T Level Technical Qualification in Digital Support Services

Core knowledge and understanding

Paper B

Mark scheme

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 objectives (AOs) 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 marks are allocated 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 bands-based descriptors and indicative content.

Bands-based descriptors. Each band 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 band having an associated descriptor indicating the performance at that band. You should determine the band 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 band descriptor. Remember to look at the overall quality of the response and reward students positively, rather than focusing on small omissions. If the response covers aspects at different levels, you should use a best-fit approach at this stage and use the available marks within the band 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 with 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

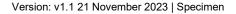This assessment requires students to:

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 is a responsibility of a professional in network cabling?**
	A **Building storyboards to conceptualise designs**
	B **Coaching team members in agile frameworks**
	C **Conducting scientific investigations and experiments**
	D **Installation of rack-mounting equipment**
	[1 mark]

AO1 = 1 mark

Award **one** mark for identifying the correct answer.

Answer: **D** (Installation of rack-mounting equipment)

Do not accept any other responses.

2	**Describe** one **reason why it is important for someone to have good customer service skills in a 1st line support role.**
	[2 marks]

AO1 = 2 marks

Award **one** mark for each part of a description of a reason why it is important for a 1st line support role to have good customer service skills, up to a maximum of **two** marks.

For example:

- it is important to have good customer service skills in a 1st line support role because the job will involve taking support calls and resolving queries with customers (1), some of whom may be upset or angry, and so staying calm and polite will calm the situation and help the customer to get the help they need (1)
- customer service skills will be important in 1st line support as you will be required to communicate information clearly to those in need of support (1), and actively listen to them in order to help them to gain the correct information, to resolve any issues they are having (1).

Accept any other suitable responses.

3	Natalia has recently started a new job as a server engineer for a national sports organisation. Part of Natalia's job is to ensure that the servers are maintained and have sufficient storage for the organisation's needs. **Explain** two **reasons why Natalia will use digital monitoring in her new role** [4 marks]

AO1 = 2 marks
AO2 = 2 marks

AO1: Award **one** mark for each identified reason, up to a maximum of **two** marks:

- to monitor that the servers are working (1)
- to identify any issues (1)
- to check there is no data loss (1)
- to track how files are being accessed (1)
- to ensure that there are no data breaches (1).

Accept all other suitable responses.

AO2: Award **one** mark for a further explanation of the identified reason, up to a maximum of **two** marks.

For example:

- digital monitoring will be used by Natalia to ensure that the servers are performing as expected (1); this helps Natalia to proactively identify any issues that are arising with the servers and to fix them before they affect any of the other staff at the sports organisation (1)
- Natalia will use digital monitoring to check on the server availability (1) so that if the servers are offline, she can get them back up and running so that there is no loss of important data, like sports fixtures or card details (1).

Accept all other suitable responses.

4	Noah has recently started his own business offering disaster recovery services to businesses suffering from IT problems. Whenever Noah is called to an IT problem, the first job is to troubleshoot the problem.
	Explain two **stages of the troubleshooting process that will be important in helping Noah's understanding of the IT problem his client is experiencing.**
	[4 marks]

AO1 = 2 marks
AO2 = 2 marks

AO1: Award **one** mark for a correct identification of one stage of the troubleshooting process, up to a maximum of **two** marks:

- to identify the client's problem
- to check the logs to see what has happened
- to start logging to see if the problem persists
- to create an action plan to fix the problem
- to escalate any issues that Noah cannot resolve himself
- to implement the fixes
- to review what caused the problem so it does not happen again.

Accept any other suitable response.

AO2: Award one mark for providing an explanation of how the troubleshooting stage will help Noah to understand the IT problem the client has, up to a maximum of **two** marks:

- Noah will need to identify what the problem is as they will need to know the problem before they can work out how to fix it (1)
- Noah will need to implement the fixes to the client's IT system so that the problem is resolved (1)
- Noah will need to carry out a review with the client once the problem is fixed so that the problem does not happen again (1).

Accept any other suitable response.

5	Muhammad works for a product development company. He has recently created a new health smart watch that can track heart rate, blood pressure and steps. Muhammad has been asked to create an interactive guide for users on the smart watches' features and how to use them.
	Give one **example for each of the following bullets as to why it would be important that the user guide for the smart watch includes:** • **plain language** • **visual content.** [2 marks]

AO2 = 2 marks

Award **one** mark for a correct explanation of why each identified element should be included in an instructional product user guide, up to a maximum of **two** marks:

- using plain language in the user guide will be important as the watch will likely be used by non-technical users, so they will need clear information without jargon, on how to operate things like the heart rate tracker (1)
- visual content will be important in the user guide so the owners will be able to use the images to help understand the different health features of their watch and how to use them properly (1).

Accept any other suitable response.

6	A local university has organised a global innovation event via digital conferencing. The event will offer the attendees the opportunity to participate in the event via break out rooms so they can share good practice and ideas. Each break out room will host technical and non-technical attendees.
	Explain two **benefits that digital conferencing would provide for individuals attending the innovation event.** [4 marks]

AO2 = 4 marks

Award **one** mark for each relevant benefit of digital conferencing and one further expansion point in the context of the scenario, up to a maximum of **four** marks.

For example:

- one benefit of using digital conferencing is that the attendees can be part of the conference from anywhere in the world, they do not need to physically attend the university (1); this means that it is likely to increase participation as more people may be able to attend the conference, resulting in more ideas being shared (1)

- using digital conferencing will be beneficial as it will allow more opportunity for attendees to work more collaboratively than a face-to-face conference would (1) as by using breakout rooms and chat boxes it will allow the attendees to network and capture a record of the event more effectively (1).

Accept any other suitable response.

7	Kwizzkidz are a business who provide IT support services to childcare providers such as nurseries and schools. At present, when a client contacts Kwizzkidz, they phone the business and a paper record is made of the issue. Clients only receive further updates if a technician needs to visit their site. If the problem can be solved remotely this is completed and the client may be emailed to confirm, but not always. Kwizzkidz have been receiving complaints recently about the time being taken to access support and there have been some instances where a client's IT problem was not assigned to a technician. As a result of this, Kwizzkidz management are considering installing a digital support ticket system. **(a) Explain** one **advantage to Kwizzkidz of using a digital support ticket system.** [2 marks] **(b) Discuss the impact a digital support ticket system would have in resolving the issues that Kwizzkidz are facing.** [3 marks]

AO2 = 2 marks

(a) AO2: Award **one** mark for a contextualised explanation of a benefit of using a digital support ticket system for KwizzKidz, up to a maximum of **two** marks.

