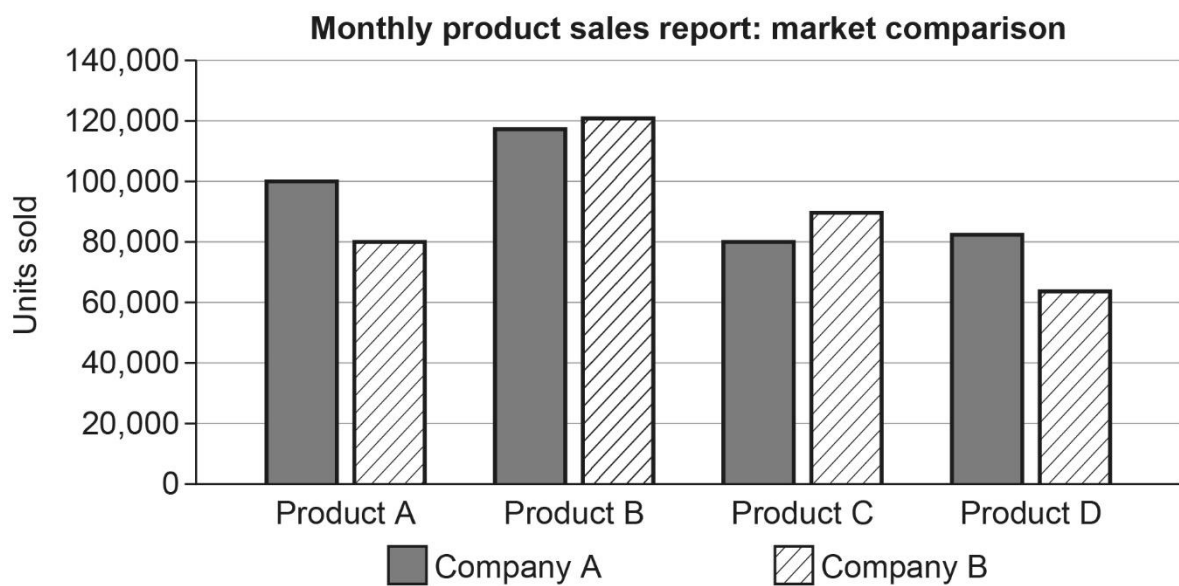
b) Award **one** (AO2) mark for each explanation point of a project management tool Chloe can use to help her manage the new product development, up to a maximum of **two** (AO2) marks:

- Chloe can use a stakeholder power interest matrix to create a visual representation to assess stakeholder priority (1). This will inform how Chloe engages, consults and manages the different stakeholder groups (1).
- Chloe can use Gantt charts to plan / monitor timescales of the development of the new product (1). Gantt charts will also enable Chloe to highlight milestones of the development project to keep stakeholders updated throughout the process (1).

**Accept all other suitable responses.**

13

Figure 1:



The sales manager for Company A presents this month's product sales information and shows a market comparison with Company B.

Describe one way the graph in Figure 1 could be used to present sales figures and market comparisons which would help the sales manager.

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark for each description point of how using the graph can help the sales manager present sales trends and market comparisons, up to a maximum of **two** marks:

- Using the graph in Figure 1 to present sales figures and market comparisons will help the sales manager because it is easy to digest visually and determine the total sales figures for each company (1). This can be done in a timely manner as there is no need to analyse lots of numerical data (1).
- Using the graph in Figure 1 to present sales figures and market comparisons will help the sales manager as the visual format will highlight any patterns (1). Any patterns highlighted can be analysed by the sales manager as these may present opportunities to help boost sales (1).

**Accept all other suitable responses.**

**14 Highway 19 is an application development company that is planning to incorporate penetration testing as part of its technical security assurance process.**

**Explain one reason why it is important that Highway 19 performs penetration testing.**

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark for each explanation point of why it is important that Highway 19 performs penetration testing, up to a maximum of **two** marks:

- As an application development company, Highway 19 should perform penetration testing as it measures application security on both the server and client side (1); this type of testing will expose any risks and provide insights of vulnerabilities or gaps in any of their apps that could be compromised (1).
- Highway 19 should perform penetration testing and share the results, demonstrating to users that the applications being developed have followed security processes and procedures (1); they can also demonstrate that a user's interactions with Highway 19's apps are safe and secure and that their data is protected (1).

**Accept all other suitable responses.**

**15 Oscar is a digital marketing manager for an online personal training website. He is implementing a marketing strategy to help his company achieve its strategic goals. Oscar creates and oversees all the marketing campaigns.**

**Explain one marketing analytics tool that would help Oscar evaluate his marketing campaigns.**

[2 marks]

**AO2 = 2 marks**

Award **one** (AO2) mark for each explanation point of a marketing analytics tool that would help Oscar evaluate his campaigns, up to a maximum of **two** marks:

- Oscar could use search analytics to track and measure website activity and traffic (1). Using this insight, Oscar will be able to see what marketing tools have been engaged with based on what has been searched for and clicked while visiting the online personal training website (1).
- Social media analytics will help Oscar track the performance of his social media marketing campaigns using metrics such as engagement rate, reach and follower growth (1). Evaluating how well a marketing campaign is performing and how many people are seeing the marketing content will help inform Oscar's ongoing improvement and the growth of his campaigns (1).

