

**SECOND  
EDITION**

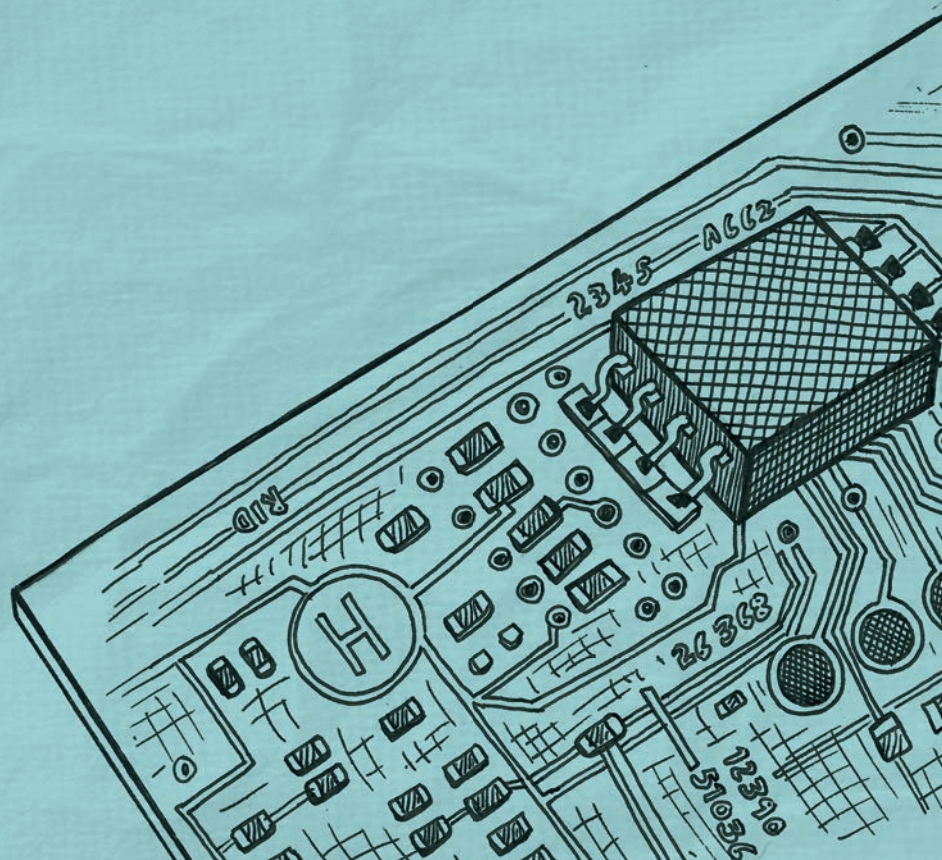
endorsed for  
**BTEC**

**REVISE BTEC NATIONAL**

**Information**

**Technology**

**REVISION  
WORKBOOK**





# REVISE BTEC NATIONAL

## Information Technology

### UNITS 1 AND 2

# REVISION WORKBOOK

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# Introduction

This Workbook has been designed to help you revise the skills you may need for the externally assessed units of your course. Remember that you won't necessarily be studying all the units included here – it will depend on the qualification you are taking.

BTEC National Qualification	Externally assessed units
Certificate	2 Creating Systems to Manage Information
Extended Certificate and Foundation Diploma	1 Information Technology Systems 2 Creating Systems to Manage Information
Diploma	1 Information Technology Systems 2 Creating Systems to Manage Information 11 Cyber Security and Incident Management*
Extended Diploma	1 Information Technology Systems 2 Creating Systems to Manage Information 11 Cyber Security and Incident Management* 14 IT Service Delivery*

\*This book does not cover externally assessed Units 11 and 14 required for the Diploma and Extended Diploma.

## Your Workbook

Each unit in this Workbook contains either one or two sets of revision questions or revision tasks, to help you **revise the skills** you may need in your assessment. The selected content, outcomes, questions and answers used in each unit are provided to help you to revise content and ways of applying your skills. Ask your tutor or check the Pearson website for the most up-to-date **Sample Assessment Material** and **Mark Schemes** to get an indication of the structure of your actual assessment and what this requires of you. The detail of the actual assessment may change so always make sure you are up to date.

