

# Exam student pack

# T Level Technical Qualification in Digital Support Services

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## Introduction

If you are a student studying the T Level in Digital Support Services and preparing for core exams, then this support pack is for you.

We know that the exams can seem daunting, and there are so many points to consider and skills to develop, but we, at NCFE, are here to help. This support pack contains guides and activities on various areas to help with your exam preparation, as a supplement to your classes, and will support your independent learning. The support ranges from exam techniques, information about the quality of written communication (QWC), a framework for extended-response questions (ERQs) and more. In addition to guides, this pack contains some activities in each section.

We do not recommend going through all sections at once; it can be a lot to digest. The first section is a self-assessment; this is a good place to start to identify areas where you would benefit from more developing or seeking further support. We recommend you start with these key areas and then work through the others step by step; some sections may be new learning, whilst others are revision – all can help support you in your exam preparation!

## Self-assessment

In each of the areas give yourself a RAG rating (red – R, amber – A or green – G). Rate yourself 'red' if you are not confident, 'amber' if you have some confidence and 'green' if you are very confident. Once you have completed a section of this pack, come back and rate yourself again, saying why you have given yourself that rating. If you are still on red or amber, what are your next steps to turn this to a green?

Area	Rating before		Rating after		Next steps
	RAG	Why?	RAG	Why?	
Exam key terms and requirements					
Key terminology					
Exam techniques					
Quality of written communication (QWC)					
English: foundations					
Mathematics					

Area	Rating before		Rating after		Next steps
	RAG	Why?	RAG	Why?	
Tips for exams					
Multiple-choice questions (MCQs) top tips					
Short-answer questions (SAQs) top tips					
Extended-response questions (ERQs) top tips					
Identifying the relevant knowledge and applying correctly to context					

## Exam key terms and requirements

### Assessment objectives (AOs)

The exam papers have been designed to assess 3 assessment objectives (AOs) detailed below.

#### AO1

AO1 is assessing the demonstration of the relevant knowledge and understanding of the digital support services sector – such as recalling key information or facts. Multiple-choice questions (MCQs), or some questions that just need a one word or one sentence answer, would be examples of questions that only assess this objective.

#### AO2

AO2 is a higher demand objective that goes beyond just recalling information, and instead into using and applying that knowledge of the digital support services to different situations and contexts. Questions can include completely new and unfamiliar situations and contexts, but the knowledge and principles that have been taught would still apply to this new situation in the question. Many short-answer questions (SAQs) can assess both AO1 and AO2, but some SAQs can also assess A03.

#### AO3

AO3 is being able to analyse information and issues related to the digital support services sector and evaluate the situation to make informed judgements and draw conclusions. This might include considering the potential impacts the situation described in the question might have, any future considerations, comparing the pros and cons of a situation and justifying a decision – so it is about the careful consideration of a situation from multiple aspects, and then justifying any decisions or conclusions made.

### Command verbs

One thing to look for in an exam question is the command verb, such as state, explain, compare, evaluate, suggest. Getting used to what the command verb is asking for should help to maximise the marks gained in the questions.

It is worth using as many command verbs as possible when revising for different parts of the content in preparation for the exams.

When revising for network devices as an example, you could try to think of questions involving as many different command verbs as possible.

This can be from lower demand questions such as being able to identify a particular device used based on requirements– which is much more of a recall of knowledge question, an AO1 question, such as identify – and then more demanding questions such as comparing data types and assessing their suitability.

### Command verb table

Follow this link [T Level support materials command verbs](#) to access the different command verbs that could be in your assessments.

## Key terminology

Here are some of the key terms from the T Level Technical Qualification in Digital Support Services specification. Once you have covered these areas, or for revision, summarise the key terms in the space provided. There is space at the end for you to add any other terminology you feel would be useful.

Term	Summary
<b>Route core element 1: Business context</b>	
Change management	
Code of conduct	
Digitalisation	
End user needs	
Measurable value of digital services	
PESTLE (Political, Economic, Social, Technology, Legal and Environmental)	
Stakeholders	
Types of hackers	



Term	Summary
<b>Route core element 2: Culture</b>	
Autonomous operation	
Dehumanisation of service	
Ethical and moral impact	
Inappropriate use	
Mitigation techniques	

Term	Summary
<b>Route core element 3: Data</b>	
Access control methods	
Applications of data	
Characteristics of data	
Data access management	
Data flow diagram (DFD)	
Data modelling	

Term	Summary
<b>Route core element 3: Data</b>	
Directory-based structure	
Entity relationship diagram (ERD)	
File-based structure	
Information systems	
Methods of storing data	
Visualising data	

Term	Summary
<b>Route core element 4: Digital analysis</b>	
Characteristics of algorithms	
Computational thinking	
Decomposition diagram	
Flowchart	
Pseudo code	

Term	Summary
<b>Route core element 5: Digital environments</b>	
Components of physical computing systems	
Cloud services	
Function of Internet of Things (IoT)	
Hypervisor	
Local area network (LAN)	
Methods to create resilience	
Metropolitan area network (MAN)	
Network referencing models	
Personal area network (PAN)	
Protocols	
Virtual private network (VPN)	
Virtual machine (VM)	

Term	Summary
<b>Route core element 5: Digital environments</b>	
Wide area network (WAN)	

Term	Summary
<b>Route core element 6: Diversity and inclusion</b>	
Demographic imbalance	
Digital inclusion	
Diversity	
Equality Act 2010	

Term	Summary
<b>Route core element 7: Learning</b>	
Bias	
Boud, Keogh and Walker’s model	
Design thinking	
Emerging technology	

Term	Summary
<b>Route core element 7: Learning</b>	
Gibbs' Reflective Cycle	
Kolb's Experiential Learning Cycle	
Professional development	
Reliability	
Sources of knowledge	
Validity	

Term	Summary
<b>Route core element 8: Legislation</b>	
Computer Misuse Act 1990	
Copyright, Designs and Patents Act 1988	
Data Protection Act 2018	
Controlling the Assault of Non-Solicited Pornography and Marketing (CAN-SPAM) Act 2003 – USA	

Term	Summary
<b>Route core element 8: Legislation</b>	
Digital Economy Act 2017	
Electronic Communications Privacy Act (ECPA) 1986 – USA	
European Convention on Human Rights (ECHR)	
Freedom of Information Act 2000	
General Data Protection Regulation (GDPR)	
Health and Safety at Work etc Act 1974	
Human Rights Act 1998	
Industry standards	
Non-compliance	
Public Sector Bodies (Websites and Mobile Applications) (No.2) Accessibility Regulations 2018	
Waste Electrical and Electronic Equipment (WEEE) Directive 2012	

Term	Summary
<b>Route core element 9: Planning</b>	
Cost-benefit analysis	
Ineffective project planning	
Project lifecycle	
Project planning techniques	
Project scope	

Term	Summary
<b>Route core element 10: Security</b>	
Commercially sensitive information	
Confidentiality, integrity and availability (CIA)	
Identification, authentication, authorisation and accountability (IAAA)	
Internet security assurance	
Non-technical threats	

Term	Summary
<b>Route core element 10: Security</b>	
Risk mitigation controls	
Technical threats	

Term	Summary
<b>Route core element 11: Testing</b>	
Purpose of testing	
Root cause analysis	
Testing methods	

Term	Summary
<b>Route core element 12: Tools</b>	
Agile methodology	
Communication tools	
Evaluation tools	
Gantt charts	



Term	Summary
<b>Route core element 12: Tools</b>	
Power interest matrix	
Presentation tools	
Rapid application development (RAD)	
Spiral methodology	
Waterfall methodology	

Term	Summary
<b>Pathway core element 1: Careers within the digital support services sector</b>	
Job roles	
Responsibilities	
Skills required	

Term	Summary
<b>Pathway core element 2: Communication in digital support services</b>	
Communication factors	
Communication formats	
Communication methods	
Communication techniques	
Interactions with stakeholders	

Term	Summary
<b>Pathway core element 3: Fault analysis and problem resolution</b>	
Fault analysis tools	
Application of organisational frameworks	
Root cause analysis approaches	
Principles of incident management	
Information Commissioner's Office (ICO)	

Term	Summary	RC No
<b>Add any additional terms here along with the route core element number it relates to</b>		

## Exam techniques

### Identify strengths and where to begin

An effective time management strategy is to plan what order you are going to answer the questions in. This will play to your strengths and help build your confidence. The exam papers are divided into 3 sections, with each section addressing different areas of the taught content. In advance of the exams, you could identify which section of the exam paper contains the content you feel most knowledgeable and confident in, and you should begin the exam with that section.