**Accept all other suitable responses.**

**16 A digital product development company is performing some usability testing on a new app it is launching.**

**The usability testing is specifically focusing on ensuring there are no pain points with the new app.**

**The usability testing will focus on the following areas:**

- **content**
- **navigation**
- **error messages.**

**Assess how usability testing of the new app may affect user satisfaction.**

[3 marks]

**A03 = 3 marks**

Award **one** (A03) mark for each assessment point of how usability testing of the chosen area may affect user satisfaction, up to a maximum of **three** marks:

- Any pain points with too much, non-specific or out-of-date content within the new app can be identified during usability testing (1). This can affect user satisfaction as users may not be able to find the information they are looking for and result in them choosing not to use the app (1). Making sure content is clear, concise and accurate is an important area of the new app to ensure user satisfaction (1).
- Any pain points with navigation within the application can be identified with usability testing (1). This could affect user satisfaction by causing the user frustration when the navigation does not take them to the information they expected, or there is no option to easily get to the information they need (1). Making sure the navigation is clear, accurate and simple to use is important in making the new app usable (1).
- Any pain points with error messages within the new app where they are unhelpful or ineffective can be identified during usability testing (1). This can affect user satisfaction as users can feel disappointed that they are unable to complete a task, such as submitting a form, and there is no help or indication as to why it happened (1). Usability problems with error message could discourage users from using the new app so it is important that these problems are identified as part of the usability testing and resolved to ensure user satisfaction (1).

**Accept all other suitable responses.**

**17 A software sales company has offered a prospective customer a product demo presentation of its supply chain management software called Syna Supply.**

**Its product demos usually take 30 minutes and cover all aspects of Syna Supply.**

**Assess the benefits to the prospective customer of receiving a product demo presentation.**

[3 marks]

**A03 = 3 marks**

Award **one** (AO3) mark for each assessment point of the benefits to the customer of receiving a product demo presentation, up to a maximum of **three** marks:

- A benefit to prospective customers receiving a product demo is that it can help answer any questions they may have about the product (1). A product demo provides the opportunity for prospective customers to have their queries about Syna Supply answered, and any concerns about the functionality alleviated as they will be able to interact with the live system (1). The prospective customers' pre-conceived ideas or misconceptions about the software could have caused these concerns that can then be eased during a product demo (1).
- Product demo presentations of Syna Supply can be of benefit to prospective customers as they can take place remotely using screen sharing tools (1). This means that there is less cost to the customer as they are not having expenses such as travelling to the software sales company's premises (1). Prospective customers will therefore have more of an opportunity to join and participate in product demos as the expense of travel is no longer a barrier (1).

**Accept all other suitable responses.**

**Section C: Security and legislation**

**Total for this section: 37 marks, plus 3 marks for quality of written communication (QWC)**

**18 Which one of the following options below does the abbreviation CIA stand for?**

- A. Communication, Information, Accessibility**
- B. Communication, Internet, Accessibility**
- C. Confidentiality, Integrity, Availability**
- D. Confidentiality, Internal, Availability**

[1 mark]

**AO1 = 1 mark**

Award **one** (AO1) mark for identifying the correct answer:

**C. Confidentiality, Integrity, Availability.**

**Do not accept any other responses.**

**19 Identify two key features of the Computer Misuse Act 1990.**

[2 marks]

**AO1 = 2 marks**

Award **one** (AO2) mark for each correctly identified key feature of the Computer Misuse Act 1990, up to a maximum of **two** marks:

- governs unauthorised access to computer programmes or data (1)
- governs unauthorised access with further criminal intent (1)
- governs unauthorised modification of computer material (1).

**Accept all other suitable responses.**

**20 Isaac is starting a course at college and is setting up his new eLibrary account. Isaac's account password has been highlighted as weak.**

**a) Give two consequences of Isaac having a weak password.**

[2 marks]

**b) Explain one way in which Isaac can strengthen his eLibrary account password to ensure it is more secure.**

[2 marks]

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each given consequence of weak passwords, up to a maximum of **two** marks:

- could be easily guessed and used by someone else (1)
- could be exploited by hackers and data stolen (1)



- could expose other user accounts if it is a shared password (1).

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point of ways Isaac can make his password more secure, up to a maximum of **two** marks:

- Isaac can make his eLibrary account password more secure by making it more complex and less easy to guess (1). Isaac can achieve this by making his password consist of non-common words (1).
- Isaac can make his eLibrary account password more secure by making it more complex by using a combination of lowercase and uppercase letters, special characters and numbers, and making it at least eight characters long (1). This will make it less likely to be guessed by hackers (1).

**Accept all other suitable responses.**

**21 AllNineteen has received new desks and chairs for their team. To comply with the Health and Safety (Display Screen Equipment) Regulations 1992, the company is providing some health and safety training and information for all its display screen equipment users. This includes those users with both fixed workstations in their offices and remote workers.**

**Explain two ways in which non-adherence to the legislation could negatively impact AllNineteen's team members.**

[4 marks]

**AO2 = 4 marks**

Award **one** (AO2) mark for each explanation point of how each non-adherence to legislation could negatively impact AllNineteen's team, up to a maximum of **four** marks:

- AllNineteen must commit to carrying out risk assessments of workstations to reduce any identified risks (1). If they do not adhere to the legislation and assess individual workstations and adjust equipment accordingly, their team members will not be set up to work safely (1).
- AllNineteen must commit to health and safety training to inform the team on correct workstation setups and to reduce any risks of them doing this incorrectly (1). If the company does not adhere to the legislation and provide health and safety training to their team, those individuals with incorrect workstation setups could be impacted, causing them to suffer from musculoskeletal issues (1).
- AllNineteen must commit to complying with the legislation and ensuring regular breaks are taken from display screen equipment work, to prevent the team from experiencing visual fatigue (1). If they do not adhere to the legislation and adequate breaks from screens are not taken, team members can suffer from problems such as blurred vision, tired and sore eyes, and headaches (1).

