

# Pearson Level 3 Alternative Academic Qualification BTEC National in Information Technology (Extended Certificate)

Unit 1: Information Technology Systems

Sample Assessment Materials

First teaching September 2025

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Issue 1

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# Contents

Exam Paper	1
Sample mark grid	21



Please check the examination details below before entering your candidate information

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**Pearson Level 3 Alternative Academic Qualification BTEC National**

**Sample assessment material**

Time 2 hours

Paper reference **XXXXXX/XX**

**Information Technology**  
**UNIT 1: Information Technology Systems**

**You do not need any other materials.**

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

## Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

## Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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## SECTION A

Read the following scenario carefully. The questions in this section relate to this scenario.

Answer ALL questions. Write your answers in the spaces provided.

- 1 A mobile phone shop has shops where customers can buy phones and also have a website where customers can order phones online.

(a) The mobile phone shop collects customer data for online orders.

Give **two** external threats to unsecured data.

(2)

- 1 .....
- 2 .....

(b) Customers need to sign into their account using a password.

Describe the process used by a system to authenticate passwords.

(4)

- .....
- .....
- .....
- .....
- .....
- .....
- .....
- .....

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(c) Customers will be required to enter details when creating an account with the mobile phone shop.

Explain **two** validation methods the mobile phone shop could use in their data entry form to ensure data is accurate.

(4)

1 .....

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2 .....

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(d) Staff who work remotely to provide customer service and monitor orders online use a VPN to ensure data is kept secure.

Explain **one** way a VPN ensures any data accessed remotely is secure during transmission.

(2)

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- (e) The staff use emails to communicate with colleagues and customers.

Simple Mail Transfer Protocol (SMTP) and Internet Message Access Protocol (IMAP) are two protocols used to control the data transmission of emails.

Explain **one** feature of SMTP and **one** feature of IMAP in the transmission of emails.

(4)

SMTP

IMAP



(f) The mobile phone shop has decided to move to online-only sales.

Discuss the implications of the move to online-only sales for the mobile phone shop.

(6)

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(Total for Question 1 = 22 marks)

2 A company provides services to clients that include businesses and individuals.

The company has decided to move to bigger premises.

The company is concerned that during the move equipment is damaged and data is lost.

(a) State **two** impacts to the company if data is lost.

(2)

1 .....

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2 .....

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(b) The company should ensure they design the computer workspace to minimise health risks.

Explain **two** factors the company should consider when they design the computer workspace in the new premises to minimise health risks.

(4)

1 .....

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2 .....

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- (c) The company currently use a proprietary operating system and are considering replacing it with an open-source operating system.

Explain **two** benefits to the company of moving to an open-source operating system.

(4)

1 .....

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2 .....

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- (d) A network operating system (NOS) is installed on the file server. Two functions of the network operating system are to manage the network and security.

Explain **one other** function of a NOS.

(3)

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(e) The company is considering updating its IT systems.  
Evaluate the impact of updating the company IT systems.  
You should consider the impact on:

- the company
- the employees

(9)

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(Total for Question 2 = 22 marks)

**3** An online retail company sells clothing.

The retail company offers a 'click-and-collect' service.

Customers using the 'click-and-collect' service nominate a store to collect their purchases.

When customers place their online order, the stock availability in the warehouse is checked. Unavailable items cannot be ordered and the customer can select an alternative item.

Available items are despatched to the customer's nominated store.

Items not collected by the customer within 14 days are returned to the warehouse.

Emails are sent to the customer when:

- The item is despatched to the nominated store
- The item is ready for collection in-store
- The item has not been collected and has been at the store for 7 days.

(a) Draw a flowchart to show the process for the 'click-and-collect' service.

(6)

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- (b) A customer visits the website and sees a message stating there is a problem with the website's security certificate.

Explain **one** reason why websites use digital certificates.

(2)

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- (c) The retail company uses a local area network (LAN) to store all its software and customer data.

The network topology installed is a 'bus'.

State **one other** network topology the company could have installed.

(1)

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(d) Anti-virus software is installed on the retail company's IT system.

A virus alert is received on one of the computers stating a possible threat is detected and instructs the user to click a button to continue.

Describe how anti-virus software will protect the IT system against threats.

(4)

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- Benefits
- Drawbacks.