Use the table below to consider the content areas within the different sections of the exam paper and add your comments to each section, showing your strengths and weaknesses within the content, and how confident you are feeling. An additional column has been added to allow you to rank the order of the sections, from strongest to weakest.

### Exam paper A

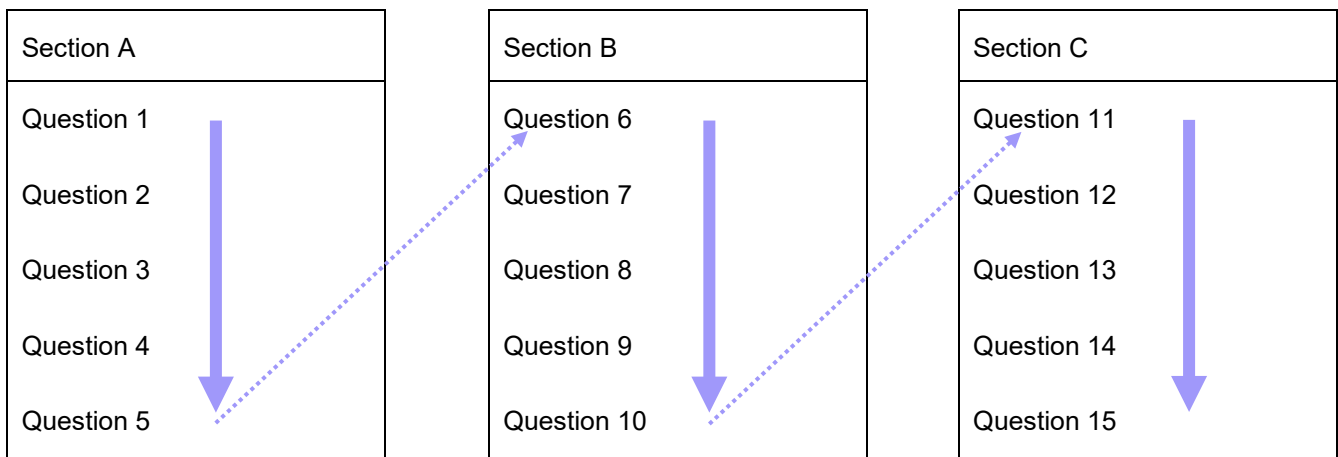
Exam section	Content assessed	Comments	Rank order
Section A	<ul style="list-style-type: none"> <li>• Business context</li> <li>• Culture</li> </ul>		
Section B	<ul style="list-style-type: none"> <li>• Diversity and inclusion</li> <li>• Digital environments</li> </ul>		
Section C	<ul style="list-style-type: none"> <li>• Learning</li> <li>• Planning</li> </ul>		

## Exam paper B

Exam section	Content assessed	Comments	Rank order
Section A	<ul style="list-style-type: none"> <li>• Pathway elements</li> </ul>		
Section B	<ul style="list-style-type: none"> <li>• Testing</li> <li>• Tools</li> </ul>		
Section C	<ul style="list-style-type: none"> <li>• Legislation</li> <li>• Security</li> </ul>		
Section D	<ul style="list-style-type: none"> <li>• Data</li> <li>• Digital analysis</li> </ul>		

## Targeting the lower demand questions

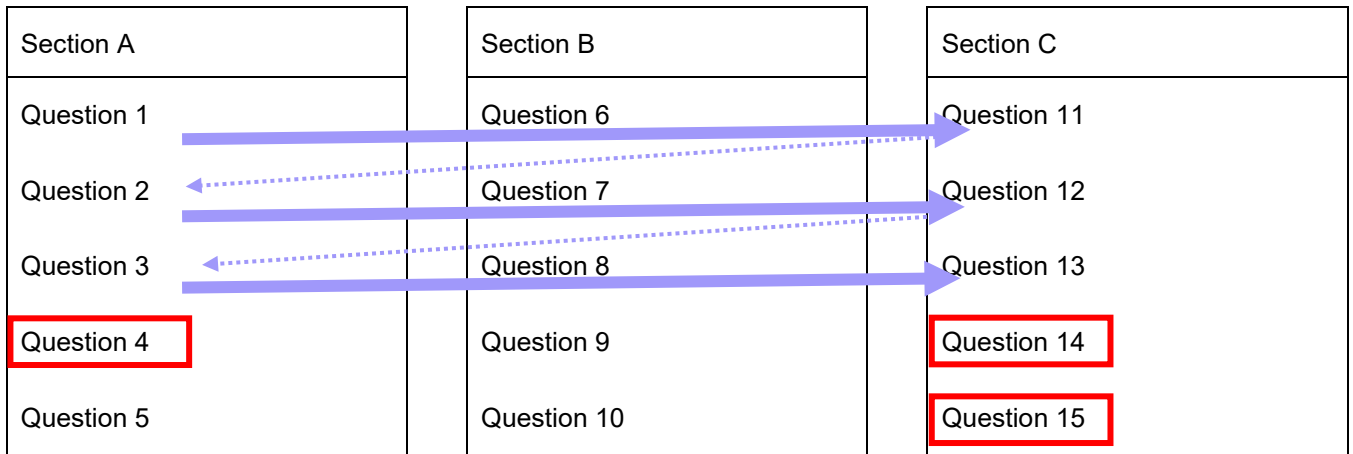
You may be used to taking the traditional approach to answering an exam paper, beginning at question 1 and answering each question in turn (question 2, followed by question 3), as illustrated below with the arrows.



However, each section of the exam paper begins with the lower demand questions, with an increase in challenge and demand as you progress through the section. The exam papers have been designed this way intentionally, as beginning with lower demand or ‘easier’ questions has been shown to help lower anxiety and settle you into the exam.

By changing your exam approach to the one illustrated below with the arrows, this can help you to secure more marks by addressing the less challenging questions first, rather than missing those opportunities if you had to spend more time on a more difficult question.

This approach will also allow you to 'pick and choose' (example on illustrated boxes below) between the higher demand questions and those you feel most confident with. Higher demand questions usually require a longer answer response.



## Time management

### Exam time management tips

1. Skim through the paper before you start
2. Budget your time for each question or section
3. Start on the questions or sections you find easiest
4. If you do not know the answer to a question, come back to it later
5. Make an outline for longer answer questions
6. Keep an eye on the clock
7. Taking the time to plan SAQ and ERQs answers helps with proofreading, for example, creating a mind map, lists and notes can help you structure your answers better
8. Stop and breathe

## Quality of written communication (QWC)

Think about the **register** and **tone** of what you are going to write:

- what will be the tone/attitude of the writing? think of extended-response questions (ERQs) as professional evaluations, therefore the tone will always be formal

Proofread your writing for readability:

- check one area at a time:
  - **spelling** – this includes looking for commonly confused words such as **there**, **their** and **they're** or **practice** and **practise** (for example, homophones – words that have same pronunciation but different meaning or spelling)
  - be aware of your own 'common' mistakes, and check for these (for example, mistyping letters the wrong way round in certain words)
  - **punctuation** – you could take one area at a time for example:
    - checking for correct use of capital letters
    - using a full stop to usually end a sentence
    - using commas to make meanings clearer such as clauses in a sentence
    - using colons to explain or expand on something
    - using an apostrophe to show possession or omission
    - using a question mark when asking a direct question
  - **grammar** – have you written in full sentences? Have you used the correct subject-verb agreement and tense? Do you jump from past to present tense?
- ways to proofread:
  - place a ruler underneath each line as you read
  - proofread backwards (for example, start on the last paragraph)
- read your writing aloud or in your head when in exam conditions – put yourself in the reader's shoes
- proofread after you have answered the question and then again at the end of the assessment if there is time
- read slowly and carefully – do not skim read!

There are 3 marks available for quality of written communication (QWC) in the ERQs – be aware of marking criteria and bands for QWC. In the example below, see the key words in bold to get the full 3 marks.