This Workbook will often include one or more useful features that explain or break down longer questions or tasks. Remember that these features won't appear in your actual assessment!

Grey boxes like this contain **hints and tips** about ways that you might complete a task, interpret a brief, understand a concept or structure your responses.

### Guided

This icon will appear next to an **example partial answer** to a revision question or task. You should read the partial answer carefully, then complete it in your own words.

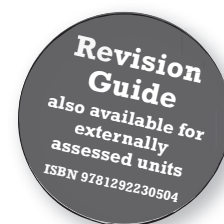


This is a revision activity. It will help you understand some of the skills needed to complete the revision task or question.



These boxes will tell you where you can find more help in Pearson's BTEC National Revision Guide. Visit [www.pearsonschools.co.uk/revise](http://www.pearsonschools.co.uk/revise) for more information.

There is often space on the pages for you to write in. However, if you are carrying out research and making ongoing notes, you may want to use separate paper. Similarly, some units will be assessed through submission of digital files, or on screen, rather than on paper. Ask your tutor or check the Pearson website for the most up-to-date details.



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### A small bit of small print

Pearson publishes Sample Assessment Material and the Specification on its website. This is the official content and this book should be used in conjunction with it. The questions in this book have been written to help you practise the knowledge and skills you will require for your assessment. Remember: the real assessment may not look like this.

# Unit 1: Information Technology Systems

## Your exam

Unit 1 will be assessed through an exam, which will be set by Pearson. You will need to use your understanding of the role of computer systems and the implications of their use in personal and professional situations. You then respond to questions that require short and long answers.

## Your Revision Workbook

This Workbook is designed to **revise skills** that might be needed in your assessed task. The details of your actual assessed task may change from year to year so always make sure you are up to date. Ask your tutor or check the **Pearson website** for the most up-to-date **Sample Assessment Material** to get an idea of the structure of your assessed task and what this requires of you.

To support your revision, this Workbook contains revision questions to help you to practise the relevant exam skills.

## Questions

Your response to the questions will help you to revise:

- digital devices in IT systems
- transmitting data
- operating online
- protecting data and information
- the impact of IT systems on individuals and organisations
- issues resulting from the use of IT systems.

Just as in your actual exam, some questions will start with a **case study** relating to an individual or organisation. For these questions, make sure you focus **your answers** on the needs of the individual or organisation described in the case study..

**Links**

This Workbook contains two sets of revision questions starting on pages 2 and 13. See the introduction on page iii for more information on features included to help you revise.

# Revision test 1

Guided

1


Excelsior IT Support are a contract IT support company. Their employees need to travel to different offices regularly in order to complete repairs and they often do not return to Excelsior IT Support’s head office all day. When the technicians take on a job they need to:

- look up the location of the company they need to visit
- look up the details of the problem
- update the status of the job once the visit has been completed.

(a) Explain two features of mobile devices that would make them suitable for use by Excelsior IT Support’s technicians for tracking their jobs. 4 marks

Firstly, you need to identify each feature and then expand on each one appropriately, in this case explaining why that feature would be useful for Excelsior IT Support. The features have been given in these example answers – you need to add the expansion for each.

- Mobile devices, such as smartphones and tablets can use mobile internet connections, which .....  
.....  
.....
- Mobile devices are also extremely portable, which .....  
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 **Links**

Revise the features of different digital devices by looking at pages 1 and 2 of Unit 1 in the Revision Guide.

(b) Excelsior IT Support has also considered investing in personal laptop computers for their technicians as an alternative to mobile devices.

Discuss the features of laptops that might make them more suitable for the technicians.

The question asks you to 'Discuss the features of laptops...'. This discussion requires you to identify a good range of features and give appropriate reasons for their importance, in the context of the question.

6 marks

- Laptops are portable computing devices which .....  
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- [illegible]

- Evaluate the impact on Excelsior IT Support of the legal, moral and ethical issues that relate to the use of this data in this way.