(9)

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(Total for Question 3 = 22 marks)

4 A manufacturing company produce a range of gaming accessories. The manufacturing company has an office and a factory on separate sites.

(a) The manufacturing company produce wireless and wired controllers.

Give **one** method to connect a controller to a console.

(1)

(b) The factory has both wired and wireless connections for its network.

Explain **one** benefit of using a wired connection.

(2)

(c) The manufacturing company has an acceptable use policy.

Evaluate the role of an acceptable use policy in protecting the company and their data.

(9)

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- (d) The manufacturing company is considering introducing an emerging technology to improve services.

Evaluate whether the company should be more concerned with either the impact on:

- the performance of their IT systems
- the use of IT systems by employees.

(12)

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(Total for Question 4 = 24 marks)

**TOTAL FOR SECTION A = 90 MARKS**  
**TOTAL FOR PAPER = 90 MARKS**



## General marking guidance

- All students must receive the same treatment. Examiners must mark the first student in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Students must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme, not according to their perception of where the grade boundaries may lie.
- All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved. Examiners should also be prepared to award zero marks if the student's response is not rewardable according to the mark scheme.
- Where judgement is required, a mark scheme will provide the principles by which marks will be awarded.
- When examiners are in doubt regarding the application of the mark scheme to a student's response, a senior examiner should be consulted.
- Crossed out work should be marked unless the student has replaced it with an alternative response.
- Accept incorrect/phonetic spelling (as long as the term is recognisable) unless instructed otherwise.

## Levels-Based Mark Scheme Guidance

Levels-based mark schemes (LBMS) have been designed to assess students' work holistically. They consist of two parts:

- **Indicative content:** Indicative content reflects content-related points that a student might make but is not an exhaustive list. Nor is it a model answer. Students may make 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 appropriate response.
- **Levels-based descriptors:** Each level is made up of a number of traits which when combined together articulate the quality of response that a student needs to demonstrate. The traits progress across the levels to demonstrate the different expectations of each level. When using a levels-based mark scheme, the 'best fit' approach should be used.

### Applying the levels-based descriptors

- Examiners should take a 'best fit' approach to determining the mark.
- Examiners should first make a holistic judgement on which level most closely matches the student's response. Students will be placed in the level that best describes their answer. Answers can display characteristics from more than one level, and where this happens markers must use any additional guidance (e.g. weighting of traits) and their professional judgement to decide which level is most appropriate.
- The mark awarded within the level will be decided based on the quality of the answer and will be modified according to how securely all traits are displayed at that level.
- Marks will be awarded at the top of that level if the student has evidenced each of the descriptor traits securely.
- Where the response does not securely meet all traits, the marks should be awarded based on how closely the descriptor has been met.

Question Number	Answer	Mark
1a	<p>Award <b>one</b> mark for each of the following, up to a maximum of <b>two</b> marks:</p> <ul style="list-style-type: none"> <li>• Viruses and other malware (1)</li> <li>• Unauthorised access / hackers (1)</li> <li>• Social engineering (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	2

Question Number	Answer	Mark
1b	<p>Award <b>one</b> mark for each appropriate point in a linked description up to a maximum of <b>four</b> marks.</p> <ul style="list-style-type: none"> <li>• database of usernames and passwords are created (1)</li> <li>• on entry password checked against the username (1)</li> <li>• access is allowed if the username and password matches (1)</li> <li>• re-enter password if there is no match / access is denied (1)</li> <li>• limited number of attempts are allowed (1)</li> <li>• if unsuccessful attempts exceed number allowed, account is locked (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
1c	<p>Award one mark for identification and one additional mark for appropriate expansion, up to a maximum of <b>two</b> marks.</p> <p>Presence check (1) checks essential data fields have not been left blank (1)</p> <p>Format check (1) checks data entered (dob / post code / telephone numbers / price) use the correct format (date of birth / postcode / telephone number / price) using an input mask (1)</p> <p>Lookup table (1) looks up acceptable values in a table (product details against product number) (1)</p> <p>Length check (1) checks data entered is of the required length (for product number 8 numbers) (1)</p> <p>Multiple choice / Drop down list (1) using a list box to select from options for 'Customer title' (1)</p> <p>Type check (1) checks data entered is acceptable, e.g., text or number (1)</p> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
1d	<p>Award <b>one</b> mark for identification and <b>one</b> mark for an appropriate expansion point, up to a maximum of <b>two</b> marks.</p> <ul style="list-style-type: none"> <li>• A VPN ensures message integrity (1) by detecting any instances of interfering with transmitted messages (1)</li> <li>• authentication methods (1) by only allowing access from authorised devices (1)</li> <li>• VPN uses encryption (1), so data is unreadable if intercepted (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	2