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



## English: foundations

### Why spelling, punctuation and grammar (SPaG)?

Spelling, punctuation and grammar (SPaG) enable us, as writers, to convey our thoughts in a way that our reader will find easy to understand.

Clear and accurate SPaG can make you appear more professional and get your message heard.

Employers are more likely to employ people who have good written communication skills.

### Apostrophes

There are 2 types of apostrophes:

- possession – ownership/belonging (for example, the dog's toy)
- omission – where you leave out a letter (for example, I'm a student, instead of I am)

In formal writing such as reports and articles, apostrophes for omission should be avoided to help keep the formal tone and register.

Apostrophes for possession often cause some confusion:

#### 1. The student's computer was broken.

Student is a singular noun, so you need to add an apostrophe and 's' to show that the computer belongs to the student.

#### 2. James's laptop was faulty.

James is a singular noun so, even though it ends in an 's' already, you need to add an apostrophe and another 's' to show that the laptop belongs to James.

#### 3. The students' feet were muddy.

This sentence is referring to more than one student. Students is a plural noun that ends in an 's', so you do not add another 's' after your apostrophe. You can just add an apostrophe to show the feet belong to the students.

#### 4. The children's toys were broken

Children is a plural noun, but it does not end with an 's', so you need to add an apostrophe and an 's' to show that the toys belong to the children.

The following activity is for you to try to recap apostrophes for omission and possession, as well as identifying if they are singular or plural.

## Apostrophe activity

You will find the answers to all activities in the appendix of this pack.

Add the apostrophe	Possession/omission	Singular or plural?
My dads name is Amir.		
Pauls dog is very cute.		
I read the research, its apparently Harmans Theory of aging.		
Antonios grandma speaks English, Italian and Arabic.		
My sisters friend is coming to visit in an hour.		
Im not sure but I think the physiotherapists are meeting next week.		
The hospitals strategy.		
The Childrens Hospital		
Hes the friend I spend the most time with.		
Thats Davids pen, he must have forgotten it.		
The swimmers families cheered them on.		

## Using the correct word

Sometimes words can be confusing as they sound the same but have different spellings and meanings. Below are some words that are often confused, with an activity to help secure understanding of the meanings.

### It's or its?

**It's:** This is a shortened form of it is or it has and is known as a contraction, for example, it's a sunny day.

**Its:** This is a possessive form of the pronoun 'it', meaning that it belongs to it, for example, the book is better than its cover.

The dog had eaten all \_\_\_\_\_ dinner.

\_\_\_\_\_ been a fantastic day, she exclaimed.

The dog licked \_\_\_\_\_ paw.

Let me know when \_\_\_\_\_ ready.

### I or me?

**I:** This is the subject and used when speaking or referring to the person or doing the action, for example, Ahmed and I handed out the books, or I gave Molly a lift to work.

**Me:** This is used when the person speaking is receiving the action, for example, me and Anna are going to see a movie tonight, or Josh carried me.

Who else will be coming to the cinema with John and \_\_\_\_\_?

The children and \_\_\_\_\_ were sitting on the settee.

**Whose or who's?**

**Whose:** This means belonging to whom, for example, whose jumper is this?

**Who's:** This is a contraction (shortened form) of the words 'who is' or 'who has', for example, who's going to the party?

\_\_\_\_\_ shoes are these?

\_\_\_\_\_ left their shoes in the doorway again?

I do not know \_\_\_\_\_ number this is.

Do you know \_\_\_\_\_ singing this song?

**Accept or except?**

**Accept:** This is a verb and means to receive something, for example, I accept this gift.

**Except:** Is a preposition meaning 'not including' (excluding or with the exception of), for example, we are open every day except Sundays.

I \_\_\_\_\_ your apology.

No dogs allowed \_\_\_\_\_ guide dogs.

Everyone \_\_\_\_\_ the nurses need to attend.

They do not \_\_\_\_\_ credit cards in the shop.

**Practice or practise?**

**Practice:** This is a noun and is used for a name or word, for example, The Happy Health Medical Practice

**Practise:** This is a verb and is used when doing something, for example, I am going to practise football.

I am going to visit the new medical \_\_\_\_\_.

I must \_\_\_\_\_ my breathing techniques.

**Practice or practise?**

**Practice:** This is a noun and is used for a name or word, for example, The Happy Health Medical Practice

**Practise:** This is a verb and is used when doing something, for example, I am going to practise football.

On a Friday, the children \_\_\_\_\_ handwriting.

The injection is given at your doctor's \_\_\_\_\_.

**Affect or effect?**

**Affect:** This is a verb and means to have an impact on or change, for example, poverty can affect anyone.

**Effect:** This is a noun and is the result of a change, for example, computers have had a huge effect on our lives.

Does the medication \_\_\_\_\_ the symptoms of the patient?

The new medication has no \_\_\_\_\_ on glucose.

**Advise or advice?**

**Advise:** This is a verb and means to recommend or give information, for example, I advise you to stay at home.

**Advice:** This is a noun an opinion or recommendation offered as a guide to action, for example, my advice is to sell your car.

My \_\_\_\_\_ would be to visit your GP.

I \_\_\_\_\_ that you stop smoking.

I asked the doctor for some \_\_\_\_\_.

Scientists \_\_\_\_\_ that you wear a mask.

<p><b>Allowed or aloud?</b></p> <p><b>Allow/Allowed:</b> This means giving permission or making something possible, for example, he was allowed to take his dog into the shop.</p> <p><b>Aloud:</b> This means to say something loudly so others can hear you, for example, the teacher read aloud from the book.</p>
<p>You are not _____ in the restricted area.</p>
<p>The process of learning clinical reasoning may be assisted by using think _____.</p>
<p>The patient was _____ to go home.</p>
<p>She read the instructions _____.</p>

## Activity

Create an example sentence showing the correct use of each of the following words.

Word	Meaning	Sentence example
Past	Gone in time/no longer	
Passed	To indicate movement	
Advice	A noun that means a suggestion about what you should do (a guide to action)	
Advise	A verb that means to suggest what should be done – to recommend/give info to someone (verb).	
Lose	To fail to win or hold on to something	
Loose	Adjective: not tight, not attached or Verb: to free something or someone	
Affect	To influence something.	
Effect	The result – it represents the end and a good way to remember is both start with an 'e'.	
Infer	Come to a conclusion, make an educated guess.	
Imply	To suggest and/or hint at.	

## Tenses activity

There are 3 main tenses in English: past, present, and future.

The past describes things that have already happened, for example, I went on a park run last week.

The present tense describes things happening right now, for example, it smells delicious in the kitchen.

The future tense describes things yet to happen, for example, next year I am going to Australia.

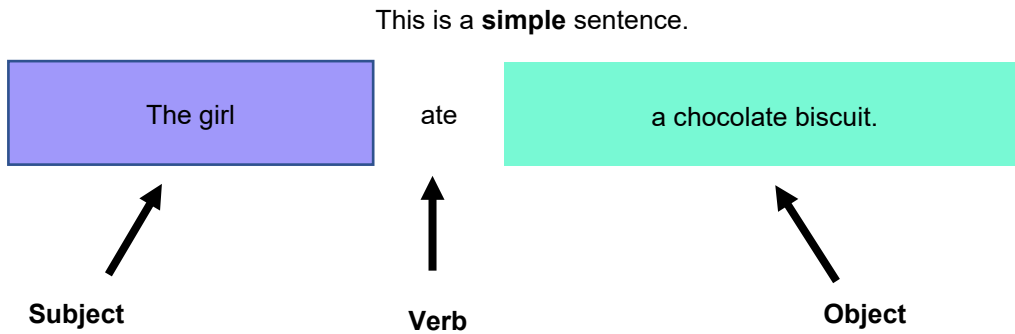
Identify the tense of the following sentences.

Sentence	Tense: past/present/future
1. We will go to the cinema on Saturday.	
2. Rashid is eating his lunch.	
3. Mario is walking to the shops.	
4. Viktoria slept all day yesterday.	
5. Mr and Mrs Perez are speaking Spanish.	
6. My parents flew from Gatwick airport.	
7. I am going to read a book.	
8. Elena is writing a story.	