- One advantage of a digital support ticket system is that it will enable the clients to check on the progress remotely (1) to see if the IT issue is being resolved without needing to contact Kwizzkidz, which provides a more efficient customer experience (1).
- A digital support ticket system will save Kwizzkidz time and money as they will not need to have staff operating a telephone system (1), which means clients can enter their issue into an online form and the software can allocate the job automatically to the next available technician, saving staff resources (1).

AO3 = 3 marks

(b) AO3: Award **one** mark for each discussion point, up to a maximum of **three** marks.

- Using a digital support ticket system will solve a lot of the problems that Kwizzkidz are having. One complaint is that some recent issues have not been assigned to a technician, which would not happen with the digital support ticket system as the software would automatically assign the next available technician to the problem (1). The ticket system will also enable KwizzKidz to determine which tasks can be allocated to which technicians, so only technicians that can fix the problem will be allocated (1), which will mean the clients are happy as they get their IT problem resolved (1).
- A digital support ticket system can determine which tasks can be allocated to which technicians, so only technicians who have the correct speciality who can fix the problem will be allocated (1), which will mean the clients are happy as they get their IT problem resolved more efficiently and directly from a specialist (1) with an audit trail detailing the ticket progress and solution measures (1)
- A digital support ticket system would solve the issue of clients not knowing what is happening with their IT issue (1). The client would be able to complete a form to log their issue and would then be provided with a link to their ticket, making the process more visible for both parties (1). The client will be able to have a live update on the progress of their repair and be notified when the issue is fixed as a final email will be sent to close the ticket (1).

Accept any other suitable response.

8	Safia is the director of IT support services at the local council. Part of their job involves agreeing all job descriptions for any new IT jobs that are being advertised at the council. Recently, Safia was asked to review a job description for a 1st line IT support technician. Part of this job description stated that the role would expect the employee to be able to: • install, test and certify copper and fibre cable infrastructure • maintain the effectiveness of the IT infrastructure • problem detection, support and escalation • working to relevant legislation. Evaluate whether this job description would be suitable for the role of a 1st line IT support technician. [3 marks]

AO3 = 3 marks

Award **one** mark for each contextualised evaluation point in relation to whether this is a suitable job description for a 1st line technician, up to a maximum of **three marks**.

- This is not a suitable job description for a 1st line support technician. Whilst most of the tasks like problem solving and support are part of the role, as the technician will be answering calls from staff with IT issues (1), the requirements to install, test and certify cable infrastructure is not a task that would be expected to be completed in this entry level role (1). Therefore, this job description is not suitable for the role and the tasks relating to infrastructure should be replaced with tasks more relevant to the role, such as communication changes to staff or customer service skills (1).
- This is a job description that would cover several roles in IT support, such as network engineers or infrastructure technicians as they would be expected to maintain the infrastructure (1). However, this job is a customer support role and is the 1st line so will deal with a whole range of user related issues like 'the PC will not turn on' or 'it will not print'. This is also an entry level job so employees would not necessarily need any detailed IT knowledge to accept the role (1). Therefore, this job description is relevant to the IT support department, but it is not relevant to the specific role being advertised (1).

Accept any other suitable response.

Section B: Tools and testing   **Total for this section: 21 marks**

9	**Which** one **of the following is a type of testing used to provide information on an application's speed, stability and scalability?** A **Integration testing** B **Performance testing** C **Security testing** D **Unit testing** [1 mark]

AO1 = 1 mark

Award **one** mark for identifying the correct answer.

Answer: **B** (Performance testing)

Do not accept any other responses.

10	**Identify** two **purposes of testing digital components.** [2 marks]

AO1 = 2 marks

Award **one** mark for each identified purpose, up to a maximum of **two marks**:

- functionality
- usability
- compatibility
- accessibility
- user satisfaction
- fault-finding and debugging
- impact assessment
- efficiency
- accuracy of data
- desired outcome
- performance monitoring.

Accept any other suitable response.

11	A website is being created for a company wanting to sell its custom-built electric scooters directly to the consumer. The 3D-printed carbon fibre scooter frames are manufactured in China and shipped to the UK, where they are custom assembled, sold and dispatched. It is a large-sized and complex e-commerce project that involves the configuration of an e-commerce platform, product photography, descriptions, and pricing, integrated shipping options, and payment processing. The website must be completed for a live launch in the next 4 months. **(a) Identify** two **project management methodologies that the business could use** [2 marks] **(b) Explain how these** two **project management methodologies could be used by the business to ensure the project is delivered on time.** [4 marks]

AO1 = 2 marks
AO2 = 4 marks

(a) AO1: Award **one** mark for identifying each project management methodology, up to a maximum of **two** marks:

- agile management (1)
- waterfall management (1)
- spiral management (1)
- rapid application development (RAD) management (1).

(b) AO2: Award **two** marks for each explanation point in relation to the context of the scenario, up to a maximum of **four** marks.

- Waterfall management would be a help to the business as they would know the next steps needed to complete the website (1). If it looks like they are falling behind with the photography part of the website, they know that the descriptions are next, and so could have these ready to go as soon as the photography is complete (1).
- Agile management could be used as the scrum master keeps a close eye on the project and if it looks like any part of the website build is falling behind (1) then all resources can be redirected to focus on that in a sprint to ensure that the 4-month deadline is met (1).

Accept any other suitable response.

12	An online custom wallpaper company is about to launch a new feature on their website. They have added an augmented reality (AR) filter onto the website so customers are able to see what their custom wallpaper would look like in their homes. Prior to launching this new feature, the business would like to undertake stress testing. **Explain** one **reason why stress testing the AR feature is important.** [2 marks]

AO2 = 2 marks

Award **one** mark for each contextualised explanation point of why stress testing is important, up to a maximum of **two marks**.