Question Number	Answer	Mark
1e	<p>Award <b>one</b> mark for an identification, and <b>one</b> mark for an appropriate linked justification/expansion, up to a maximum of <b>four</b> marks.</p> <p><b>SMTP</b> Manages the sending of email from server to server (1) to ensure it reaches the recipient (1)</p> <p><b>IMAP</b> Stores emails on an email server (1) to allow access from multiple devices (1)</p> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
1f	<p>Answers will be credited according to the student's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers.</p> <p>Students <b>discuss</b> the implications of the move to online-only sales for the mobile phone shop.</p> <p><b>Mobile phone shop</b></p> <ul style="list-style-type: none"> <li>• cost implications <ul style="list-style-type: none"> <li>○ saving on individual showrooms (buildings / overheads / staff)</li> <li>○ loss of customers / revenue from customers who prefer to visit the showroom</li> <li>○ increased costs of additional staff to manage online sales and customer support services</li> </ul> </li> <li>• potential for increased online sales</li> <li>• may need to set up an additional customer service facility to deal with increased queries</li> <li>• some data may be stored on computer systems in each of the showrooms <ul style="list-style-type: none"> <li>○ would need to ensure the data is backed up and transferred to central storage</li> <li>○ removed / deleted from the showrooms systems</li> </ul> </li> <li>• centralisation of all data <ul style="list-style-type: none"> <li>○ more manageable</li> <li>○ fewer security issues</li> <li>○ may lead to fewer technical staff</li> </ul> </li> </ul>	6

**Mark scheme (award up to 6 marks)** refer to the Levels-Based Mark Scheme Guidance for how to apply levels-based mark schemes\*.

Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1–2	<ul style="list-style-type: none"> <li>• Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question and may consider only one side of the context. (AO2)</li> <li>• Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into their component parts. (AO3a)</li> </ul>
Level 2	3–4	<ul style="list-style-type: none"> <li>• Demonstrates good application of knowledge and understanding that is relevant to the context of the question and considers both sides of the context. (AO2)</li> <li>• Demonstrates a good analysis of the situation by breaking down the different aspects into their component parts. (AO3a)</li> </ul>
Level 3	5–6	<ul style="list-style-type: none"> <li>• Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question and considers both sides of the context in a balanced way. (AO2)</li> <li>• Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts. (AO3a)</li> </ul>

Question Number	Answer	Mark
2a	<p>Award <b>one</b> mark for any of the following, up to a maximum of <b>two</b> marks:</p> <ul style="list-style-type: none"> <li>• Lost time in retrieving the data (1)</li> <li>• financial loss due to legal action (1)</li> <li>• loss of customers. (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	2

Question Number	Answer	Mark
2b	<p>Award <b>one</b> mark for an identification, and <b>one</b> mark for an appropriate linked justification/expansion, up to a maximum of <b>four</b> marks.</p> <ul style="list-style-type: none"> <li>• provision of ergonomic furniture/computer equipment / adjustable chairs designed to support users (1) to minimise back/posture problems (1)</li> <li>• ensure minimal light/glare is reflected on screens (1) by positioning screens appropriately / providing window blinds (1)</li> <li>• cables/wires should be securely tied up (1) to avoid risk of injury by tripping (1)</li> <li>• adjustable height/tilting of monitors (to eye-level) (1) so that users can minimise neck problems (1)</li> <li>• provision of ergonomic mice/keyboards (1) to reduce repetitive strain injury (RSI) (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
2c	<p>Award <b>one</b> mark for an identification, and <b>one</b> mark for an appropriate linked justification/expansion, up to a maximum of <b>four</b> marks.</p> <ul style="list-style-type: none"> <li>• Access to source code (1) allows the company to meet specific needs (1)</li> <li>• The company will be able to work with other users to 'pinpoint' customisation (1) which would not be available with proprietary operating system manufacturers (1)</li> <li>• Bugs in the code are often noticed and corrected more quickly (1) because the users are not restricted by the manufacturer's procedures (1)</li> <li>• Can be more secure (1) because hackers tend to target proprietary software (1)</li> <li>• Ongoing support will be free of charge (1) because it is provided by other users/community rather than the manufacturer (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
2d	<p>Award <b>one</b> mark for an identification, <b>one</b> mark for an appropriate linked justification, and <b>one</b> mark for a further expansion, up to a maximum of <b>three</b> marks.</p> <ul style="list-style-type: none"> <li>• <b>Memory management</b> (1) <ul style="list-style-type: none"> <li>○ allocates space/memory to files/programs/clipboard items that are running/open (1) and decides how much memory each process will get / it monitors each memory location's status to see if it is free/allocated (1)</li> </ul> </li> <li>• <b>Multi-tasking</b> (1) <ul style="list-style-type: none"> <li>○ allocates each task a slice of processor time (1) and keeps track of where the user is in each task /without losing information (1)</li> </ul> </li> <li>• <b>Device drivers</b> (1) <ul style="list-style-type: none"> <li>○ driver receives and translates signals so both operating system and applications software can understand (1) when a signal is received from the hardware OS it is held in a buffer / instruction put in a queue until resources are available (1)</li> </ul> </li> </ul> <p>Accept any other appropriate/alternative response</p>	3