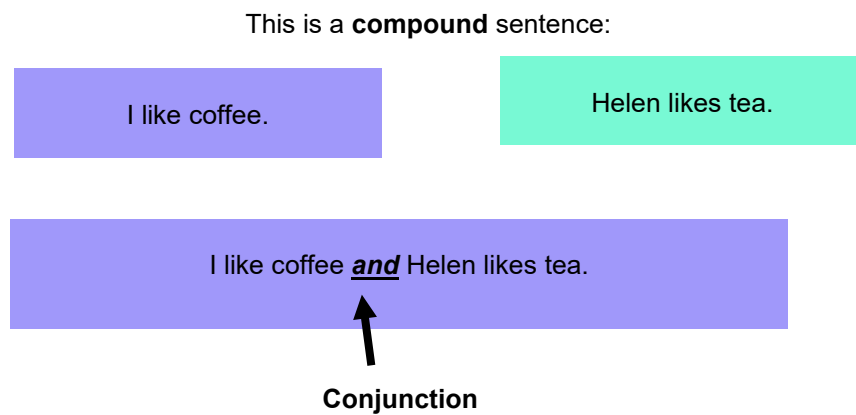


## Sentences

This is an example of a **main** clause. It is a complete sentence and makes sense by itself.

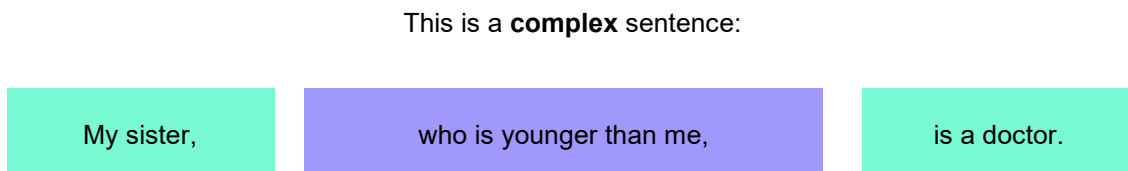


A compound sentence **connects 2 independent clauses, usually with a coordinating conjunction like, and, or, but.** They combine 2 or more self-sufficient and related sentences into a unified single sentence.



Complex sentences are formed by adding a **subordinate clause** to a main clause.

Subordinate clauses add information to the main clause.



For example: 'who is younger than me' is a subordinate clause as it adds more information to the sentence but **does not make sense on its own.**

A subordinate clause must be separated from the main clause using punctuation (usually a comma).

## Sentence activity

What is the sentence type: simple, compound, or complex?

Sentence	Type
Molly, 2 years younger than me, was not allowed to go.	
It was a very sunny day.	
They did not like the food, so they left the restaurant.	
The boy was crying because he had fallen.	
Ahmed, while others had to stand, managed to find a chair.	
I have a dog called Toby.	

## General mathematics competencies (GMC)

All T Level students (regardless of subject) must develop 10 general mathematical competencies. These are:

- GMC1. Measuring with precision
- GMC2. Estimating, calculating and error spotting
- GMC3. Working with proportion
- GMC4. Using rules and formulae
- GMC5. Processing data
- GMC6. Understanding data and risk
- GMC7. Interpreting and representing with mathematical diagrams
- GMC8. Communicating using mathematics
- GMC9. Costing a project
- GMC10. Optimising work processes

You will find that there are specific questions within the external assessments that assess against these competencies; however, it is important to consider how mathematics is assessed within your employer set project (ESP).

The table below can be used to guide your focus when it comes to considering how you would demonstrate the general mathematical competencies (GMC):

GMC	Examples of how GMC is applied to the T Level in Digital Support Services
GMC1. Measuring with precision	Measuring with precision can include: <ul style="list-style-type: none"> <li>• choosing the correct equipment, software and tools for the task</li> <li>• the units and scale of the measurement when displaying data</li> <li>• taking account of any data errors</li> <li>• reading calculations and choosing the appropriate number of significant figures/decimal places</li> </ul>
GMC2. Estimating, calculating and error spotting	The estimation, calculating and error spotting competency can require: <ul style="list-style-type: none"> <li>• understanding and knowledge of the context in order to find appropriate solutions to calculations</li> <li>• getting a sense check of any calculations performed, so you can be reassured your answer is in line with the expected solution</li> </ul>

GMC	Examples of how GMC is applied to the T Level in Digital Support Services
GMC3. Working with proportion	<p>Working with proportions can include:</p> <ul style="list-style-type: none"> <li>• using numbers, ratios and percentages, for example, but also graphical representations, determining trends/pattens</li> <li>• an understanding of direct proportion and inverse proportion – such as in graphs, numbers or qualitative descriptions</li> <li>• applying proportionality to make predictions and draw conclusions</li> </ul>
GMC4. Using rules and formulae	<p>Using rules and formulae includes:</p> <ul style="list-style-type: none"> <li>• knowledge and understanding of how to use rules and formulae</li> <li>• general rules as well, such as hierarchy of operators for brackets, indices, division, multiplication, addition, subtraction (BIDMAS)</li> <li>• being able to use formulae to query datasets</li> <li>• taking account of units and dimensions, and the effect when performing calculations</li> </ul>
GMC5. Processing data	<p>Processing data can include:</p> <ul style="list-style-type: none"> <li>• how the data is collected to begin with</li> <li>• what technology, such as spreadsheets, is used to process the data</li> <li>• how the data is represented and processed such as tables or chart/graph form</li> <li>• being able to interpret already processed data, such as drawing conclusions from provided graphs</li> </ul>
GMC6. Understanding data and risk	<p>Understanding data and risk can include:</p> <ul style="list-style-type: none"> <li>• knowledge and understanding of how data is sourced, for example, primary, or secondary sources</li> <li>• being able to critically evaluate data</li> <li>• making predictions and drawing conclusions from data</li> <li>• considering how data was generated, for example sample sizes and/or data source in terms of possible bias</li> </ul>
GMC7. Interpreting and representing with mathematical diagrams	<p>Interpreting and representing with mathematical diagrams include:</p> <ul style="list-style-type: none"> <li>• the creation of suitable diagrams, charts, infographics, for example</li> <li>• being able to interpret diagrams and charts</li> <li>• using technology in their production and setting suitable scales, trend lines</li> </ul>

GMC	Examples of how GMC is applied to the T Level in Digital Support Services
GMC8. Communicating using mathematics	<p>Communicating with mathematics includes:</p> <ul style="list-style-type: none"> <li>• the use of calculations and diagrams to represent your findings and support your conclusions/judgements</li> <li>• using different methods for different audiences, such as information for the general public versus information for professionals/specialists</li> <li>• the use of dashboards to demonstrate a data story</li> </ul>
GMC9. Costing a project	<p>Costing of a project can include:</p> <ul style="list-style-type: none"> <li>• financial planning, considering the various costs involved, such as equipment, space, time, resources, labour</li> <li>• being able to justify a budget for a certain project</li> <li>• taking into account risks that could potentially impact on any plans</li> </ul>
GMC10. Optimising work processes	<p>Optimising work processes can include:</p> <ul style="list-style-type: none"> <li>• identifying problems from data gathered, such as time requirements, efficiency, financials</li> <li>• suggestions for improvements and any resulting calculations, such as the amount of time saved, how it would affect resources/equipment costs</li> <li>• gather data to analyse the impact that the changes have and evaluate said impact</li> </ul>

## Tips for exams

Here are some tips to think about when taking an exam and making sure you are prepared.