For example:

- stress testing the AR feature before its launch will be important to make sure that customers PC or mobile devices will be able to display the wallpaper on their walls without crashing (1); if customers cannot use the feature without their device crashing this will cause the business to lose reputation and customers (1)
- it will need to be stress tested to ensure if there are large numbers of customers all wanting to trial their wallpaper at once (1) that the business' website will be able to cope with the level of demand and traffic (1).

Accept any other suitable response.

13	Core Mindfulness is a mobile app with content to help improve wellbeing delivered via a web browser. Since Core Mindfulness' recent release of a mobile software update, their customer support services team have reported an increase in customer issues relating to incompatibility of some of the app's new features. **(a) Explain how Core Mindfulness can use mobile compatibility testing when developing their new app.** [2 marks] **(b) Discuss the importance of mobile compatibility testing to a successful software update release.** [3 marks]

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for each contextualised explanation of how mobile compatibility testing can be used in the development of the new app, up to a maximum of **two** marks.

- As Core Mindfulness' app is a mobile app, they will use compatibility testing to check that their app works on a wide range of different phones and operating systems (1); this will be done to ensure that as many people as possible are able to use their app regardless of their handset (1).
- They will need to use mobile compatibility testing each time they develop a new update for the app (1) so that they know if the app will cause customers issues and they can fix the issues before they share the updates with customers (1).

Accept any other suitable response.

(b) AO3: Award **one** mark for each contextualised discussion point on the importance of compatibility testing, up to a maximum of **three** marks.

- It reduces the risk of customers experiencing incompatibility issues, like they have with their new features, and so the mobile app meets expectations and provides a good user experience across a diverse range of mobile devices (1). Compatibility testing would have also allowed for Core Mindfulness to detect any issues with their mobile app's software update before it was released and avoided customer's having to contact the customer support services team with incompatibility issues (1). This helps build a good reputation with Core Mindfulness, with customers trusting that their mobile software update releases have been through a quality assurance process (1).
- Testing is important to the success of the app. Customers are the individuals who will purchase and use the app, and so if the compatibility of their devices has not been tested, then many customers will see the app not work on their device and not use it (1). By taking the time to test the app on the most common handsets and the most common operating systems, Core Mindfulness will know that customers will receive the app how they intend for them to experience it (1). This will ensure that customers are happy with the app when they do download it and will keep using it (1).

Accept any other suitable response.

14	Oscar has invented a new device to help children to master IT skills. The device allows children to learn how to code, learn how to use common software packages and how to build a computer. The device is different to other products on the market in that it does not offer access to the internet so can be used anywhere and keeps children safe. Oscar is pitching this device to a major retailer who has stores worldwide. Oscar has been told by the retailer they will have access to a PC, interactive screen and sound for the pitch. **(a) Explain** one **presentation tool that Oscar should use in their pitch.** [2 marks] **(b) Assess why using digital presentation tools will be important to Oscar when running his business.** [3 marks]

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for a contextualised explanation of one presentation tool Oscar should use in his presentation, up to a maximum of **two** marks.

- Oscar should prepare a product demo for his pitch. The retailer will want to see how the device works (1) and how it is different from other similar products and having devices available for the retailer to try will make this possible (1).
- Oscar should prepare a presentation that markets his products. The presentation would give information, such as how much it costs to make and how to use the device (1), which would give the retailer all the information they need to know about the device (1).

(b) AO3: Award **one** mark for each contextualised assessment point of the importance of digital presentation tools to Oscar for his business, up to a maximum of **three** marks.

- Digital presentation tools will be very important to Oscar when running the business. Oscar may need to do a number of pitches to retailers before someone decides to sell the device and having a presentation will enable them to use this each time to outline key facts and figures (1). However, this will only be true if the retailer is able to give Oscar access to a screen that they can show the presentation on. If the retailer does not have the technology needed, then the presentation would not be able to be shown (1). Overall, using digital presentation tools will be very important to Oscar in launching and selling their new device due to the wide range of tools that can be used to present the data (1).
- Digital presentation tools will also enable Oscar to provide a more interactive overview of the product than a business plan or speech would, as Oscar can include videos of the device being used and key data, such as cost to manufacture and project sales costs, much more effectively than a speech would (1). However, digital presentation tools will only be beneficial where the pitch is in person. Some pitches may require Oscar to submit a written pitch or meet a set file size, which would mean they would not be able to use many of the more interactive tools like videos as these would not meet the criteria (1).

Therefore, digital presentation tools will be important to Oscar in their business, but Oscar should not rely on being able to always use these tools and should consider other tools as well to ensure that they can adapt the pitch as needed (1).

Accept any other suitable response.

Section C: Security and legislation

This section is worth 38 marks plus 3 marks for quality of written communication (QWC)

15	**Which** one **of the following is the correct expansion of the acronym TLS?**

A **Transfer layer security**

B **Transfer level security**

C **Transport level security**

D **Transport layer security**

[1 mark]

AO1 = 1 mark

Award **one** mark for identifying the correct answer.

Answer: **D** (Transport layer security)

Do not accept any other responses.

16	**Identify** one **responsibility that employers have under the Health and Safety at Work etc Act (1974).**
	[1 mark]

AO1 = 1 mark

Award **one** mark for a correct identification of one responsibility that employers have under the Health and Safety at Work etc. Act (1974), up to a maximum of **one** mark:

- provide adequate training for staff
- provide a safe working environment
- provide adequate welfare provision for staff
- provide relevant information, instruction and supervision.

Accept any other suitable response.

17	State two **key features of the Freedom of Information Act 2000.**
	[2 marks]

AO1 = 2 marks

Award **one** mark for each key feature stated, up to a maximum of **two** marks.

- public sectors are required to publish information (1)
- members of the public are entitled to request information from public authorities (1).

Accept all other suitable responses.