**Accept all other suitable responses.**

**22** Lily is experiencing some issues with her computer which is preventing her from joining an online debate with her classmates using a browser-based virtual meeting tool. When she tries to join the debate, the browser just keeps opening pop-up windows informing her that she has won a prize.

She installs anti-virus software which detects she has adware on her computer.

**a) State one way that anti-virus software could protect Lily's computer from future attacks.**

[1 mark]

**b) Explain two signs adware has infected Lily's computer, preventing her from joining an online debate.**

[4 marks]

**AO1 = 1 mark**

**AO2 = 4 marks**

a) Award **one** (AO1) mark for a way that anti-virus software could protect from future attacks:

- Anti-virus software could scan Lily's computer and identify anything that is malicious (1).
- Anti-virus software could quarantine anything malicious that is causing damage to Lily's computer (1).

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point of each sign that adware has infected Lily's computer, up to a maximum of **four** marks:

- If Lily's web browser or her computer starts running slower than usual, it may be that this is a sign her computer has been hijacked by adware (1). This is caused by the adware itself as it requires a lot of memory space and will slow down her computer's processor (1).
- If Lily experiences an increased number of advertisements displaying when using her browser, it may be that this is a sign her computer has been hijacked by adware (1). This is caused by the adware injecting multiple pop-up advertisements when she is browsing a website (1).

**Accept all other suitable responses.**

**23** Tanveer is a small accountancy firm with 35 employees. The owner is worried that their digital systems are vulnerable as they lack the security infrastructure needed to protect the data that they store, access and share.

To help Tanveer learn more about the risk mitigation controls to prevent threats to the business's digital systems, they recently gained the National Cyber Security Centre's (NCSC's) Cyber Essentials certification.

**Assess the importance of cyber essentials to Tanveer's business.**

[3 marks]

**AO3 = 3 marks**

Award **one** (AO3) mark for each assessed point of the importance of cyber essentials to Tanveer's business, up to a maximum of **three** marks:

- As Tanveer will be accessing other business's confidential information, Cyber Essentials is important to them as it will help them monitor and update user access control of the business's digital systems (1). By controlling what access users inside and outside of their business have, they will ensure only the access that is needed is granted to them (1). This will ensure potential damage an attacker could make to Tanveer's business is minimised and client information is protected (1).
- Cyber Essentials is important to Tanveer's business as it will help them implement approaches to protect its digital systems from malicious software, which in turn will protect its client information (1). Cyber Essentials will help inform how Tanveer can keep devices secure and up to date, correctly configured, and with active anti-malware software (1). This will help protect the business against malware including computer viruses, worms, spyware, botnet software and ransomware (1).

**Accept all other suitable responses.**

**24 After a recent large-scale merger, an accounting firm has reviewed and updated its compliance policies.**

**To demonstrate its commitment to compliance with industry standards and professional codes of conduct, the firm has aligned all its policies to ensure consistency. Some older policies have been updated to avoid the firm being at risk of non-compliance.**

**Discuss two ways that compliance with industry standards and professional codes of conduct could impact the accountancy firm's reputation.**

**Your response should demonstrate reasoned judgements and conclusions.**

**[6 marks]**

**AO3 = 6 marks**

Award **one** (AO3) mark for each discussion point of the ways compliance with industry standards and professional codes of conduct could impact the accountancy firm's reputation, up to a maximum of **six** marks:

- Compliance with industry standards and professional codes of conduct could have an impact on the accountancy firm by enhancing its reputation as it demonstrates that it is a priority for them (1). If the company does not show they are committed to doing the right thing and to high ethical standards, they will be seen as not taking compliance seriously (1). This will have a negative impact for them, so it is important the firm complies with industry standards and professional codes of conduct to help them build trusting relationships with stakeholders who have shared values (1). In addition, compliance with industry standards and professional codes of conduct will ensure that the accountancy firm is doing what they can to protect their business, employees and customers (1). Adherence will help the accountancy firm reduce risks related to things such as security and employee safety (1) which could prevent legal action being taken against them (1).
- Compliance with industry standards and professional codes of conduct could have an impact on the accountancy firm by enhancing its reputation as it demonstrates they have developed an environment promoting ethical behaviour (1). If they do not show they are

committed to industry standards and professional codes of conduct, they will not be perceived as developing an environment of trust (1). This will have a negative impact for them, so it is important for them to do so, and could result in a bad reputation in the market if they do not (1). In addition, compliance with industry standards and professional codes of conduct will ensure that the accountancy firm is doing what it can to keep itself and its employees from failing to comply with them (1). Adherence will help elevate the firm's core values and behaviours (1) and will help it to reduce financial implication risks associated with violating laws and regulations (1).