### Top 10 tips to get you started

1. Read the question more than once
2. Make notes of keywords in the questions – you could underline or highlight these to remind you to define or use them in your answer
3. Look at how much space you have been given for the response, if there is a big space it means it will require an extended or in-depth answer
4. Take a note of the number of marks the question has – the bigger the mark, the more detail required
5. Remember, you do not have to do the exam in a sequenced order – if you do not know an answer, move on to another question and go back to any unanswered questions once you have answered all the questions you know
6. Take note of plural words in questions – it may be asking for more than one, for example, what are the effects of smoking and age?
7. If you have mathematics questions, set them out correctly, show working out and add units – this can be useful if you input incorrectly into a calculator or if you get an incorrect answer, you could still be awarded marks for the method and working out
8. What verb is being used in the question? Is it asking you to describe, explain, identify, justify, or assess? each verb has a different meaning, so how and what you respond with will depend on this
9. Plan long response questions so they are constructed in a way that answers the question (for example, quite often people just write everything they know about the topic and the question is left unanswered)
10. Do not leave blank responses – if you cannot think of an answer but know something about the topic, by writing something this gives you the opportunity of being awarded some marks rather than 0 if it is not attempted

## Digital top tips

Following on from the top 10 tips to get you started, here are some top tips that apply specifically to the digital exams:

- use the context of the question to identify which specific area of digital is being assessed (for example, which regulation is being referenced, is it the Data Protection Act 2018? Be clear on this before approaching the answer)
- when writing a conclusion, be clear on any evaluations, suggestions or analysis included and justify these with confidence (for example, if asked to discuss the importance of risk mitigation controls that the business might use to prevent security risks, justify any recommendations confidently with clear reasons, especially if you are identifying something as the best approach)
- if you are not sure on the context of the question, use key words to identify the content being assessed (for example, if the question includes the term 'algorithms', use this to link the answer to what you know about algorithms)

## Tips for different types of exam questions

### Multiple-choice questions (MCQs) top tips

Now some handy tips around multiple-choice questions (MCQs), first and foremost, read the MCQ in its entirety before looking at the answer options, do not go to the answers first.

#### Tip 1: question requirements

The first thing to check is what the question is asking you to address, as there can be some examples that could easily be missed.

- which option would be **unsuitable** for the situation described?
- which of the following is **not subject** to...
- explain the **impact** of...
- choose the **best** data type for...
- which **primary** sources of research should be used for...

Some questions can be asking for the opposite of what might be expected, and spotting these will be important:

- identifying features, principles, regulations that **do** or **do not apply** in certain situations – it is important that you identify what the question is asking
- performing a calculation for an alternative value than what is usually determined, such as a calculation that calculates an increase in something for example, a percentage increase in sales but the question wants to know the decrease, so remembering to take that one additional step
- has the scope of the question been narrowed? For example, a question about storage of data– is it all storage types or just common storage terminology?
- is a question about the network security asking about all types of security, or a particular type (for example, preventative)?
- is a question about testing asking about any type of testing, or is it looking for a particular type (for example stress testing)?

Circling and highlighting this key information on the exam paper is encouraged and will help ensure the question is correctly addressed.

#### Tip 2: try before checking

Another tip is to answer the question before looking at the options to choose from.

This can help to confirm your choice before answering, or if that option is not available then it should serve as a prompt to re-read the question carefully.

This applies to calculations too, perform the calculation needed and get the answer first – and then check the options.



**Be aware of similar options**

- A. Integration testing
- B. Performance testing
- C. Security testing
- D. Unit testing

Read the question carefully to identify exactly what type of response is required.

There may be more than 1 option, so circle or highlight any correct answers that apply (for example, choose 1 option, tick 2 boxes, or choose all that apply)

Sometimes, but not always, the number of marks available will indicate the number of options to choose.

### Tip 3: elimination

**Choose the correct option**

- A. Option 1
- B. Option 2
- C. Option 3
- D. Option 4

Finally, even if you do not know what the right answer is, you may know what the wrong answers are.

Start to think about the question and rule out different options.

It is worth noting this on the paper so you can refer back to it. Then just by considering the remaining choices and carefully re-reading the question could help to gain the marks.

### Study tips for multiple-choice questions (MCQs)

Take a range of sample questions to explore this process. This will increase your confidence when choosing the correct answer from your own knowledge base.

Write your own MCQs as part of a revision activity. You could do this with peers, where you could each write MCQs to explore existing knowledge, then provide answer choices that could be correct or incorrect.

## Multiple-choice questions (MCQs) in digital exams

### Example multiple-choice question (MCQ)

Here is a multiple-choice question (MCQ) in relation to the psychological impact of inappropriate use of digital technologies.

Which **one** of the following is a potential psychological impact of unsafe or inappropriate use of digital technology?

- A. Disturbed sleep patterns
- B. Eye strain
- C. Gaming addiction
- D. Repetitive strain injury (RSI)

[1 mark]

The question covers assessment objective (AO) 1, which assesses the demonstration of the relevant knowledge, understanding of contexts, concepts, theories and principles in digital. This is a 1-mark question and, therefore, only 1 answer from the options is correct. Now we are going to apply the above tips to this example:

#### Tip 1: question requirements

What is the question asking you to address? This could be done by highlighting key words (highlighted in yellow below) within the question.

Which **one** of the following is a potential **psychological impact** of **unsafe or inappropriate use** of digital technology?

By highlighting the key words in the question, you can clearly see that you are looking for one factor of inappropriate or unsafe use of digital technology and how this can psychologically impact you. Psychological is the key word you are looking for here.

#### Tip 2: try before checking

By following the steps described earlier, try and answer the question before checking the options.

If you have prior knowledge from route core element 2: Culture, you will know that unsafe and inappropriate use can impact individuals either physically or psychologically.

#### Tip 3: elimination

Based on the reasoning above, you can now check the answers and eliminate any answers that are incorrect, such as:

- **option A** (disturbed sleep patterns) is a physical effect
- **option B** (eye strain) is a physical effect
- **option C** (gaming addiction), however, is psychological, and we can see based on the fact that it is an addiction rather than something physical
- **option D** (repetitive strain injury) is a physical effect

Now that the 3 options have been confidently eliminated, the correct answer can be chosen. The correct answer is **option C**.

## Multiple-choice question (MCQ) activity

Now it is your turn.

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

Answer \_\_\_\_\_

**[1 mark]**

## Short-answer questions (SAQs) top tips

Now some tips around short-answer questions (SAQs), it is really important the question is read carefully. Here are a few things to look for:

- remember that SAQs require short answers! The marker is looking for very specific points in the answer and it is a waste of time to add extra information that was not asked for; so, keep answers concise and to the point, focus on hitting all the points you need to and give examples if/where appropriate
- read carefully and think about what you should be showing in your answer – in SAQs you are probably being asked to demonstrate and apply knowledge and understanding
- take note of the important words and phrases in the question and rephrase the question's important terms in your answer – this should help to ensure you stay on topic and include the relevant points
- refer to the first point and use the marks available for each question to inform what you write – 2 marks normally means you should make 2 points, 3 marks you should make 3 points and so on; be aware of and apply this when you are answering this type of question
- practise different command verbs:
  - identify the purpose of...
  - describe the meaning of...
  - explain how these two methodologies could be...
  - discuss the importance of...
  - assess why using...
- does the question have 2 parts or multiple command words, such as describe and explain – or explain and justify?
- know the style of questions you could be asked:
  - explain which methodology would be unsuitable for the situation described
  - discuss the potential impact
  - explain how a technique can be used to resolve an issue
  - describe the actions you would take and the impact they would have
  - circling and highlighting this key information on the exam paper is encouraged and will help ensure the question is correctly addressed

## Short-answer questions (SAQs) in digital exams

### Example short-answer question (SAQ)

Here is a short-answer question (SAQ) in relation to mitigation control methods.

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.

Explain **one** reason why the network security administrator would deploy a honeypot as a mitigation control.

**[2 marks]**

### Tip 1: read the question and identify context

In this question, you are presented with the context of the network security administrator deploying a honeypot. In terms of context, the network security administrator is looking for a mitigation control and has identified a honeypot as one method.

In relation to this, the question asks you to suggest one reason why the network security administrator might have implemented this as a mitigation technique.

### Tip 2: identify the command verb

Identifying the command verb as explain tells you that you must apply your knowledge to a new situation to provide a reasoned explanation.

**Explain** – set out purposes, reasons or make something clear in relation to a particular situation. An explanation requires understanding to be demonstrated.

### Tip 3: use plain and direct language

Applying the final tips from above, it is important to use plain and direct language when answering the question.

Use short succinct statements to answer the question.

### Tip 4: apply your knowledge

Based on the context of the question, the likely reason for implementing a honeypot is to provide additional security protection to the company as it is the setup of a physical server with fake files and information to appear real (**this would achieve 1 mark**).

To achieve the second mark, you must explain the purpose of this such as:

- to 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 (**this would achieve 1 mark**)

These 2 statements together would achieve 2 marks.

These are only examples and other answers will be considered.

## Short-answer question (SAQ) activity

Now it is your turn to apply the above tips to this SAQ (answers in appendix A).

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.

Describe the meaning of a zero-day vulnerability.