18	A UK private company has been approached by law enforcement requesting access to their internet connection records through the Investigatory Powers Act 2016.
	They need to identify the communications service that a company device has connected to.
	(a) State one **key feature of the Investigatory Powers Act 2016.**
	[1 mark]
	(b) Explain how law enforcement will gain permission to access this information.
	[2 marks]

AO1 = 1 mark
AO2 = 2 marks

(a) AO1: Award **one** mark for correctly stating one key feature of the Investigatory Powers Act 2016:

- enhances powers for law enforcement and security agencies to obtain and intercept communications and data (1)
- highlights the way in which new powers are authorised and overseen (1)
- ensures powers are fit for the digital age (1).

Accept any other suitable responses.

(b) AO2: Award **one** mark for each explanation point relating to the process of obtaining permission, up to a maximum of **two** marks.

- Before law enforcement agencies can access any records from the private company, they must convince the secretary of state to authorise the warrant (1) and have the request approved by a judge, on the basis that the grounds for the warrant is a threat to national security / serious crime (1)
- Double lock is a protection in the legislation that ensures law enforcement cannot simply use their powers (1). Before they could issue a warrant to the UK private company, law

enforcement must convince all parties that they have sufficient cause and only then will they be allowed to use it. (1).

Accept any other suitable responses.

19	Two critical zero-day vulnerabilities have been identified in the newest release of a mass-market operating system. These vulnerabilities have been exploited and this has affected its end-users. **(a) Describe the meaning of a zero-day vulnerability**. [2 marks] **(b) Explain** one **way end-users can keep themselves protected against zero-day attacks.** [2 marks]

AO1 = 2 marks
AO2 = 2 marks

(a) AO1: Award **one** mark for describing the meaning of zero-day vulnerability, up to a maximum of **two** marks.

- Zero-day vulnerability is an exploitable security issue that exists in a new release (1), that the software vendor is unaware of, and has therefore had zero days to rectify the issue or release a patch / fix (1).
- Zero-day vulnerability is a security issue which is present in a new app or program on launch day (1) that has to be fixed immediately, which gives it its name of zero days as it has been out zero days before needing fixing (1).

Accept any other suitable response.

(b) AO2: Award **one** mark for each explanation of a way an end-user can protect themselves against zero-day attacks, up to a maximum of **two** marks.

- Ensuring software is as up to date as possible can help to keep end-users protected from any malicious actions (1); by advising the end-users to ensure that their PC is updated will reduce the ways in which malware can enter their PC, as the updates will have addressed any known issues or vulnerabilities that the developer has already fixed (1).
- Using security software installed like anti-virus or a firewall (1) will mean end-users can further reduce the risk of their device being attacked by zero-day attacks or other security threats (1).

Accept any other suitable response.

| 20 | Target Data England is a public sector body creating its new website to meet accessibility requirements as covered by the Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018. This act requires that all public sector bodies include an accessibility statement on their website.

(a) Explain one **piece of information that should be included in the accessibility statement that Target Data England will be publishing on its website.**

[2 marks]

(b) Discuss the importance of Target Data England ensuring their new website meets accessibility requirements.

[3 marks] |

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for a contextualised explanation of one piece of information the statement must include, up to a maximum of **two** marks.

- Target Data England should include details about known limitations of their website within their accessibility statement (1). This provides their users with details of accessible alternatives and an intended roadmap for resolving the inaccessibility (1).
- Target Data England will need to include details of the accessibility features the website has (1). This will enable those with additional needs to identify whether the website is truly accessible for them or whether they will need to use other software, such as text to voice, in order to fully access the website (1).

Accept any other suitable response.

(b) AO3: Award **one** mark for each contextualised discussion point on why it is important that Target Data England meets accessibility requirements, up to a maximum of **three** marks.

- It is important to ensure that the website is accessible as this is a requirement under the law (1); in addition to the law on websites there are other laws like the Equality Act 2010, which means businesses must take all reasonable steps in order to make their site accessible (1), and by including these features it will give the business a good reputation, but could also be used as an exemplar for other websites of how accessibility should be done (1).
- If Target Data England do not meet the accessibility requirements this will lead to them getting a poor reputation (1); groups that fight for equality will notice and would start to prosecute Target Data England for ignoring their legal responsibilities, which would then lead to large legal bills and court costs (1). Whereas, they could have spent a lot less money if they had simply included software to make the website accessible, which is often freely available (1).

Accept any other suitable response.

21	A network security administrator has detected some recent attempts at unauthorised use of a company's information systems.
	After researching the issue, the researcher has found recommendations of implementing a honeypot as a mitigation control.
	(a) **Explain** one **reason why the network security administrator would deploy a honeypot as a mitigation control.**
	[2 marks]
	(b) **Discuss the potential impact of using a honeypot that the network security administrator might encounter.**
	[4 marks]

AO2 = 2 marks
AO3 = 4 marks

(a) AO2: Award **one** mark for each contextualised explanation of how honeypots can be used as additional security protection, up to a maximum of **two** marks.

- The network security administrator could implement a honeypot as this will provide additional security protection to the company as it is the setup of a physical server with fake files and information to appear real (1). This will lure the attackers to try and access these network files and the administrator will be able to see how the attackers are trying to breach the system and fix it (1).
- The network security administrator could implement a honeypot as this will provide additional security protection to the company by using a virtual server running limited services, so the attackers cannot access any of the real systems (1), and is designed to simulate common attack vectors so that the attackers think they are actually in the real systems, and will not realise they are doing no damage, which gives the administrator time to patch the vulnerability they used (1).

Accept any other suitable response.

(b) AO3: Award **one** mark for each contextualised discussion point of the potential impact of using a honeypot in relation to the context of the scenario, up to a maximum of **four** marks.

- The network security administrator is looking to gain insight on how the cyber attackers performed the recent attempts at gaining access to the company's information systems (1); they also want enough information to know where they are coming from and how they are operating, to be able to implement any security improvements or new security measures to protect the company further (1). Obtaining any data for this type of analysis creates a potential risk that the network security administrator will need to consider, as using a honeypot only retrieves data from an actual attack (1). However, the administrator can't be complacent as attackers are always looking for new attack methods (1).
- One impact is that the network security administrator may become complacent (1); they may use a number of different honeypots and so feel that the system is safe; however attackers are always looking for new ways to attack systems (1) and if the network

administrator is not actively monitoring for new attacks, they may not realise there has been a data breach until it is too late (1). Although obtaining any type of risk analysis data would help prevent a range of future attacks (1).