**Accept all other suitable responses.**

<b>25</b>	<p><b>An insurance company is changing to remote working. The company holds very sensitive client data. As part of the transition, it is evaluating any security risks associated with remote working.</b></p> <p><b>Evaluate the technical and non-technical threats that exist with remote working that may cause damage to the confidential data that the insurance company stores and processes, considering each of the following:</b></p> <ul style="list-style-type: none"> <li>• <b>types of confidential data that the insurance company stores and processes</b></li> <li>• <b>potential impacts of the technical and non-technical threats that the insurance company may encounter</b></li> <li>• <b>recommendations of tools that the company should implement to keep it safe and secure.</b></li> </ul> <p><b>Your response should demonstrate reasoned judgements and conclusions.</b></p> <p style="text-align: right;">[12 marks, plus 3 marks for QWC]</p>
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**AO1 = 4 marks**

**AO2 = 4 marks**

**AO3 = 4 marks**

Band	Mark	Descriptor
4	10 to 12	<p><b>AO3:</b> Evaluation of digital vulnerability mitigation is <b>comprehensive, effective</b> and <b>relevant</b>, showing <b>detailed</b> understanding and <b>logical</b> and <b>coherent</b> chains of reasoning throughout. The answer demonstrates informed conclusions that are fully supported with rational and balanced judgements.</p> <p><b>AO2:</b> Applied all relevant knowledge of security vulnerabilities and their impacts to the context given and shows a <b>detailed</b> functional understanding of digital security.</p> <p><b>AO1:</b> A <b>wide range</b> of relevant knowledge and understanding of types of confidential company, customer and colleague information, which is <b>accurate</b> and <b>detailed</b>.</p> <p>The answer demonstrates <b>comprehensive</b> breadth and / or depth of understanding.</p>
3	7 to 9	<p><b>AO3:</b> Evaluation of digital vulnerability mitigation is <b>in most parts effective</b> and <b>mostly relevant</b>, with some understanding and</p>

		<p>reasoning. Given conclusions are supported by judgements that consider only that of the <b>relevant</b> arguments.</p> <p><b>AO2:</b> Applied some relevant knowledge of vulnerability, impacts of vulnerabilities and mitigation components to the context and may show some understanding of digital security.</p> <p><b>AO1:</b> Knowledge and understanding of types of confidential company, customer and colleague information which is mostly accurate and relevant.</p> <p>The answer is <b>detailed</b> and shows <b>some</b> breadth and / or depth of understanding, <b>with few</b> inaccuracies and omissions.</p>
2	4 to 6	<p><b>AO3:</b> Evaluation of digital vulnerability mitigation is <b>in some parts effective</b> and of <b>some relevance</b>, with some understanding and reasoning taking the form of <b>generic statements</b> with some development. Given <b>brief</b> conclusions are supported by judgements that consider only the <b>most basic</b> arguments.</p> <p><b>AO2:</b> Applied some but limited knowledge of vulnerability, impacts of vulnerabilities and mitigation components to the context and may show a lack of functional understanding of digital security.</p> <p><b>AO1:</b> Knowledge and understanding of types of confidential company, customer and colleague information show <b>some</b> but <b>limited</b> accuracy, focus and relevance.</p> <p>The answer is <b>basic</b> and shows <b>limited</b> breadth and / or depth of understanding, <b>with</b> inaccuracies and omissions.</p>
1	1 to 3	<p><b>AO3:</b> Evaluation of digital vulnerability mitigation is <b>minimal</b> and <b>very limited</b> in effectiveness and relevance. Given tenuous conclusions are unsupported and show little relevance to the question aims.</p> <p><b>AO2:</b> Applied general knowledge and / or general assertions about vulnerability, impacts of vulnerabilities and mitigation components with little relevance to the context.</p> <p><b>AO1:</b> Knowledge and understanding of types of confidential company, customer and colleague information shows very <b>minimal</b> accuracy, focus and relevance.</p> <p>The answer has <b>isolated</b> points, showing <b>very minimal</b> breadth and / or depth of understanding, with <b>significant</b> inaccuracies and omissions.</p>
	0	No creditworthy material.

### Quality of written communication (QWC) = 3 marks

Mark	Descriptor
3	The answer is clearly expressed and well structured. The rules of grammar are used with effective control of meaning overall. A wide range of appropriate technical terms are used effectively.
2	The answer is generally clearly expressed and sufficiently structured. The rules of grammar are used with general control of meaning overall. A good range of appropriate technical terms are used effectively.
1	The answer lacks some clarity and is generally poorly structured. The rules of grammar are used with some control of meaning and any errors do not significantly hinder the overall meaning. A limited range of appropriate technical terms are used effectively.
0	There is no answer written or none of the material presented is creditworthy. <b>Or</b> The answer does not reach the threshold performance level. The answer is fragmented and unstructured. The errors in grammar severely hinder the overall meaning.

### Indicative content

Examiners are reminded that the indicative content reflects content-related points that a student may make but it is not an exhaustive list, nor is it a model answer. Students may make all, some or none of the points included in the indicative content as its purpose is as a guide for the relevance and expectations of the responses. Students must be credited for any other appropriate responses.