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Continue by covering Excelsior's moral obligations regarding the transmission and storage of customers' personal information, such as protecting customer privacy and use of personal data only for clearly defined purposes. You might also consider ethical issues, such as the environmental impact of using portable devices.

Make sure you include a conclusion, summing up the extent of the impact of the legal, moral and ethical issues on Excelsior IT.

 **Links**

You can revise legal issues on pages 27 and 38 of Unit 1 in the Revision Guide. Look at pages 36 and 37 to revise moral and ethical issues.

Total for Revision Question 1 = 22 marks



Guided

2

A2B Taxis are a small taxi company based in Reading, Berkshire.

In order to expand their business, A2B Taxis are researching new ways of increasing awareness of their business and attracting customers.

They are looking at using IT systems and the internet in order to communicate with customers and raise brand awareness.

In particular, they are considering the use of online communities but are unsure about what benefits these will bring them.

They would also like to investigate how they could use technology to:

- help drivers work more efficiently, by navigating and allocating jobs
- assist dispatchers to deploy drivers in an effective manner
- be more accessible to customers.

- (a) Describe three ways that A2B Taxis could use online communities in order to communicate with their customers.

6 marks

You need to identify and describe each online communication method and expand on it by commenting on how it could be used by A2B Taxis to communicate with their customers.



Fill in the gaps in this example answer using these words:

blogs forums social media network up-to-date feedback service advertise

- ..... websites allow businesses to create and share information and to ..... One example is the use of business pages, which would allow A2B Taxis to ..... deals directly to customers.
- ..... are regularly updated websites that are often used by businesses to share ..... news and information. A2B Taxis could use this method to inform customers of improvements and innovations in the ..... they offer.
- ..... are online discussion sites which could be used by the business to gain customer ..... on their services.



Links

You can revise uses of online communities on page 23 of Unit 1 in the Revision Guide.

- (b) The management at A2B Taxis have some concerns about the potential negative impact of online communities on their business, but they are also aware of the potential benefits.

Analyse the impact that online communities might have on A2B Taxis.

10 marks

Break down this question into parts. What will have a positive impact? Why will it have a positive impact? How does that relate to A2B Taxis? Then look at the negative impacts the same way.

One way that online communities might have a positive impact on A2B Taxis is in helping them to understand customer needs. This is achieved as online communities allow .....

Explain how online communities can help A2B Taxis understand their customers' needs. Then go on to discuss two more potentially positive implications for A2B Taxis.

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 **Links**

You can revise the implications of business uses of online communities on page 24 of Unit 1 in the Revision Guide.

A negative impact on A2B Taxis of using online communities could be the costs involved. Costs are incurred because

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Explain why costs are involved in the use of online communities. Then go on to cover a couple more potentially negative impacts on the business.

- (c) The management at A2B Taxis have also been considering how they could use digital devices to improve the efficiency of their business.

Discuss how digital devices could improve the efficiency of A2B Taxis.

10 marks

You need to consider a range of devices here, not just the most obvious ones (e.g. smartphones). Think about those that will be of most benefit to a taxi company.

In-car navigation systems have become a major part of the service provided by taxi companies like A2B Taxis because .....

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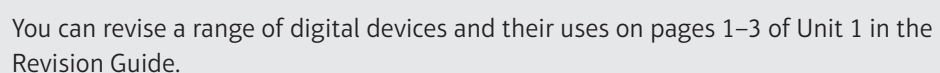
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Communication devices used for internet access would also be of benefit for .....



7

Guided

3 Benjamin runs a small finance company that employs four members of staff, in addition to Benjamin himself.  
Each member of staff has their own standalone PC, which stores the files they work on locally. Staff members often need to share documents, which they do either by emailing them using the business's internet connection, or by transferring them using a USB memory stick.  
The documents they share often contain sensitive personal and financial information about the customers who invest with them.

- (a) Analyse the benefits of using cloud storage facilities for the finance company's staff to share documents.

6 marks

There are a wide variety of benefits to cloud storage services to choose from. Here are some suggestions. Expand on these points by clearly explaining how these are benefits to Benjamin's finance company.