Accept any other suitable response.

22	Charlie has been asked to transfer approximately 30 000 sensitive files, up to a maximum of 2GB per file. This has previously been done via file transfer protocol (FTP). However, on this occasion they have been asked to transfer the files to a remote host using a secure file transfer protocol (SFTP) client.
	Discuss the impact of Charlie using SFTP compared to FTP.
	[4 marks]

AO3 = 4 marks

Award **one** mark for each contextualised discussion point of the impact of using SFTP, up to a maximum of **four** marks.

- Secure file transfer protocol (SFTP) provides a secure way to transfer files between hosts on a network, using secure shell (SSH encryption to protect data during transfer (1). This is important for Charlie as the files they have been asked to transfer are sensitive (1), whereas file transfer protocol (FTP) does not provide any secure channel so transferring the files via this method would create a greater risk to Charlie of the sensitive files being intercepted during transfer, causing a data breach or loss (1). This could lead to Charlie receiving disciplinary action for not following the rules on how to safely transfer sensitive information (1).
- Charlie may have been asked to use SFTP instead of FTP because SFTP encrypts data before sending it to another host (1), whereas FTP transfers are done in plain text format, which would not be secure for the sensitive files Charlie has been asked to transfer (1). If these files were intercepted then all the information would be too easily read by the hacker (1), which would mean that business and the client would suffer reputational damage leading to potential compensation for anyone affected by the breach (1).

Accept any other suitable response.

23	A company has recently suffered massive data loss, which an internal investigation has shown to be a result of negligence.
	An employee fell victim to a phishing attack, which enabled a hacker to access the company's systems and cause massive data losses to client data, intellectual property and other sensitive data. To date only 40% of the data has been recoverable.
	Additionally, a recently dismissed employee has also deleted all the files on one of the shared drives prior to leaving the company. Unfortunately, the company does not have a recent back up of these files.
	The company is now in the process of creating a threat and vulnerability strategy to prevent things like this happening again in the future.
	Evaluate the impact that technical and non-technical threats have had on this company.
	[12 marks, plus 3 for QWC]

AO1 = 4 marks
AO2 = 4 marks
AO3 = 4 marks
QWC= 3 marks

Band	Marks	Descriptor
4	10–12	AO3 - Evaluation of the impact that technical and non-technical threats may have on the company is **comprehensive**, **effective** and **relevant**, showing **detailed** understanding and **logical** and **coherent** chains of reasoning throughout. The answer demonstrates informed conclusions that are fully supported with rational and balanced judgements. AO2 - Applied all relevant knowledge of technical and non-technical threats to the context (impact on the company) and shows a **detailed** functional understanding of threats and impact. AO1 - A **wide range** of relevant knowledge and understanding of technical and non-technical threats, which is **accurate** and **detailed**. The answer demonstrates **comprehensive** breadth and / or depth of understanding.
3	7–9	AO3 - Evaluation of the impact that technical and non-technical threats may have on the company is **in most parts effective** and **mostly relevant**, showing **mostly logical and coherent** chains of reasoning. Given conclusions are supported by judgements that consider most of the relevant arguments. AO2 – Applied mostly relevant knowledge of technical and non-technical threats to the context (impact on the company), showing **some** functional understanding of threats and impact. AO1 - Knowledge and understanding of technical and non-technical threats is **in most parts clear** and **mostly accurate**, although on occasion **may lose** focus. The answer demonstrates **reasonable** breadth and / or depth of understanding, with **occasional** inaccuracies and / or omissions.
2	4–6	AO3 - Evaluation of the impact that technical and non-technical threats may have on the company is **in some parts effective** and of **some relevance**, with some understanding and reasoning taking the form of **generic statements** with some development. Given conclusions are brief and supported by judgements that consider only the most basic arguments. AO2 - Applied some but limited knowledge of technical and non-technical threats to the context and may show a lack of functional understanding of impact of the threat. AO1 - Knowledge and understanding of technical and non-technical threats show **some** but **limited** accuracy, focus and relevance.

		The answer is **basic** and shows **limited** breadth and / or depth of understanding, **with** inaccuracies and omissions.
1	1–3	AO3 - Evaluation of the impact that technical and non-technical threats may have on the company is **minimal** and **very limited** in effectiveness and relevance. Given conclusions are tenuous and are unsupported and show little relevance to the question aims. AO2 – Applied general knowledge and / or general assertions about technical and non-technical threats with little relevance to the context (impact on the company). AO1 - Knowledge and understanding of technical and non-technical threats shows very **minimal** accuracy, focus and relevance. The answer has **isolated** points, showing **very minimal** breath and / or depth of understanding, with **significant** inaccuracies and omissions.
	0	No creditworthy material.

Quality of written communication (QWC) = 3 marks

Marks	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, with inappropriate use of technical terms. The errors in grammar severely hinder the overall meaning.

Indicative content

AO1: Demonstrate knowledge and understanding of technical and non-technical threats that may include:

- infrastructure, systems and data could be deliberately damaged or destroyed by a disgruntled employee or disguised criminal using their access
- if an employee conducts intentional fraudulent activities by taking advantage of data or processes, the risks can include data leakage, diverting funds, money laundering and unauthorised purchases using company funds

- as a result of human error an employee could unintentionally delete files or leak company / customer data resulting in customers losing confidence and potential fines
- malicious spam unintentionally deployed could result in goods, money or intellectual property being stolen.

AO2: Apply knowledge and understanding of technical and non-technical threats to the context (impact on the company) that may include:

- The dismissed employee deleted files on the shared drive before leaving the company. This has resulted in the company not being able to recover the data due to their back-up process not having a recent copy. This disgruntled employee could have also damaged or destroyed infrastructure and systems dependent upon the access they had.
- If the phishing attack had been intentionally deployed by an employee, then they are conducting intentional fraudulent activities by taking advantage of their position at the company. This could result in the employee being dismissed and the company losing profits for the time it takes to restore the system. In this instance, the risk has come from a malicious insider.
- If the phishing attack had been initiated by an employee unintentionally, for example, clicking on a malicious email link, this could have result in personal or customer company data being stolen and leaked, resulting in potential identity theft. Alternatively, as only 40% of data has been recovered this could be ransomware meaning the company may not be able to recover more data without paying the attacker.
- Where the company has been affected by insider behaviour where activities have been without a motive to cause harm. This is likely to have come from a negligent or accidental insider. This is human error and could result in files being damages or deleted.