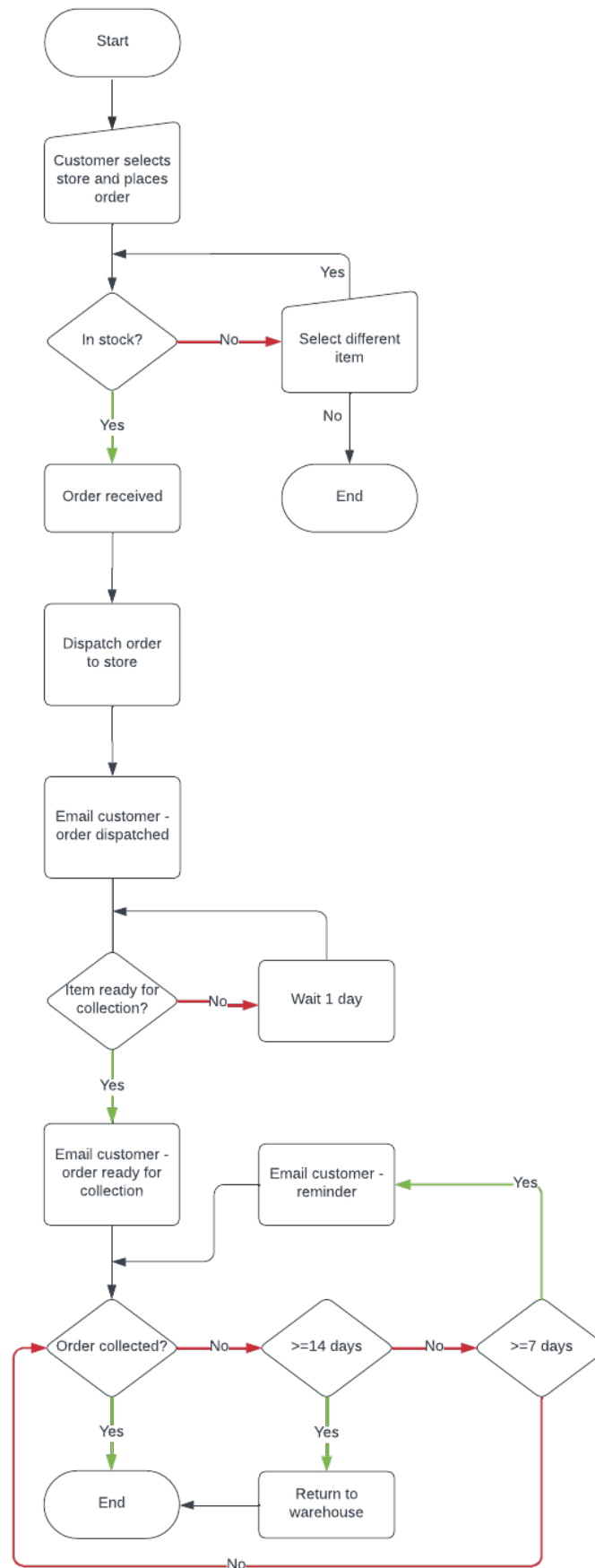
Question Number	Answer	Mark
2e	<p>Answers will be credited according to the student's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers.</p> <p>Students <b>evaluate</b> the impact of updating all IT systems. They should consider the impact on the company and its employees.</p> <ul style="list-style-type: none"> <li>• Cost <ul style="list-style-type: none"> <li>○ will incur large initial costs for IT systems</li> <li>○ may have to employ extra IT staff, initially and/or long term</li> <li>○ staff training</li> <li>○ may be able to re-coup some costs from selling used equipment</li> </ul> </li> <li>• Disposal of old equipment <ul style="list-style-type: none"> <li>○ may need to bring in experts to ensure all data is removed and/or storage media destroyed</li> <li>○ time and cost to dispose of hardware in an environmentally-friendly way</li> </ul> </li> <li>• Implementation <ul style="list-style-type: none"> <li>○ direct changeover could impact the operations of the company if the new system does not work and the current system is obsolete</li> <li>○ phased changeover would be more beneficial to allow the current staff to get used to the new system in phases</li> <li>○ parallel changeover would be more beneficial because downtime would be kept to a minimum because the current system would still be running while the new one is being implemented.</li> </ul> </li> <li>• Integration <ul style="list-style-type: none"> <li>○ other systems in use will need to be checked to ensure compatibility with the new system, e.g., any portable devices</li> <li>○ files could be lost/corrupted during transfer to the new system</li> </ul> </li> <li>• Productivity <ul style="list-style-type: none"> <li>○ loss of productivity during implementation</li> <li>○ improve productivity / efficiency with the updated systems</li> </ul> </li> </ul>	9