Cloud storage services would allow the finance company to share access to folders .....

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Employees could access the files while away from the office computers .....

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Cloud storage would make it easier for employees to work on the same documents .....

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 **Links** You can revise cloud storage on pages 21 and 22 of Unit 1 in the Revision Guide.

- (b) Benjamin has heard that a possible alternative to using cloud computing for sharing files would be a local area network. He has also heard that a LAN has other uses.

Two uses have been identified in the answer (see page 9). Finish them by explaining why each use is helpful to Benjamin's business.

Explain two uses, other than sharing files, of using a LAN in Benjamin's business.

4 marks

 **Links** You can revise security techniques on page 26 of Unit 1 in the Revision Guide.



A local area network can be used to share a printer .....

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A local area network could provide security by .....

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- (c) Benjamin is also considering using cloud computing software. However, he is concerned about the potential drawbacks of using these services.

Analyse whether Benjamin should start using cloud computing software in his business.

10 marks

Make sure you cover both the benefits and drawbacks of cloud computing software (note that you need to address cloud software, not storage). Include a range and make sure you relate each back to the finance company.

Cloud computing software could benefit Benjamin's business as it will help .....

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Some disadvantages of cloud computing software for Benjamin could be .....

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**Links**

You can revise cloud computing software on pages 21 and 22 of Unit 1 in the Revision Guide.

Total for Revision Question 3 = 20 marks

Guided

4

Jessica wants to start making a video series in which she will review newly released technology devices. She wants to share her videos online using well-known video-sharing websites. Jessica would like her videos to be in high definition, even though she is aware that sharing large video files online can be difficult as they can take a long time to download.

(a) Explain how bandwidth and latency affect streaming video over the internet.

4 marks

Complete the definitions of bandwidth and latency, and then complete the explanation of how each of these affects video streaming. Choose from these sentence endings:

- a) the time delay for a data packet to transfer to its destination.
- b) to transfer the large amounts of data in a high definition video file.
- c) to avoid buffering (ensure that video reaches your computer as fast as it is playing).
- d) the rate of data transfer over a network.

• Bandwidth is .....

.....

High bandwidth is required .....

.....

• Latency is .....

.....

Low latency, or lack of latency, is preferred .....

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**Links**

To revise data transmission issues, turn to page 20 of Unit 1 in the Revision Guide.

- (b) Jessica knows that the file format used for videos can affect the file size and suitability for sharing online.

Analyse the impact of different file types for streaming video content.

6 marks

For this question you should look at a couple of different video file formats and explain both the benefits and the drawbacks of that format for Jessica's needs.

One file format that is commonly used for videos is the .avi format. This would potentially be of use

to Jessica as .....

.....

The drawback for Jessica of this file type is .....

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Another file format for videos is the .mp4 format. This would be of use to Jessica as .....

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The drawback for Jessica of using this file type is .....

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**Links**

To revise file formats, look at page 11 of Unit 1 in the Revision Guide.

- (c) To reduce the file size of her videos, Jessica is thinking of using compression. However, she is concerned with how this might affect the quality of her videos.

Assess the impact of different compression tools and techniques on the videos.

**12 marks**

The command word here is 'assess'. So for this question you should compare the pros and cons of a range of compression tools and techniques.

Compression is used to reduce the amount of data required to store a file. By compressing the

video files Jessica will .....

.....

There are two types of compression that are used. One is lossy, the other is lossless. Lossy

compression is .....

.....

An extremely important tool for compressing video files for transmitting over a network is a *codec*.

This is used to .....

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## Links

Revise compression issues by turning to pages 11 and 20 of Unit 1 of the Revision Guide.

Total for Revision Question 4 = 22 marks

**END OF REVISION TEST**      **TOTAL FOR TEST = 90 MARKS**



## Revision test 2

- 1 Lloyd works for a game development company as a game artist. He performs a variety of tasks including:

- creating high-quality 3D models of landscapes and player characters
- creating 2D textures for game models
- user interface design for game menus, etc.