### AO1: Knowledge – a student's response may include consideration of:

Types of confidential data the insurance company stores and processes:

- human resources (salaries, benefits / perks, employment data, medical information)
- commercially sensitive information (sales revenue, trade secrets, profit margins, client / customer details, stakeholder details, contracts, IP (intellectual property), access information (passwords, multi-factor authentication, email accounts, phone numbers, access codes).

Technical and non-technical threats that exist with remote working that may cause damage to the organisation insurance company:

- technical:
  - botnets
  - denial-of-service (DoS)
  - distributed denial-of-service (DDoS)
  - hacking
  - malware
- non-technical:
  - human error
  - malicious employees
  - disguised criminals
  - natural disaster (for example, flooding).

**A02: The student will apply general knowledge of technical and non-technical threats that exist with remote working and the damage this may cause to data being stored and processed by the insurance company**

**And**

**A03: The student will evidence evaluation of the impact of technical and non-technical threats with remote working and the damage this may cause to confidential data being stored and processed by the insurance company, resulting in reasoned judgements and a supported conclusion that may include:**

Technical threats that exist with remote working that may cause damage to the organisation include remote Wi-Fi network configuration, volume of devices and use of personal devices. Using a remote / home Wi-Fi network that is not regularly updated or patched will have security vulnerabilities that can be detected and exploited by cybercriminals with data being intercepted.

Where employees are using their own personal devices, such as laptops and tablets, this can cause a problem for the company as it is not in control of the configuration of these devices and, therefore, they are not optimised for security. Additionally, there is no guarantee personal devices have been patched and / or are operating the most up-to-date software. Should an employee who is using their personal device leave the company, there is a risk customer data is stored and held on their own devices.

This, along with the increased number of locations where company and customer data is being accessed, widens the security risk and increases the number of potential targets for data breaches, identity theft and other cybercrime activities.

Non-technical threats that exist with remote working that may cause damage to the organisation include human error, sharing devices and lack of security awareness and training relating to security policies and procedures for working remotely. Human errors and misjudgements can enable cybercrime such as phishing emails.

Approved tools for file sharing and storage and video conferencing should be considered by those who are working remotely, along with strengthening security with firewalls, use of VPN, strong passwords and password management, centralised access management, anti-virus software and multi-factor authentication.

**Section D: Data and digital analysis**

**Total for this section: 43 marks, plus  
3 marks for QWC**

<b>26</b>	<b>Identify two business resource considerations for data entry and maintenance.</b>	<b>[2 marks]</b>
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**AO1 = 2 marks**

Award **one** (AO1) mark for each identified business resource consideration for data entry and maintenance, up to a maximum of **two** marks:

- hardware (1)
- software (1)
- storage (1).

**Accept all other suitable responses.**

<b>27</b>	<b>A company has a large volume of inactive subscribers in its mailing list.</b>	
	<b>The company has conducted competitor research and analysis and now has a range of competitor data available to help it re-engage with its inactive subscribers.</b>	
	<b>a) Identify two other sources of external data that may support the company's research and analysis.</b>	<b>[2 marks]</b>
	<b>b) Explain one benefit to the company of using competitor data.</b>	<b>[2 marks]</b>

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each correct identification of a source of external data, up to a maximum of **two** marks:

- public data (1) such as open data repositories
- government data (1) (for example, data.gov.uk)
- supplier data (1)
- sector / industry data (1)
- market research (1).

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point of a benefit of using competitor data to the company, up to a maximum of **two** marks:

- Using competitor data, such as customer reviews, benefits the company by gaining an understanding of the customers' perception / sentiment of their products / services (1). This might help them to understand more about their inactive subscribers and what products or services that they offer may be of interest to them (1).



- Using competitor data, such as advertisements, benefits the company as they will gain insights into what is working and not working in their target market (1). This might help them to shape their own advertising strategy, improving on what their competitors are offering, which could be more appealing to their inactive subscribers and encourage re-engagement (1).

**Accept all other suitable responses.**

<b>28</b>	<p><b>A media producer has a large volume of unstructured media files such as audio, image and video that they want to store. They regularly create new media files. The media producer also regularly searches for recordings using the date when the files were created.</b></p> <p><b>a) Identify two cloud storage options that could be used by the media producer for their unstructured media files.</b></p> <p style="text-align: right;">[2 marks]</p> <p><b>b) Explain two impacts to the media producer of using cloud storage.</b></p> <p style="text-align: right;">[4 marks]</p>
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**AO1 = 2 marks**

**AO2 = 4 marks**

a) Award **one** (AO1) mark for each identified cloud storage option, up to a maximum of **two** marks:

- object storage (1)
- elastic cloud / scalable storage (1)
- cloud-based database services (1).

b) Award **one** (AO2) mark for each explanation point of the impact of cloud storage to the media producer, up to a maximum of **four** marks.

For example:

- Cloud storage will offer scalability to the media producer, meaning that space is always available and can be scaled up or scaled down depending on their need (1). This will be beneficial for the media producer as they regularly create new files that will need storing and therefore the amount of storage they require varies (1).
- Cloud storage eliminates the expense of the media producer purchasing hardware in order to scale, as the volume of their media files increases (1). This will be beneficial to them as additional hard drive storage will not be required, and therefore this is a more cost-effective storage option (1).
- Cloud storage that service providers offer will have a service-level agreement (SLA) in place to ensure a continued service is provided to the media producer (1). This means that the media producer will have a high uptime guarantee (for example, 99.9%) (1).