AO3: Evaluation of the impact that threats and non-technical threats may have on the company that may include:

- The company may have to deal with an act of sabotage by a malicious employee, such as disgruntled employee, who uses their authorisation and access to deliberately cause harm. This could result in the company having its infrastructure, systems or data damaged or destroyed completely. The companies' data backup and business continuity processes will determine what, if anything, is recoverable. This could additionally result in legislation related fines and loss of customer confidence.
- A security risk caused by an accidental insider could result in a data breach or loss. The insider would unwittingly expose this information by falling victim of a scam (for example, a phishing email) and affecting data (such as employee data, sales and marketing data, customer data and financial data). This could result in legislation related fines, such as GDPR, if data has been stolen due to the company not having measures in place to protect the data. This will also lead to a loss of customers through lack of confidence in how the company are protecting their personal data.
- Ramifications of disgruntled employee, or a disguised criminal, could be fraud and / or theft. These activities are conducted with intention and include data leakage, funds being diverted elsewhere if a transactional process is interfered with, money laundering and the theft or loss of goods, money and intellectual property being stolen. This could financially, operationally, and reputationally impact the company, its employees and their customers.
- Having a threat strategy will help the company to prevent technical and non-technical threat of data and systems being maliciously or unintentionally damaged or destroyed. The

strategy will define system controls to make data damage or theft harder to achieve. It will identify potential threats and measures that can be introduced to prevent this.

- The company may include staff training to raise awareness of phishing attacks, introduce a better back up process, which would ensure there is always a daily restorable backup of company data, and introduce more stringent user access so that dismissed employees instantly have their access revoked, preventing deletion of important data,

Accept any other suitable response.

Section D: Data and digital analysis

**Total for this section: 41 marks
[plus 3 marks for quality of
written communication (QWC)]**

24	State the characteristic of an algorithm that describes the repetition of steps until results are achieved.
	[1 mark]

AO1 = 1

Award **one** mark for identifying the correct answer:

- iteration (1)

Do not accept any other responses.

25	Outline the purpose of an algorithm.
	[1 mark]

AO1 = 1 mark

Award **one** mark for any relevant purpose of an algorithm:

- an algorithm is a process used to problem solve (1)
- an algorithm is a set of clearly defined rules to support problem solving (1)
- a process or set of clearly defined rules followed to support calculations or problem solving.

Accept all other suitable responses.

26	State two types of marketing data.
	[2 marks]

AO1 = 2 marks

Award **one** mark for each stated type of marketing data, up to a maximum of **two** marks:

- customer profiling (1)
- targeting customers (1)
- direct promotion (1)
- social media usage / interaction (1).

Accept all other suitable responses.

27	A newly established data science team is supporting senior leaders within a medical technology organisation to help inform business processes and strategy.
	The organisation produces several different products, with each product requiring several different specialist teams to work on them during the production process. At present, each team will work on the product independently of the other teams.
	The organisation has asked the data science team to analyse how they can be more efficient in the way that they produce their products.
	(a) **Identify** two **tools for problem solving and algorithm design that could be used.**
	[2 marks]
	(b) **Explain how** one **tool for problem solving and algorithm design could be used by the data science team to achieve the organisation's aims.**
	[2 marks]

AO1 = 2 marks
AO2 = 2 marks

(a) AO1: Award **one** mark for each identified tool for problem solving, up to a maximum of **two** marks:

- decomposition diagram (1)
- flowchart (1)
- pseudo code (1).

(b) AO2: Award **one** mark for each explanation in relation to the context of the scenario, up to a maximum of **two** marks.

- the data science team could use a decomposition diagram as this will show a breakdown of all the processes involved in the production process (1) and will help the team identify any relationships and dependencies, which could allow the business to work more efficiently (1)
- the data science team could use a flowchart, which will help the organisation to see what steps there are in the production process (1) and whether there are any points in the process where two tasks might be able to be undertaken at the same time, in order to reduce repetition of workload (1)
- the data science team could use pseudo code to produce a simplified code of what is happening in the production process (1), which the organisation could then pay a computer programmer to make algorithms specific to their production line to improve their overall efficiency (1).

Accept any other suitable responses.

28	A local charity shop has recently purchased IT equipment to enable them to track information related to customer donations which include clothing, furniture and books. The charity shop receives donations, then resells the items to customers in order to make money for the charity. (a) Identify two data types that the charity shop could use. [2 marks] (b) Explain how two data types could benefit the charity shop. [4 marks]

AO1 = 2 marks
AO2 = 4 marks

(a) AO1: Award **one** mark for each identified data type, up to a maximum of **two** marks:

- numeric
- text
- media
- geospatial
- temporal
- logical

Accept any suitable data category or type if given as an example of any of the above.

(b) AO2: Award **two** marks for each contextualised explanation of how the data types could benefit the charity shop, up to a maximum of **four** marks.

- The charity shop could use numerical data to monitor stock inventory of the donations received by customers (1) which would allow them to use integer as the data type for storing stock levels efficiently (1).
- The charity shop could use numerical data to store the costings for all items in the store (1) which would allow a decimal numerical data type to be used for accurately recording sales and profits (1).
- The charity shop could use text data as an opportunity to store consensual donor information (1) which would allow them to provide updates informing the donator of how much money their donation has made for the charity (1).
- The charity shop could use logical data such as a Boolean to monitor a customer's yes or no choices (1) which would allow them to use a tick box on a form to allow the charity shop to contact them or store information securely in accordance with GPDR (1).

Accept any other suitable response related to a relevant data type.

| 29 | A hotel is considering a total overhaul of their digital ecosystem. The owners feel they should introduce a more automated approach to how customers interact with the hotel.

One suggestion was to use biometric data to enable customers to check in and to access their rooms.