**[2 marks]**

**Answer:**

## Extended-response questions (ERQs) top tips

### Extended-response questions (ERQs) written response tips

- read the question carefully and at least twice – what are you being asked to do?
- plan your response (for example, list, mind map – you could then number each of them in the order in which you are going to write about)
- use the command term in your response
- when writing your response keep checking to make sure you are still answering the question
- use well-structured sentences
- use subordinating conjunctions in your writing – using words such as *although*, *because*, *since*, *while* and *however* and words/phrases such as *furthermore*, *moreover*, *on the other hand*, *alternatively*, *by contrast*, *in comparison*, *despite this*, *nevertheless*, *notably*, *importantly* and *in conclusion*; this will help you to *analyse*
- use subject specific terminology
- key factors of evaluative writing – do you need to discuss the pros and cons or identify, and explore the strengths/weaknesses, bring in different/multiple perspectives and be both positive and critical
- if you do not know where to start, use the question to form your answer – this is something you could practise as a revision activity
- remember that for written answers, there are marks for the quality of the written work so apply careful proofreading and check for any mistakes

### Common problems/issues

- apostrophes should only be used for omissions or to show possession
- plural nouns do not always need an apostrophe
- proper nouns need capital letters
- complex sentences need commas (in the correct place) to separate the main and subordinate clauses
- exploring formality, language and tone of writing – especially to ensure clarity and suitability for audience/purpose
- commonly misspelt words in the industry/sector, including homophones
- using English spellings rather than American English
- writing as we speak (for example, should of instead of should have)
- the suitability of contracted words in academic writing – keep it formal
- using punctuation to effectively clarify meaning, including colons, semi colons, hyphens (also using the Oxford comma)

If you are unfamiliar with any of the above terms, be sure to speak to your tutor!

## Tips for extended-response questions (ERQs) key focus areas

### Tip 1: practise different command verbs

Extended-response questions (ERQs) are often asking for similar information, with 3 common examples being:

1. The comparison of 2 processes, systems, regulations, equipment for a given circumstance, with any response including justifications for the choices made
2. Evaluating the use or application of a process, system, regulation in each circumstance, again with those outcomes being justified
3. Finally, it could be about what evaluating the impact a change or process might have on an organisation

It is good to have as much practice as you can with a range of extended-response examples. Try to think of practice questions for the content areas, following a similar structure to those examples and using the higher demand command verbs.

Higher demand command verbs:

- **assess** the suitability of...
- **evaluate** the use of...
- **discuss** the key considerations of...
- **justify** the case for...

### Tip 2: what to look for

The first thing is to check what the question is asking to be addressed, as there can be some examples that could easily be missed, and a 3-step approach might be useful.

#### Step 1: identify the topic/content area that is being addressed

Step 1 is to identify the content areas that the questions are addressing so relevant knowledge can be used, circling and highlighting on the paper is encouraged.

#### Step 2: identify the circumstances given in the question

The next step is to identify the circumstances – so if it is a comparison then what are the circumstances for this comparison? For example, comparing uses, comparing threats, comparing data.

#### Step 3: check if there is a narrowed focus that the response should be refined to

The final step is to check if there is a particular focus that is being asked for. For example, if threats were the circumstance of the question, then check to see if there is a particular focus, such as technical or non-technical threats and mitigation techniques used to protect against this.

If there is a narrowed focus, then the answer should revolve around that focus only.

### Tip 3: planning the answer

Now that the question requirements have been determined, the answer can now be planned.

See [framework for extended-response questions \(ERQs\)](#) section of this document for more details.



## Tip 4: the importance of quality of written communication (QWC)

The last aspect is composing the final answer, many ERQs have 3 marks available for the quality of written communication (QWC).

These marks are independent to the knowledge marks, so it is possible to have an entirely incorrect response that will still gain 3 marks if it is well written.

There are 3 aspects to the QWC marks:

- firstly, the answer should have a good flow, an orderly structure (use paragraphs), and use unambiguous, plain English
- secondly, spelling, punctuation and grammar (SPaG) are also assessed, (for example, using the correct subject-verb agreement and tense, and the use of commas, full stops and capital letters)
- thirdly, the key terms, referring to the question, are there any key terms that the answer should include; any additional key terms from the content area that were noted during the planning; and does the use of these key terms enhance the clarity of the sentence?

See [quality of written communication \(QWC\)](#) section of this document for more details.

## Extended-response questions (ERQs) in digital exams

### Example extended-response question (ERQ)

Here is an extended-response question (ERQ) in relation to the impact of digitalisation on an organisation.

Amelia runs a not-for-profit library that services the local community. Amelia is worried about the prospects of the library. The library has not embraced digitalisation and they still have none of the following:

- online way to renew books
- online e-book lending library
- out-of-hours self-return system

The library also lags behind other community organisations as they only have 3 PCs available for the local community to use and these will only allow browsing and emails.

Amelia has become concerned that the library is not doing enough to support the local community's access to digital products and recently carried out a survey on what stakeholders would like to see improved.

The survey found that:

- many members struggle to commute to the library in winter
- younger respondents view services offered by the library as 'old fashioned'

Evaluate how digitalisation could be used to offer better access to digital products **and** the impact this could have on the survival of the library.

**[12 marks, plus 3 marks for QWC]**

In this question, a not-for-profit library has not embraced digitalisation.

They still do not have any of the following services:

- online way to renew books
- online e-book lending library
- out-of-hours self-return system

The question continues to say that they only have 3 PCs available for the local community to use and these will only allow browsing and emails.

They have completed a stakeholder survey and identified:

- many members struggle to commute to the library in winter
- younger respondents view services offered by the library as 'old fashioned'

The question then asks you to use knowledge of digitalisation to evaluate how this could be used to allow the library to offer better access to digital products and the impact this could have in helping the library to survive.

This is a complex context with many points to consider and therefore it is important to follow the steps outlined earlier.

## Tip 1: what to look for

Following the 3 steps highlighted in the [extended-response questions \(ERQ\) top tips](#) section, apply these to the below:

### Step 1: identify the topic/content area that is being addressed

Firstly, we need to identify the topic and content area that is being addressed which is digitalisation.

### Step 2: identify the circumstances given in the question

Secondly, the circumstances. We know the library have not embraced digitalisation and do not have any digital services, so members need to access the library in working hours to access, and return, physical books. We also know that there is limited PC access, and these offer limited services

### Step 3: check if there is a narrowed focus that the response should be refined to

Finally, we can see through a stakeholder survey that members are struggling to commute to the library in winter and that the younger demographic find the current services 'old fashioned'.

## Tip 2: start with key facts

Using the steps from above we now need to plan and formulate an extended answer.

Firstly, it is important to identify the facts that are going to be applied in this question. As mentioned previously, these facts will apply to digitalisation.

Some examples of facts of how digitalisation could be used based on the specifications include:

- brand differentiation
- virtualisation/cloud services
- digital innovation
- processes and business models
- wider access to
- contextualising customer behaviour
- open standards

## Tip 3: application of the key points

Next, we must consider the application of these points.

So how does the knowledge covered, apply to this situation?

Some examples of how this applies to the question taken from the mark scheme are:

- offering access to specialist software to members
- offering access to a free e-book service so they can borrow books at any time
- offering software that allows members to edit photographs, videos, or music
- an online system that allows members to look at the available books in the library from the comfort of their own home
- the library could team up with other local groups to provide digital skills training

- offering digital services would also open the possibility of having access to a wider customer base and increase the chances of the business surviving

### Tip 4: be clear on the outcomes

Finally, we need to be clear on the outcomes of all the information that has been provided.

In this example, there needs to be clear evaluation of the best option.

Some examples of evaluation taken from the mark scheme for this question are:

- offering access to specialist software to members would help to appeal to a younger audience by including software that is more appealing to them such as photo and video editing
- offering access to free e-books would be more popular with a younger demographic and would help in winter when members are struggling to physically access the library
- teaming up with local businesses to offer digital skills training will help build their community. This could be training in online banking or web services for example

### Tip 5: proofread

Having used those steps to formulate a coherent answer, it is important to then proofread the answer, helping to ensure no marks will be lost for poor QWC.