**Accept all other suitable responses.**

**29 Gallery Bee is an independent contemporary art and design gallery. It is creating a digital archive to capture, store and make its collections available online.**

**The gallery is exploring how to model its collections' data in a logical structure that will support its digitisation project.**

**a) State two data models that can be used by Gallery Bee to logically structure its collections' data.**

[2 marks]

**b) Explain how one of the stated data models can be used to represent a logical structure for Gallery Bee's digital archive of its collections.**

[2 marks]

**AO1 = 2 marks**

**AO2 = 2 marks**

a) Award **one** (AO1) mark for each correctly stated data model that can be used by Gallery Bee to logically structure its collections' data, up to a maximum of **two** marks:

- hierarchical database model (1)
- entity relationship model (1)
- network model (1).

**Accept all other suitable responses.**

b) Award **one** (AO2) mark for each explanation point of how the data models can be used to represent a logical structure for the digital archive of Gallery Bee's collections, up to a maximum of **two** marks.

For example:

- The gallery could use a hierarchical database model to represent and visualise its collections' data in a tree-like structure with a root and a parent-child relationship (1); this would allow the gallery to organise / store related files / collections in folders and sub-folders for organised storage / easier retrieval (1).
- Gallery Bee could use an entity relationship model to show data organised and accessed through use of relationships (1); the gallery could use this to represent and visualise relationships between different elements such as the different artists and the different artwork they have created (1).

**Accept all other suitable responses.**

**30 A large distribution warehouse is designing and implementing an automated fire detection system.**

**The fire detection system comprises smoke detectors and cameras that will automatically detect fire in real-time. In the event a fire is detected, the system will raise an alarm by notifying the relevant fire safety personnel.**

**Explain two tools for problem solving and algorithm design that could be used by the distribution warehouse when designing and implementing the automated fire detection system.**

### **AO2 = 4 marks**

Award **one** (AO2) mark for each explanation point of each tool for problem solving and algorithm design that could be used by the distribution warehouse, up to a maximum of **four** marks:

- The distribution warehouse could use pseudo code when designing the algorithm for its fire detection system, as it is a simple, plain English outline of the programming code that represents the fire detection system in step-by-step thinking of the algorithm that notifies the fire safety personnel (1). This will enable the problem to be easily communicated, and the solution described and then transcribed using a programming language (1).
- The distribution warehouse could use a flowchart when designing the algorithm for its fire detection system, as it would provide a graphical or visual representation of the algorithm automatically detecting fire (1). In addition, flowcharts use a set of standard symbols which would enable the distribution warehouse to show the flow of algorithms used in the fire detection system, making it easy to read and understand (1).
- The distribution warehouse could use a decomposition diagram when designing the algorithm for its fire detection system, as this provides a method of breaking down the process the algorithm is being designed for into smaller, more manageable sub-processes (1). This would enable the complex system of the smoke detectors and cameras to be divided up and the sub-processes analysed in detail (1).

**Accept all other suitable responses.**

**31 A local hospital is improving the efficiency and security of its staff only car park.**

**Only vehicles registered to members of the hospital staff can enter, park and leave the staff car park.**

**The hospital has installed barrier access which is controlled by an automatic number plate recognition (ANPR) system with cameras placed at the car park's entrance and exit points to ensure car park rules are enforced 24/7.**

**Assess how the action of pattern recognition will ensure the enforcement of car park rules, in relation to the ANPR system the hospital's staff only car park has installed.**

[3 marks]

### **AO3 = 3 marks**

Award **one** (AO3) mark for each assessment point of how the action of pattern recognition can ensure enforcement of car park rules, up to a maximum of **three** marks:

- Pattern recognition would be used in the hospital car park to capture the details of vehicles and recognise and identify the individual characters on the car number plates (1). This will enable the staff car park to only allow entry and exit to those car number plates that are matched to a car number plate that is registered to a member of staff at the hospital (1). This would restrict all other non-staff vehicles from entering and exiting the car park as their vehicle details would not be recognised by the number plate recognition system (1).

- Pattern recognition would be used in the hospital car park to capture the details of a vehicle's entry and exit (1). This will enable the staff only car park to validate car number plates have a valid car parking permit for their working hours (1). This would prevent any vehicles attempting to park outside of their regular hours from entering or charge appropriate parking fees for those trying to exit beyond the hours their permit is valid for (1).

**Accept all other suitable responses.**

<b>32</b>	<p><b>Sebastian is teaching an online course and his learners have been working on a research assignment.</b></p> <p><b>Learners were asked to submit their assignments using the e-learning platform. The deadline for all learners was yesterday at 11.59 pm.</b></p> <p><b>One learner has tried to submit their assessment after the deadline at 2.35 pm today, and they receive an error message which states:</b></p> <p><b>'You are unable to submit your assignment because your assignment deadline has passed.'</b></p> <p><b>Evaluate the problem the learner is encountering in relation to the computational thinking processes that have been applied to the e-learning platform.</b></p> <p style="text-align: right;"><b>[4 marks]</b></p>
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**AO3 = 4 marks**

Award **one** (AO3) mark for each analysis point of the computational thinking processes applied to the e-learning platform, up to a maximum of **four** marks:

- The computational thinking process of the e-learning platform is applying the programming element of selection, as the ability for learners to submit their research assignments is conditional (1). Selection is decision routing the learners accessing the e-learning platform and is reacting to situations and therefore the ability for learners to submit their assignments is based on the specified deadline (1). Those learners who accessed the e-learning platform before 11.59 pm yesterday were able to submit their assignment, so the deadline conditions had been met (1). The learner who accessed the e-learning platform today at 2.35 pm was unable to submit their assignment as the deadline conditions were not met, resulting in the learner receiving the error message and not being able to submit their research assignment (1).
- The computational thinking process of the e-learning platform is applying abstraction, as it has provided a simple and clear way for learners to submit their assignments (1). Abstraction hides all the specific detail, code and functions that are being performed by the e-learning platform so that learners only see and interact with those elements of the system that are relevant to them (1). Those learners who accessed the e-learning platform before 11.59 pm yesterday were not exposed to the complexities of the system that enabled the file submissions (1). The learner who accessed the e-learning platform today at 2.25 pm and was unable to submit their assignment did not see any information that was irrelevant to them, as the error message accurately and efficiently described the problem with their submission (1).

**Accept all other suitable responses.**

33

Figure 2

**Step 1 of 2**  
Email Account Settings  
User information  
Your Name:   
Email Address:   
Login information  
User Name:   
Password:   
 Remember password

**Step 2 of 2**  
Test account settings  
We recommend that you test your account settings to ensure that the email account details you have entered are correct.

**Ayesha is setting up her own business selling handmade personalised tote bags. She is going to sell her products through a global online marketplace.**

**She is trying to set up her business email account.**

**Assess the characteristics an algorithm possesses that Ayesha is interacting with to complete the task of setting up her business email account.**

[4 marks]

**AO3 = 4 marks**

Award **one** (AO3) mark for each assessment point of a characteristic an algorithm possesses that Ayesha is interacting with to complete the task, up to a maximum of **four** marks:

- The input and output characteristics of an algorithm are presented to Ayesha on the setup form, using clearly defined form field inputs, and the intended result (1). It is clearly stated what type of, and how much, data is required to complete the email setup process (1). By inputting the expected data, Ayesha will successfully set up her business email account (1); however, without this data, the process to complete the task would not be possible (1).
- The finiteness characteristic of an algorithm is being presented to Ayesha as there is a defined number of steps to complete the email setup process (1). The form is demonstrating the unambiguous characteristic as the email setup form is clear and straightforward to follow (1). Without this, there may be some confusion for Ayesha, creating difficulty for her to complete the form (1). The logical sequencing of setup steps on the form will ensure Ayesha follows the specific order of setup instructions and successfully completes the process, resulting in a functioning business email account (1).

**Accept all other suitable responses.**

**34** An internet provider has a broadband product that is available to UK customers only.

The company is performing some outbound telemarketing, initiating a call to potential customers introducing them to the new product.

The list of potential customers consists of individuals who completed an online form, registering their interest by submitting their contact information.

The company has discovered errors in the data of some entries.

Discuss which of the following should be considered by the internet provider:

- causes of the data entry errors
- potential impacts of data entry errors
- validation considerations to reduce the risk of data entry errors.

Your response should demonstrate reasoned judgements and conclusions.

[12 marks, plus 3 marks for QWC]

AO1 = 4 marks  
 AO2 = 4 marks  
 AO3 = 4 marks

Band	Mark	Descriptor
4	10 to 12	<p><b>AO3:</b> Discussion of validation considerations to reduce the risk of data entry errors is <b>comprehensive, effective</b> and <b>relevant</b>, showing <b>detailed</b> understanding and <b>logical</b> and <b>coherent</b> chains of reasoning throughout. The answer demonstrates informed conclusions that are fully supported with rational and balanced judgements.</p> <p><b>AO2:</b> Applied all relevant knowledge of potential impacts of data entry errors to the context and showed a <b>detailed</b> functional understanding of validation.</p> <p><b>AO1:</b> A <b>wide range</b> of relevant knowledge and understanding of causes of data entry errors, which is <b>accurate</b> and <b>detailed</b>. A <b>wide range</b> of <b>appropriate</b> technical terms are used.</p> <p>The answer demonstrates <b>comprehensive</b> breadth and / or depth of understanding.</p>
3	7 to 9	<p><b>AO3:</b> Discussion of validation considerations to reduce the risk of data entry errors is <b>in most parts effective</b> and <b>mostly relevant</b>, showing <b>mostly logical and coherent</b> chains of reasoning. Given conclusions are supported by judgements that consider most of the relevant arguments.</p> <p><b>AO2:</b> Applied mostly relevant knowledge of potential impacts of data entry errors to the context, showing <b>some</b> functional understanding of validation.</p>