	<ul style="list-style-type: none"> <li>• Working practices <ul style="list-style-type: none"> <li>○ Changes to IT systems might have an impact on employees working from home, e.g., updating mobile technology, VPN costs</li> </ul> </li> <li>• Staff training needs <ul style="list-style-type: none"> <li>○ cost</li> <li>○ timing</li> <li>○ in house / outsourced</li> </ul> </li> <li>• Testing <ul style="list-style-type: none"> <li>○ must ensure that new system will work on all platforms</li> <li>○ must ensure the new system will work with/ be suitable for current IT needs</li> </ul> </li> <li>• Security <ul style="list-style-type: none"> <li>○ Of data during changeover</li> <li>○ Setting up new systems</li> <li>○ Up-to-date security software</li> </ul> </li> </ul>	
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**Mark scheme (award up to 9 marks)** refer to the Levels-Based Mark Scheme Guidance for how to apply levels-based mark schemes\*.

Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> <li>• Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question and may consider only one side of the context (AO2)</li> <li>• Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a basic evaluation which partially considers different factors/events and competing points, leading to a conclusion which is superficial or unsupported. (AO3b)</li> </ul>
Level 2	4–6	<ul style="list-style-type: none"> <li>• Demonstrates good application of knowledge and understanding that is relevant to the context of the question and considers both sides of the context. (AO2)</li> <li>• Demonstrates a good analysis of the situation by breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a good evaluation which considers different factors/events and competing points, leading to a conclusion which is partially supported. (AO3b)</li> </ul>
Level 3	7–9	<ul style="list-style-type: none"> <li>• Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question and considers both sides of the context in a balanced way. (AO2)</li> <li>• Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a thorough evaluation which comprehensively considers different factors/events and competing points, leading to a conclusion which is well supported. (AO3b)</li> </ul>

Question Number	Answer	Mark
3a	<p>Logic of the problem (up to 4 marks only).</p> <ul style="list-style-type: none"> <li>• Order placed, stock availability in the warehouse is checked (1)</li> <li>• Unavailable items, process ends (1)</li> <li>• Available items are despatched to nominated store and email sent to customer (1)</li> <li>• Item is ready for collection in-store and email sent to customer (1)</li> <li>• Email to customer if not collected within 7 days (1)</li> <li>• Items not collected within 14 days are returned to the warehouse (1)</li> </ul> <p>Use of annotation regardless of logic (2 marks only)</p> <ul style="list-style-type: none"> <li>• Has start/begin <b>AND</b> stop/end symbols (1)</li> <li>• At least <b>two</b> decisions (regardless of shape) with exactly one input and exactly two outputs with 'Yes' <b>and</b> 'No' labels (1)</li> <li>• Accurate and correct symbols used throughout (1)</li> </ul>	6