When proofreading it is important to check:

- the answer is well structured, using keywords from the question and plain direct language
- that punctuation and grammar has been used effectively (for example, are full stops and commas in the right places?)
- that a range of appropriate technical terms have been used effectively – in this case, terms such as digitalisation and digital services

## Extended-response question (ERQ) activity

Now it is your turn to apply the tips to the below ERQ example (answers in appendix A).

A company has recently suffered massive data loss, which an internal investigation has shown to be the 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.

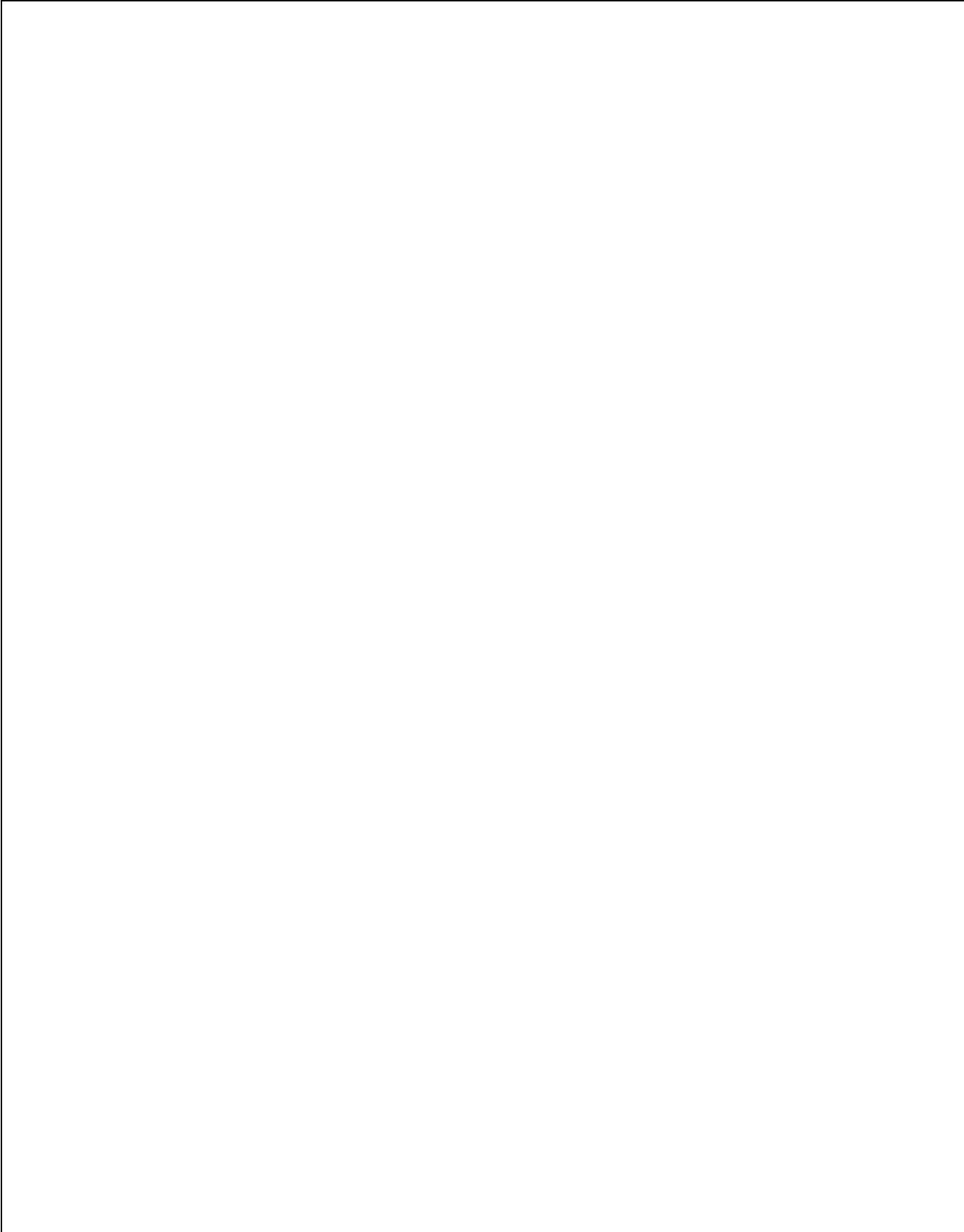
Additionally, a recently dismissed employee has also deleted all the files on one of the shared drives prior to leaving the company. Unfortunately, the company does not have a recent back up of these files.

The company is now in the process of creating a threat a vulnerability strategy to prevent things like this from 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]**

**Answer:**



## Framework for extended-response questions (ERQs)

The extended-response questions (ERQs) often have 3 common formats:

1. A comparison of something for a given scenario or circumstance
2. An evaluation of the impact of something for a given circumstance
3. Changing or updating something for a given circumstance

In many respects, you can consider most ERQs to be a pros and cons list, with you making the final judgement as to which approach is best with your justifications.

From reading the question you should try to identify:

- the topic/subject area the question is asking about
- the conditions or specific context for this question
- the question requirements, such as a comparison of 2 techniques for a given purpose

Once the above have been identified, then you should consider how you plan your answer, as the ERQs assess all 3 of the assessment objectives (AOs). Here are some of the key themes that you will need to address in the 3 AOs below.

- 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

These questions can also have marks available for the quality of written communication (QWC), so having a coherent logical structure and using appropriate punctuation and grammar will be important too.

The question will state if there are marks available for the QWC, and it is worth checking for this to ensure you do not spend too much time focusing on the structure and grammar of your answer if there are not QWC marks available.

To help with this, you may want to begin with laying out the key information to include under different headings like the example below, which should help with planning your final response.

Facts	Application	Outcomes
What are the properties, characteristics, features?	What happens to those properties, characteristics, features in the given situation?	What decisions/conclusions have been drawn with justifications?

Here is a general example of how this approach can be applied to an ERQ.

An organisation wants to be able to condition. They are considering adopting either:

- **technique 1**
- **technique 2**

Evaluate the suitability of each approach.

Facts	Application	Outcomes
<p><b>Technique 1</b> facts, such as:</p> <ul style="list-style-type: none"> <li>• properties</li> <li>• characteristics</li> <li>• features</li> <li>• equipment</li> <li>• regulation</li> </ul> <p><b>Technique 2</b> facts, such as:</p> <ul style="list-style-type: none"> <li>• properties</li> <li>• characteristics</li> <li>• features</li> <li>• equipment</li> <li>• regulation</li> </ul>	<p>How does the <b>condition affect technique 1</b> or vice versa, such as:</p> <ul style="list-style-type: none"> <li>• will the properties have an impact?</li> <li>• are the features compatible for this condition?</li> <li>• are there any regulatory considerations for this condition?</li> <li>• are there any benefits and risks from the condition given?</li> </ul> <p>How does the <b>condition affect technique 2</b> or vice versa, such as:</p> <ul style="list-style-type: none"> <li>• will the properties have an impact?</li> <li>• are the features compatible for this condition?</li> <li>• are there any regulatory considerations for this condition?</li> <li>• are there any benefits and risks from the condition given?</li> </ul>	<p>Outline your final decision with justifications given.</p> <p>You may need to include the limitations of your conclusions too. For example, if there are aspects of the condition that your solution will not fully address, include your justifications as to why you believe it is still the best approach.</p> <p>Justifications could include:</p> <ul style="list-style-type: none"> <li>• the technique that meets most/all the conditions given</li> <li>• the technique that carries the lowest risk for the condition given</li> <li>• the technique that provides greater flexibility/adaptability for the condition given</li> <li>• the technique that is more reliable and 'robust' for the condition given</li> <li>• the technique that will have the biggest reach or impact for the condition given</li> <li>• a combination of both techniques with justifications given</li> </ul>

By having an approach like this you will be able to demonstrate all 3 of the AOs, and all that would remain is to structure this information into a logical coherent answer. You should not be overly concerned if you do not have time to compose that final answer, as the maximum number of marks available for QWC is 3 marks. The examiner will also mark the table of information you have produced even if there is no structured response written. Although you will not receive the 3 marks for the QWC, it will allow for a range of marks to be achieved. For example, in a 15-mark question where 3 marks are for QWC the table will allow you to achieve up to 12 marks. Although, achieving the full 12 marks without good flow and structure in your answer would be difficult.