		<p><b>AO1:</b> Knowledge and understanding of causes of data entry errors <b>is in most parts clear and mostly accurate</b>, although on occasion <b>may lose focus</b>.</p> <p>The answer demonstrates <b>reasonable</b> breadth and / or depth of understanding, with <b>occasional</b> inaccuracies and / or omissions.</p>
2	4 to 6	<p><b>AO3:</b> Discussion of validation considerations to reduce the risk of data entry errors is <b>in some parts effective</b> and of <b>some relevance</b>, with some understanding and reasoning taking the form of <b>generic statements</b> with some development. Given brief conclusions are supported by judgements that consider only the most basic arguments.</p> <p><b>AO2:</b> Applied some but <b>limited</b> knowledge of potential impacts of data entry errors to the context and may show a lack of functional understanding of validation.</p> <p><b>AO1:</b> Knowledge and understanding of causes of data entry errors shows <b>some</b> but <b>limited</b> accuracy, focus and relevance.</p> <p>The answer is <b>basic</b> and shows <b>limited</b> breadth and / or depth of understanding, <b>with</b> inaccuracies and omissions.</p>
1	1 to 3	<p><b>AO3:</b> Discussion of validation considerations to reduce the risk of data entry errors is <b>minimal and very limited</b> in effectiveness and relevance. Given tenuous conclusions are unsupported and show little relevance to the question aims.</p> <p><b>AO2:</b> Applied general knowledge and / or general assertions about potential impacts of data entry errors with little relevance to the context.</p> <p><b>AO1:</b> Knowledge and understanding of causes of data entry errors shows very <b>minimal</b> accuracy, focus and relevance.</p> <p>The answer has <b>isolated</b> points, showing <b>very minimal</b> breadth and / or depth of understanding, with <b>significant</b> inaccuracies and omissions.</p>
	0	No creditworthy material.

### Quality of written communication (QWC) = 3 marks

Mark	Descriptor
3	The answer is clearly expressed and well structured. The rules of grammar are used with effective control of meaning overall. A wide range of appropriate technical terms are used effectively.
2	The answer is generally clearly expressed and sufficiently structured. The rules of grammar are used with general control of meaning overall. A good range of appropriate technical terms are used effectively.
1	The answer lacks some clarity and is generally poorly structured. The rules of grammar are used with some control of meaning and any errors do not significantly hinder the overall meaning. A limited range of appropriate technical terms are used effectively.
0	There is no answer written or none of the material presented is creditworthy.

**Or**

The answer does not reach the threshold performance level. The answer is fragmented and unstructured. The errors in grammar severely hinder the overall meaning.

## **Indicative content**

Examiners are reminded that the indicative content reflects content-related points that a student may make but it is not an exhaustive list, nor is it a model answer. Students may make all, some or none of the points included in the indicative content as its purpose is as a guide for the relevance and expectations of the responses. Students must be credited for any other appropriate responses.

### **AO1: Knowledge – causes of data entry errors:**

- user-entered data is not sensible
- user-entered data is not in the correct format
- user-entered data is not accurate
- non-compliance with data privacy legislation for its usage.

**AO2: The students will apply general knowledge of data entry errors and the potential impacts caused by these errors. Consideration is given to validation techniques that could be introduced to reduce this risk.**

**AO3: The students will evidence evaluation of data entry errors and the potential impacts caused by this with consideration for relevant validation techniques that could be implemented to mitigate these risks, resulting in reasoned judgements and a supported conclusion. This may include:**

In this scenario, due to the data errors, the internet provider is potentially missing out on converting enquiries to customers and therefore not generating as many sales from the list of leads as they had expected. This can have a financial impact on the company and affect the financial forecasts and performance. In addition, there could be a reputational impact if the company has made guarantees to contact those who have expressed an interest and are then unable to do this, leaving the potential customers dissatisfied. Equally, the customer is potentially missing out on the product itself or new product offers. There are several factors that should have been considered when designing the online form and collecting the data to reduce the possibility of data entry errors. Validation on the register interest form would have ensured that data users entered was in the correct format, was in a valid data range for the form field type and was not a code injection attempt.

Form validation checks that required information is inputted by the user, and that the form submission process cannot be completed without this. This would have prevented the issue the company now has with missing contact telephone numbers. Validation also ensures that the user provides information in the correct format, specifically the telephone number in this scenario.

A form field with telephone number formatting specific to the UK, including the country code being pre-defined and visible on-screen, would have meant less work for the user and been more intuitive in terms of expected format. This validation would have prevented the issues described in this scenario with non-UK numbers.



A form should clearly indicate which are required fields and validation should take place either in real-time (instant) or upon submission of the form. The form should not submit nor be processed without all the desired information.

Where validation fails, the form should present clear and concise information regarding what information the user is missing or that which does not meet the expected format.

### Assessment objective (AO) grid

Question	AO1	AO2	AO3	QWC	Total
1	1				1
2a	2				2
2b		2			2
3		2			2
4a	2				2
4b		2			2
5		2			2
6		2			2
7a	2				2
7b		2			2
8			3		3
9			3		3
10	2				2
11	2				2
12a	2				2
12b		2			2
13		2			2
14		2			2
15		2			2
16			3		3
17			3		3
18	1				1
19	2				2
20a	2				2
20b		2			2
21		4			4
22a	1				1
22b		5			5
23			3		3
24			6		6
25	4	4	4	3	15
26	2				2
27a	2				2

Question	AO1	AO2	AO3	QWC	Total
27b		2			2
28a	2				2
28b		4			4
29a	2				2
29b		2			2
30		4			4
31			3		3
32			4		4
33			4		4
34	4	4	4	3	15
<b>Total</b>	<b>35</b>	<b>50</b>	<b>40</b>	<b>6</b>	<b>131</b>

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