(a) Explain one **way the computational thinking process pattern recognition could enable fingerprint entry to the hotel rooms.**

[2 marks]

(b) Discuss the potential implications of using biometric data to access hotel rooms.

[3 marks] |

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for an explanation of pattern recognition in relation to the context of the scenario, up to a maximum of **two** marks.

- Pattern recognition would look at the features of each guests' fingerprints and then save this to the record for that stay (1). When the customer puts their finger on the door handle it would compare the fingerprint to the one on the record and open the door when it spots the same pattern (1).
- Pattern recognition would enable fingerprints to be used as each person has unique fingerprints, so each finger will have a different pattern (1). The hotel can scan the customer's fingerprint as they arrive and add this to their booking, and then when the customer puts their finger against a lock the computer can compare the patterns (1).

Accept any other suitable response.

(b) AO3: Award **one** mark for an implication of pattern recognition in relation to the context of the scenario, up to a maximum of **three** marks.

- If the customer does not place their finger on the sensor just right on their hotel door, they may be denied entry to their room (1) as the software would compare the pattern and it would not be the same so would not recognise the customer (1). The hotel will need to spend time making sure that they show customers how to put their fingers on the sensors on the doors to make sure they can get access (1).
- This will be beneficial to the hotel as it means they will not need to worry about customers losing their keys / key card for the room (1), as the majority of customers will always have their fingerprints with them. However, the hotel will need to have a backup system in place in case the guest does not have fingerprints (1), or the IT system fails as customers will need access to their rooms, which would cause a negative customer reaction to the system (1).

Accept any other suitable response.

30	A fitness app that syncs training data from a wearable device is using machine learning to help its users make decisions about their physical exercise and nutrition.
	The business is currently using machine learning algorithms to support functionality.
	(a) Explain how a machine learning algorithm can be used by the fitness app company.
	[2 marks]
	(b) Assess the benefit of using machine learning algorithms to provide more rich data to their end users.
	[3 marks]

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for each contextualised explanation point of how machine learning algorithms can be used, up to a maximum of **two** marks.

- Machine learning algorithms can be used by the fitness app to provide users with prompts to access built in health features (1) to help the end user to achieve their health goals (1).
- Machine learning algorithms could be used to provide users with patterns it has detected in their health data (1), along with suggestions for other programs they could try to improve their health data (1).
- Machine learning algorithms could be used to reward users for consistently using the app (1) and completing health challenges (1).

(b) AO3: Award **one** mark for each assessment point of the benefits of using machine learning algorithms to provide rich data to their end users, up to a maximum of **three** marks.

- A machine learning algorithm could be used by the fitness app to predict output values using sample data to train from and learn the mapping function from the input values to the output values, so predications to its users can be made by the fitness app (1). Users could be presented with health and wellbeing progress forecasting based on the data they are recording in the app, such as weight, workouts, measurements and food diaries, to keep them engaged with their fitness goals (1). This would benefit users to get the most out of the health app, which means they are likely to keep on using it (1).
- A machine learning algorithm could be used by the fitness app for data analysis which analyses the input data to detect patterns and group the data points so insights can be provided to the fitness app's users (1). Users could be presented target training programs and alternative exercise suggestions to keep users engaged with a diverse range of

training methods and styles (1). Although, users may not like that the app is suggesting alternatives to their own workouts and this may put users off using the app (1).

- A machine learning algorithm could be used by the fitness app for reacting to a particular environment and use trial and error to continuously and iteratively learn from the environment and experiences (1). Users could be rewarded for, or presented with, different actions relating to, their exercise and nutrition by the fitness app to maintain motivation (1); this could motivate the users to keep on with their healthy goals particularly if the app pushes these rewards when the use of the app falls (1).

Accept any other suitable response.

31	A website design team is making some improvements to an online sportswear company's website. The design team have explored ways in which the sportswear company can improve customer experience when purchasing sportswear online and have proposed the use of data analytics.
	(a) **Explain** one **proposal the design team could make to the sportswear company on how to use analytics on their website.** [2 marks]
	(b) **Assess the benefit to the sportswear company of using analytics on their website.** [3 marks]

AO2 = 2 marks
AO3 = 3 marks

(a) AO2: Award **one** mark for explaining a way in which analytics can be used in relation to the context of the scenario, up to a maximum of **two** marks.

- The design team could propose the use of data analytics on the sportswear company's website by using the customer's browsing and purchase history (1) to make suggestions on other products that the customer might like to purchase (1).
- The team could use data analytics by looking at the browsing history of all visitors to their website and the products they have looked at or bought (1). This can then suggest to each individual customer other products that might interest them in departments they might not normally visit (1).

Accept all other suitable responses.

(b) AO3: Award **one** mark for each contextualised assessment point of the benefit of data analytics, up to a maximum of **three** marks.

- Data analytics will be of benefit to the sportswear company as it will provide them with a deeper understanding of their customer's habits and preferences to help them encourage further purchases and increase customer sales (1), which they can then use to plan which items they should order more of (1) to be able to meet customer demand for the products (1).
- Data analytics will benefit the sportswear company as it can help support their development of product pricing models (1), which means they will know which customers are sensitive to price reductions (1) and so they can convert more browsing to sales (1).

Accept all other suitable responses.

32	Dataprism is a technology company that has recently taken the decision to migrate all their data onto the cloud. They are looking to move all their in-house storage, including files and databases, and will be paying a cloud service provider to provide the infrastructure and storage to achieve this. Dataprism need help producing a cloud storage migration plan, which will include the benefits and challenges of migrating to cloud storage and key considerations that should be made prior to migrating. Discuss the impact of implementing data migration to cloud storage. [12 marks, plus 3 for QWC]

AO1 = 4 marks
AO2 = 4 marks
AO3 = 4 marks
QWC= 3 marks

Band	Marks	Descriptor
4	10–12	AO3 - Discussion of cloud storage is **comprehensive**, **effective** and **relevant**, showing **detailed** understanding and **logical** and **coherent** chains of reasoning throughout. The answer demonstrates informed analysis that is fully supported with rational and balanced judgements. AO2 - Applied all relevant knowledge of the benefits of cloud storage and shows a **detailed** functional understanding of risks and impacts. AO1 - A **wide range** of relevant knowledge and understanding of cloud storage, which is **accurate** and **detailed**. The answer demonstrates **comprehensive** breadth and / or depth of understanding.
3	7–9	AO3 - Discussion of cloud storage is **in most parts effective** and **mostly relevant**, showing **mostly logical and coherent** chains of reasoning. Given analysis is supported by judgements that consider most of the relevant arguments. AO2 - Applied mostly relevant knowledge of the benefits of cloud storage, showing **some** functional understanding of risks and impacts. AO1 - Knowledge and understanding of cloud storage is **in most parts clear** and **mostly accurate**, although on occasion **may lose** focus. The answer demonstrates **reasonable** breadth and / or depth of understanding, with **occasional** inaccuracies and / or omissions.