- (a) Lloyd needs to save his 2D graphic files in a format that can be used in the games.

Explain two features of the PNG format that would make it appropriate for this use.

You need to identify two features and explain why each feature is useful for Lloyd's game art.

4 marks

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**Links**

To revise file formats, turn to page 11 of Unit 1 in the Revision Guide.

- (b) Lloyd wants to purchase a new PC to produce his artwork as the one he is using is quite old and it is running slowly.

The table shows the specifications of two computers Lloyd is considering.

	Computer 1	Computer 2
Processor	2.7 GHz Quad Core	3.5 GHz Dual Core
RAM	8 GB	4 GB
Storage	1 TB Hard Disk Drive	250 GB Solid State Drive
Graphics	4 GB Dedicated Graphics	Integrated Graphics

You can approach this question by looking at each of the categories in turn and comparing which is more suitable. You should provide a recommendation for which system would be better for Lloyd.

Assess the suitability of these two specifications for Lloyd's needs.

8 marks

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 **Links**

To revise choosing an IT system, turn to page 14 of Unit 1 of the Revision Guide.

- (c) Lloyd is thinking of using cloud storage for saving his graphics files.

Discuss the features and implications of using cloud storage for Lloyd.

10 marks

As well as exploring how cloud storage can help Lloyd, you also need to explain ways in which it might be a hindrance. Some things to consider could be sharing files and security issues.

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**Links**

Revise cloud storage by looking at pages 21–22 of Unit 1 of the Revision Guide.

Total for Revision Question 1 = 22 marks

2 Harold owns a chain of four fast food restaurants.  
He employs a manager as well as several till workers at each restaurant.  
The manager at each restaurant is responsible for ordering stock, but Harold keeps the accounts for the business himself on his home desktop PC.  
To help improve efficiency, Harold is looking into implementing new self-service food ordering EPOS systems.

(a) Describe two input devices that might be used on a self-service EPOS till.

4 marks

Think of two different input devices that are commonly used at the checkout in shops. To help you, think back to when you've used a self-service check-out or food ordering point.

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 **Links**

You can revise relevant input devices on pages 2 and 4 of Unit 1 of the Revision Guide.



- (b) The new self-service EPOS till system requires a menu-based user interface. The first screen of the user interface should allow the customers to:

- choose from a range of food categories
- choose to go to payment.

Don't just draw a simple menu. Consider prompts to help the user enter the data, and don't forget accessibility requirements. For example, what options could you add to help people with a visual impairment use the interface?

Draw a suitable user interface for this first screen in the space provided.

6 marks



Revise user interfaces on page 9 of Unit 1 of the Revision Guide.

- Discuss a range of benefits of primary data collection and compare each of them to secondary sources to show why primary sources are better for Harold's needs. Don't worry about including the benefits of secondary data collection – that's not needed here.

10 marks

[illegible]

You can revise primary data collection on page 32 of Unit 1 in the Revision Guide.

18

She has a desk and computer at the company's head office, but she rarely goes there. She works mainly from home or during train journeys as she travels between stores that stock the company's drinks.

While travelling, she takes notes by hand which she enters on the desktop PC when she returns home.

- 4 marks

Think about how Aaliyah could access the files and software on the computer at the head office while working from home. Also consider how to ensure data can be transferred securely between her home and the office.

and the office.



**Links** To revise technologies used in remote working, look at page 22 of Unit 1 of the Revision Guide.

- Discuss the features of a mobile computing device, such as a tablet, that will make it suitable for Aaliyah's needs.

6 marks

Always refer back to the case study. Remember that Aaliya will be using her mobile computing device to use productivity software while travelling. What makes such a device appropriate for her needs? This question asks you to 'discuss'. You need to begin by explaining a wide range of features, continuing on to consider how they will be suitable for Aaliyah and how she might use the device.

to consider how they will be suitable for Aaliyah and how she might use the device.

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(c) Aaliyah's manager has told her that the company is considering setting up a fan page on social media to promote the company and encourage direct communication, in order to strengthen their brands.

12 marks

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