Remember; there are 3 aspects to the QWC marks:

- firstly, the answer should have a good flow, an orderly structure (for example, use paragraphs) and use clear and unambiguous plain English
- secondly, spelling, punctuation and grammar (SPaG) are also assessed (including, correct subject-verb agreements and tense, and the correct use of commas, full stops, capital letters)



- thirdly, the key terms, referring to the question – are there any key terms that the answer should include, are there any additional key terms from the content area that were noted during the planning, and does the use of these key terms enhance the clarity of the sentence?

For the above example, the logical structure of flow chosen might be:

- summary of technique 1 and how it applies to the condition
- summary of technique 2 and how it applies to the condition
- compare the summaries of techniques 1 and 2 for the condition, such as their similarities and differences
- use that comparison to make the final judgement, with reasons and justifications for your conclusion

Once you have your structure or 'flow' decided, you should ensure you pay close attention to your spelling and grammar, and use the key terms and phrases given in the question.

# Identifying the relevant knowledge and applying correctly to context

## General tips

- read the question carefully:
  - read it a first time without doing anything
  - read it a second time highlighting key words or phrases
- find the command verb:
  - write in your notes, your understanding of the command words so you fully understand how you are going to apply the knowledge to the context
  - refer to the [command verb document](#), follow the link to the definitions of the command words to make sure you understand what you need to do
- write in your notes a definition of the highlighted key words/phrases – these words will stand out as key knowledge areas you have learned during your qualification:
  - by writing down the definitions you could gain ‘easy knowledge’ marks
  - it can also result in a more focused response
  - link your descriptions to key areas of the context in the question
  - remember to use these key words/phrases in your answer as this shows true understanding of how your answer links to the context
- often with application questions you may have to assess/evaluate:
  - you have identified and defined your key knowledge areas
  - you need to acknowledge the strengths and weaknesses of each area
  - whether this knowledge area has pros and cons in itself and has a negative or positive effect on the context
- in extended-response question (ERQ) you may need to make a supported judgement:
  - you weigh up your evaluation points and come to a decision as to which has the most important impact on the context, with strong reasoning behind your answer then link those judgements to how they will impact the given context

## Applying knowledge to contexts in digital

Let us use the example from the ERQ activity.

Amelia runs a not-for-profit library that services the local community. Amelia is worried about the prospects of the library. The library has not embraced digitalisation and they still have none of the following:

- online way to renew books
- online e-book lending library
- out-of-hours self-return system

The library also lags behind other community organisations as they only have 3 PCs available for the local community to use and these will only allow browsing and emails.

Amelia has become concerned that the library is not doing enough to support the local community's access to digital products and recently carried out a survey on what stakeholders would like to see improved.

The survey found that:

- many members struggle to commute to the library in winter
- younger respondents view services offered by the library as 'old fashioned'

Evaluate how digitalisation could be used to offer better access to digital products and the impact this could have on the survival of the library.

### Step 1

Read the question twice. It can be helpful to highlight key words/phrases.

### Step 2

Now you need to define the command words (highlighted above in yellow), so you know what you need to do to each component of the key word/phrase.

### Step 3

Now you need to describe the key words/phrases (highlighted above in green) and apply it to the context (highlighted above in blue) of the question, here is one from each knowledge area to get you started, such as:

#### Digitalisation not embraced by the library

- online e-book lending library
  - the library could identify books that are available in digital format
  - the library could implement a system that would allow members to access, download and return digital books

#### Things identified by the survey

- many members struggle to commute to the library in winter
  - description – as many members struggle to commute in winter this limits the amount of services offered by the library and could result in the library being forced to close

- apply to context –implementing an online system would allow members to access e-books from the comfort of their home; this in turn would increase their usage and also allow for members to join the library from further afield, resulting in an increase in memberships

#### Step 4

Now you need to evaluate each knowledge area identified in step 3. Here is an evaluation linking to the context to get you started:

- knowledge areas – digitalisation:
  - wider access to
  - contextualising customer behaviour
- evaluation – digitalisation will have a positive effect of increasing book usage and extending library membership

#### Step 5

Time for a judgement – here is a judgement based on the implementation of an online book loaning system:

- one way to improve this situation is to offer access to a free e-book service so members can borrow books at any time:
  - if e-books are not available members could then request these books to be delivered to them if they cannot access the library
  - offering digital services like this would also open the possibility of having access to a wider customer base
  - the library would not need to limit itself to members within the local areas as some members could be happy with access only to the digital services offered
  - this could potentially lead to a huge increase in membership to the library, which would help secure its future

## Appendix A: answers to activities

### English foundations activities answers

#### Apostrophes

Add the apostrophe	Possession/Omission	Singular or plural?
My dad's name is Amir.	Possession	Singular
Paul's dog is very cute.	Possession	Singular
I read the research its apparently Harman's Theory of aging.	Omission and possession	Singular
Antonio's grandma speaks English, Italian and Arabic.	Possession	Singular
My sister's friend is coming to visit in an hour.	Possession	Singular
I'm not sure but I think the physiotherapists are meeting next week.	Omission	Plural
The hospital's strategy.	Possession	Singular
The Children's Hospital	Possession	Plural
He's the friend I spend the most time with.	Omission	Singular
That's David's pen, he must have forgotten it.	Omission and possession	Singular
The swimmer's families cheered them on.	Possession	Plural

#### It's or its?

- The dog had eaten all its dinner.
- It's been a fantastic day, she exclaimed.
- The dog licked its paw.
- Let me know when it's ready.

## I or me?

- Who else will be coming to the cinema with John and me?
- The children and I were sitting on the settee.

## Whose or who's?

- Whose shoes are these?
- Who's left their shoes in the doorway again?
- I do not know whose number this is.
- Do you know who's singing this song?

## Accept or except?

- I accept your apology.
- No dogs allowed except guide dogs.
- Everyone except the nurses need to attend.
- They do not accept credit cards in the shop.

## Practice or practise?

- I am going to visit the new medical practice.
- I must practise my breathing techniques.
- On a Friday, the children practise handwriting.
- The injection is given at your doctors practice.

## Affect or effect?

- Does the medication affect the symptoms of the patient?
- The new medication has no effect on his glucose.

## Advise or advice?

- My advice would be to visit your GP.
- I advise that you stop smoking.
- I asked the doctor for some advice.
- Scientists advise that you wear a mask.

## Allowed or aloud?

- You are not allowed in the restricted area.
- The process of learning clinical reasoning may be assisted by using think aloud.
- The patient was allowed to go home.
- She read the instructions aloud.

## Word meaning

Word	Meaning	Possible example
Past	Gone in time/no longer	I often think of past holidays.
Passed	To indicate movement	Anita passed the ball to Umar.
Advice	A noun that means a suggestion about what you should do (a guide to action)	I need to get some advice about my car.
Advise	A verb that means to suggest what should be done - to recommend/give info to someone (verb)	I advise you to stay at home as the weather is poor.
Lose	Fail to win or holding on to something	I aim to lose weight.
Loose	Adjective: not tight, not attached or Verb: to free something or someone.	The lead is loose on the dog.  My dog is running loose as it escaped.
Affect	To influence something	Poverty can affect anyone.
Effect	The result – it represents the end and a good way to remember is both start with an 'e'.	The experience has had a good effect on him.
Infer	Come to a conclusion, make an educated guess.	'I do not know how much you can infer from his data'.
Imply	To suggest, hint at.	She did not mean to imply that he was lying.

## Tenses

1. Future
2. Present
3. Present
4. Past
5. Present
6. Past
7. Future
8. Present

## Sentences

1. Complex
2. Simple
3. Compound
4. Compound
5. Complex
6. Simple

## Multiple-choice question (MCQ) in digital activity answer

Answer B. Performance testing.

## Short-answer question (SAQ) in digital activity answer

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)

Accept any other suitable response

## Extended-response question (ERQ) in digital activity answer

AO1 = 4 marks

AO2 = 4 marks

AO3 = 4 marks

Quality of written communication (QWC) = 3 marks

### Indicative content

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.

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 resulted 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 damaged 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 a 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 company's 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.

## Notes

Use this space to add any of your own notes or summaries.

A large, empty rectangular box with a thin black border, intended for students to write their own notes or summaries. The box occupies most of the page's vertical space below the introductory text.



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