2	4–6	AO3 - Discussion of cloud storage is **in some parts effective** and of **some relevance**, with some understanding and reasoning taking the form of **generic statements** with some development. Given analysis is brief and is supported by judgements that consider only the most basic arguments. AO2 - Applied some but limited knowledge of the benefits of cloud storage and may show a lack of functional understanding of risks and impacts. AO1 - Knowledge and understanding of cloud storage show **some** but **limited** accuracy, focus and relevance. The answer is **basic** and shows **limited** breadth and / or depth of understanding, **with** inaccuracies and omissions.
1	1–3	AO3 - Discussion of cloud storage is **minimal** and **very limited** in effectiveness and relevance. Given analysis is tenuous and is unsupported showing little relevance to the question aims. AO2 - Applied general knowledge and / or general assertions about cloud storage with little relevance to the context. AO1 - Knowledge and understanding of cloud storage shows very **minimal** accuracy, focus and relevance. The answer has **isolated** points, showing **very minimal** breath and / or depth of understanding, with **significant** inaccuracies and omissions.
	0	No creditworthy material.

Quality of written communication (QWC) = 3 marks

Band	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, with inappropriate use of technical terms. The errors in grammar severely hinder the overall meaning.

Indicative content

Key principles

AO1: Demonstrate knowledge and understanding of cloud storage benefits that may include:

- cloud storage is scalable with flexibility for Dataprism to increase or decrease capacity for its data storage
- cloud storage is cost effective as Dataprism will only have costs associated with the amount of cloud storage that is being used
- cloud storage mitigates some security concerns for Dataprism, such as vulnerable operating system dependencies
- cloud storage provides a central location for Dataprism's data
- cloud storage will ensure Dataprism has minimum levels of service stability and quality.

AO2: Application of the benefits and challenges of migrating to cloud storage that may include:

- Dataprism faces the challenge of having the right technical and support resources available to support the migration of their data from its in-house data centre facilities to their chosen provider's cloud-based storage infrastructure.
- Accessing Dataprism's cloud storage could be a challenge if the company's internet fails and is unable to access their data that is stored remotely. This could cause operational downtime to Dataprism depending on how much they rely on the cloud storage.
- Dataprism are intending on migrating all its data to cloud storage and there is the possibility of data not being logically grouped, being inaccurate and duplicated. This could be a challenge if there is no effective data management or cleansing prior to the use of cloud storage.
- The more cloud storage used by Dataprism the more it will cost the company. A challenge is ensuring there are no surprise costs. Tracking and monitoring are used to ensure any increase in cost associated with an increase in storage, or move to a higher cost storage tier, is anticipated.

AO3: Discussion of the impact of implementing data migration shows analysis of key considerations.

- The cost and accounting structure of cloud storage is different to that of an in-house data centre facility. The operational changes to the accounting model will need to be considered. Where Dataprism will have previously had up-front capital costs for hardware, licenses, updates / upgrades and maintenance, cloud storage costs will be based on a recurring basis for storage capacity used.
- To help inform Dataprism's financial and operational forecasting, the company should consider estimating the usage of storage resources and any known variable usage patterns. This will enable Dataprism to look at ways in which they can optimise resources and spend, such as choosing a cloud storage service provider's pricing model that meets requirements and provides a cost-efficient solution.
- Dataprism should consider the impact of the migration to cloud storage will have on its employees. It may mean that certain roles in the company become redundant because they are being provided by the cloud storage service provider, or there is a requirement to upskill and train employees to develop their knowledge and understanding of cloud storage and any internal changes to process.

- Cloud storage providers ensure high standards of security of data. However, this does not mitigate the need for Dataprism to consider implementing cloud storage security policies and governance to add layers of security. This should include limiting access to the cloud storage to only those users who require it and the use of encryption technologies by Dataprism when transferring their data to the cloud.

Accept any other suitable response.

Assessment objective grid

Question	AO1	AO2	AO3	QWC	Total
Section A					
1	1				1
2	2				2
3	2	2			4
4	2	2			4
5		2			2
6		4			4
7 (a)		2			2
7 (b)			3		3
8			3		3
Section A Totals	**7**	**12**	**6**		**25**
Section B					
9	1				1
10	2				2
11 (a)	2				2
11 (b)		4			4
12		2			2
13 (a)		2			2
13 (b)			3		3
14 (a)		2			2
14 (b)			3		3
Section B Totals	**5**	**10**	**6**		**21**
Section C					
15	1				1
16	1				1
17	2				2
18 (a)	1				1
18 (b)		2			2
19 (a)	2				2
19 (b)		2			2
20 (a)		2			2
20 (b)			3		3
21 (a)		2			2
21 (b)			4		4
22			4		4
23	4	4	4	3	15
Section C Totals	**11**	**12**	**15**	**3**	**41**

Section D					
24	1				1
25	1				1
26	2				2
27 (a)	2				2
27 (b)		2			2
28 (a)	2				2
28 (b)		4			4
29 (a)		2			2
29 (b)			3		3
30 (a)		2			2
30 (b)			3		3
31 (a)		2			2
31 (b)			3		3
32	4	4	4	3	15
Section D Totals	12	16	13	3	44
Target marks	35	50	40		
Total	35	50	40	6	131

Document information

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Additional sample materials		November 2022
v1.1	Sample added as a watermark	November 2023	21 November 2023