Question Number	Answer	Mark
3b	<p>Award <b>one</b> mark for identification and <b>one</b> mark for an appropriate expansion point, up to a maximum of <b>two</b> marks.</p> <p>To verify identity of website/verify that a company owns a website (1) to ensure that the information is genuine/valid (1)</p> <p>User's browser software will allow access to sites with certificates (1) because the certificate verifies that website is authentic/legitimate (1)</p> <p>Provides encryption for communication (using encrypted attachment) (1) ensuring that (initial) data transmitted is protected (1)</p> <p><b>Do Not Accept</b> – answers relating to showing website is secure e.g. Padlocks or https</p> <p>Accept any other appropriate/alternative response</p>	2

Question Number	Answer	Mark
3c	<p>Award <b>one</b> mark for any one of:</p> <ul style="list-style-type: none"> <li>• Ring (1)</li> <li>• Star (1)</li> </ul>	1

Question Number	Answer	Mark
3d	<p>Award <b>one</b> mark for each appropriate point in a linked description up to a maximum of <b>four</b> marks.</p> <ul style="list-style-type: none"> <li>• (Anti-virus software) monitors activity/scans computer/files (1)</li> <li>• compares (activity) against a database of definitions (1)</li> <li>• analyses the code/behaviour of the suspicious program (1)</li> <li>• Determines the nature of the threat (1)</li> <li>• Request actions from the user (1)</li> <li>• Give option to remove/quarantine the threat (1)</li> <li>• Log user actions to deal with similar future threats (1)</li> </ul> <p><b>Additional Guidance</b>  <b>Do not accept</b> 'removes the threat/virus' on its own</p> <p>Accept any other appropriate/alternative response</p>	4

Question Number	Answer	Mark
3e	<p>Answers will be credited according to the student's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers.</p> <p>Students <b>evaluate</b> the cost implications of a move to cloud computing.</p> <p>Students provide an evaluation of the decision, stating if they think the decision is appropriate or not. Their evaluation should be supported by relevant points which may include:</p> <p>Using a cloud computing system as an alternative to the current system will bring a range of cost advantages to the agency. In the traditional current system, they had to pay for the server and its installation, pay for and install applications and configure the system.</p> <p>There was also a range of ongoing costs relating to maintenance/updating etc.</p> <p>Using a cloud-based system the agency don't physically buy a server but access a part of a much larger server which is off-site away from the business. This is likely to be much cheaper in the end, although there will be costs incurred with running the system.</p> <p><u>Costs will be saved</u> as there is no need to pay for:</p> <ul style="list-style-type: none"> <li>• expensive hardware on an ongoing basis – either to update or to add capacity</li> <li>• updating software</li> <li>• ensuring up-to-date security</li> <li>• technical staff to maintain the system / deal with user issues etc</li> <li>• software, including OS and applications.</li> <li>• unused server capacity, which would be fixed under current system, but now can be scaled up and down to fit the needs of the business</li> <li>• access to up-to-date technology, without having to make huge investments</li> <li>• robust disaster recovery, which could be very costly in terms of expertise.</li> <li>• bespoke application packages or other commercially available software, cloud business applications are offered by suppliers and are much cheaper</li> <li>• VPN for home-based workers to access server</li> </ul> <p><u>Costs will be incurred for:</u></p>	9

	<ul style="list-style-type: none"> <li>• access to the new system. May be subscription based or pay as you go model, which will give them authorisation to use the software for a period of time and pay only for the software that they are using</li> <li>• Included in the cost will be a payment for support/staff etc.</li> <li>• server capacity, which will be dependent on what they are using mobile apps for staff, as required, allowing use on a variety of devices to access software &amp; data</li> </ul>	
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**Mark scheme (award up to 9 marks)** refer to the Levels-Based Mark Scheme Guidance for how to apply levels-based mark schemes\*.

Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> <li>• Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question and may consider only one side of the context (AO2)</li> <li>• Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a basic evaluation which partially considers different factors/events and competing points, leading to a conclusion which is superficial or unsupported. (AO3b)</li> </ul>
Level 2	4-6	<ul style="list-style-type: none"> <li>• Demonstrates good application of knowledge and understanding that is relevant to the context of the question and considers both sides of the context. (AO2)</li> <li>• Demonstrates a good analysis of the situation by breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a good evaluation which considers different factors/events and competing points, leading to a conclusion which is partially supported. (AO3b)</li> </ul>
Level 3	7-9	<ul style="list-style-type: none"> <li>• Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question and considers both sides of the context in a balanced way. (AO2)</li> <li>• Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a thorough evaluation which comprehensively considers different factors/events and competing points, leading to a conclusion which is well supported. (AO3b)</li> </ul>



Question Number	Answer	Mark
4a	<p>Award <b>one</b> mark for any of the following:</p> <ul style="list-style-type: none"> <li>• Bluetooth (1)</li> <li>• USB (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	1

Question Number	Answer	Mark
4b	<p>Award <b>one</b> mark for identification and <b>one</b> mark for an appropriate expansion point up to a maximum of <b>two</b> marks.</p> <ul style="list-style-type: none"> <li>• Signal is reliable/stable (1) because it is not affected by interference/walls/other devices (1)</li> <li>• Signal does not deteriorate over distance (1) which would reduce the need for boosters (1)</li> <li>• More secure (connection) (1) because it is not as easily intercepted (1)</li> <li>• Faster transmission speeds (1) that allows large files to download faster (1)</li> </ul> <p>Accept any other appropriate/alternative response</p>	2

Question Number	Answer	Mark
4c	<p>Answers will be credited according to the student's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers.</p> <p>Students <b>evaluate</b> the role of an acceptable use policy to protect the company and their data.</p> <ul style="list-style-type: none"> <li>• Protects the manufacturing company's users and data</li> <li>• Minimises the risk by enforcing the expected behaviours of all staff when using IT systems and resources</li> <li>• Ensures all staff understand their responsibilities for the appropriate use of IT systems and resources <ul style="list-style-type: none"> <li>◦ IT equipment includes all hardware, software, social media, internal and external emails, internet and intranet</li> </ul> </li> </ul> <p>Employees must:</p> <ul style="list-style-type: none"> <li>• Agree to comply with the Acceptable Use Policy (AUP)</li> <li>• Any breaches may result in disciplinary action</li> <li>• Act responsibly and professionally and be responsible for their own actions</li> <li>• Ensure they use the IT equipment in line with the manufacturing company's security policy</li> <li>• Report any breach of the AUP to the relevant team</li> <li>• Ensure usernames and passwords are used appropriately and securely <ul style="list-style-type: none"> <li>◦ Not written down or stored in shared folders</li> <li>◦ Not allowing employees to log on to the systems using a colleague's username and password</li> <li>◦ Log out of IT systems when not in use</li> </ul> </li> </ul> <p>Company must:</p> <ul style="list-style-type: none"> <li>• Monitor the business and personal use of the IT systems</li> <li>• Ensure staff have the necessary training to ensure they are aware of security procedures</li> </ul> <p>Protecting data:</p> <ul style="list-style-type: none"> <li>• The manufacturing company and its employees have legal responsibility to protect personal/sensitive data</li> <li>• Not to access personal data unless it is appropriate to do so for the job role</li> </ul> <p>Using IT systems:</p> <ul style="list-style-type: none"> <li>• Employees are accountable when using online systems and should not damage the reputation of the company <ul style="list-style-type: none"> <li>◦ Not downloading illegal music/video/software</li> <li>◦ Not bullying or harassing</li> <li>◦ Not posting offensive material that could embarrass or compromise the company</li> <li>◦ Not breaking company confidentiality online</li> </ul> </li> </ul>	9

**Mark scheme (award up to 9 marks)** refer to the Levels-Based Mark Scheme Guidance for how to apply levels-based mark schemes\*.

Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> <li>• Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question and may consider only one side of the context (AO2)</li> <li>• Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a basic evaluation which partially considers different factors/events and competing points, leading to a conclusion which is superficial or unsupported. (AO3b)</li> </ul>
Level 2	4–6	<ul style="list-style-type: none"> <li>• Demonstrates good application of knowledge and understanding that is relevant to the context of the question and considers both sides of the context. (AO2)</li> <li>• Demonstrates a good analysis of the situation by breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a good evaluation which considers different factors/events and competing points, leading to a conclusion which is partially supported. (AO3b)</li> </ul>
Level 3	7–9	<ul style="list-style-type: none"> <li>• Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question and considers both sides of the context in a balanced way. (AO2)</li> <li>• Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a thorough evaluation which comprehensively considers different factors/events and competing points, leading to a conclusion which is well supported. (AO3b)</li> </ul>

Question Number	Answer	Mark
4d	<p>Answers will be credited according to the student's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all the indicative content but should be rewarded for other relevant answers.</p> <p>Students <b>evaluate</b> the implications for the performance of IT systems and the use of IT systems by employees.</p> <p>Emerging technologies can be hardware, software based or a combination. The focus of responses may relate to any/all of these.</p> <p><b>Impact on employees:</b> The company should be concerned with the overall performance of employees when using the emerging technology in the short and long term based on:</p> <ul style="list-style-type: none"> <li>• ease of use: <ul style="list-style-type: none"> <li>○ whether initial/ongoing training on the emerging technology would be required and how long this would take/how expensive it would be</li> <li>○ whether investment in time/money for training would be offset in the longer term</li> <li>○ whether the emerging technology would speed up/slow down use of IT by employees.</li> </ul> </li> <li>• performance: <ul style="list-style-type: none"> <li>○ whether the emerging technology would be faster than the previous systems</li> <li>○ whether employees can be more productive</li> <li>○ whether introducing the emerging technology may replace some of the processes undertaken by employees.</li> </ul> </li> <li>• availability: <ul style="list-style-type: none"> <li>○ whether the emerging technology would be available to all employees</li> <li>○ whether certain departments/processes/employees would benefit more from the emerging technology than others.</li> </ul> </li> <li>• accessibility: <ul style="list-style-type: none"> <li>○ whether the emerging technology places any barriers on employees engaging with it/performing their duties/responsibilities.</li> </ul> </li> </ul> <p><b>Impact on performance:</b> need to ensure that the emerging technology is compatible across different platforms. This includes hardware, operating systems and other application software, communication software, security software including:</p>	12

	<ul style="list-style-type: none"> <li>• current hardware devices. These may vary, could be laptops, tablets, gaming devices.</li> <li>• peripherals may not work with new/existing software.</li> <li>• operating systems. If not compatible, then the manufacturing company will need to consider the implications of replacing / upgrading the device.</li> <li>• application software. Depending on type of emerging technology may need to work alongside other applications and compatibility is essential.</li> <li>• security software. Must ensure that the emerging technology does not cause security issues.</li> <li>• who is going to install/maintain the technology – in-house / external agency and how will this impact performance?</li> <li>• must ensure that the emerging does not impact on the security of current systems that impact on performance.</li> <li>• does the technology need all/some system(s) to be closed when installing, if so will need to carefully consider when the installation is going to take place?</li> <li>• has the technology been fully tested or are issues likely to arise which will impact on other aspects of the system(s).</li> </ul>	
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**Mark scheme (award up to 12 marks)** refer to the Levels-Based Mark Scheme Guidance for how to apply levels-based mark schemes\*.  
AO2 descriptors carry double weighting

Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1–4	<ul style="list-style-type: none"> <li>• Demonstrates basic application of knowledge and understanding that is partially relevant to the context of the question and may consider only one side of the context (AO2)</li> <li>• Demonstrates a basic analysis of the situation by superficially breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a basic evaluation which partially considers different factors/events and competing points, leading to a conclusion which is superficial or unsupported. (AO3b)</li> </ul>
Level 2	5–8	<ul style="list-style-type: none"> <li>• Demonstrates good application of knowledge and understanding that is relevant to the context of the question and considers both sides of the context. (AO2)</li> <li>• Demonstrates a good analysis of the situation by breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a good evaluation which considers different factors/events and competing points, leading to a conclusion which is partially supported. (AO3b)</li> </ul>
Level 3	9–12	<ul style="list-style-type: none"> <li>• Demonstrates comprehensive application of knowledge and understanding that is consistently relevant to the context of the question and considers both sides of the context in a balanced way. (AO2)</li> <li>• Demonstrates a thorough analysis of the situation by comprehensively breaking down the different aspects into their component parts. (AO3a)</li> <li>• Demonstrates a thorough evaluation which comprehensively considers different factors/events and competing points, leading to a conclusion which is well supported. (AO3b)</li> </ul>



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