

CAMBRIDGE TECHNICALS LEVEL 2 (2016)

Examiners' report

IT

05882, 05883, 05884

Unit 2 January 2025 series

Contents

Introduction3

Unit 2 series overview4

 Question 1 (a)5

 Question 1 (b)5

 Question 1 (c)6

 Question 1 (d)6

 Question 2 (a)7

 Question 2 (b) (i)7

 Question 2 (b) (ii)8

 Question 2 (c) (i)8

 Question 2 (c) (ii)8

 Question 2 (d) (i)9

 Question 2 (d) (ii)9

 Question 3 (a) (i)10

 Question 3 (a) (ii)10

 Question 3 (b)11

 Question 3 (c)11

 Question 3 (d) (i)12

 Question 3 (d) (ii)12

 Question 3 (e)13

 Question 3 (f)14

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from [Teach Cambridge](#).

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Unit 2 series overview

This unit is mandatory for the Certificate and for the IT Practitioner and Digital Software pathways for the Diploma.

The unit focuses on:

- aspects of cyber security
- threats and vulnerabilities that result in cyber security attacks
- how impacts from cyber security attacks can be minimised.

The questions in the paper are preceded by a scenario that involves an aspect of cyber security. The questions are based around this scenario. The paper may contain different scenarios for different questions.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
<ul style="list-style-type: none"> • used technical terms • related their responses to the scenario in the question • used the keywords in the question to give appropriate depth to their responses. 	<ul style="list-style-type: none"> • missed questions out • gave learnt responses from previous mark schemes that were not applicable • gave responses using identified keywords from other questions in the paper • gave responses that included answers from the question that they were told not to use • used technical terms incorrectly • applied examination technique to their response based on the keyword, knowledge and application to the scenario.

Question 1 (a)

(a) Identify the type of attacker who uses computers and information technology to cause and spread fear in society.

[1]

This question required a learnt response from the specification. Many candidates were able to identify the type of attacker and achieved the mark. Common incorrect responses included hacker and cybercriminal.

Question 1 (b)

(b) Cyber security aims to protect networks.

Identify **two other** items that cyber security aims to protect.

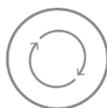
[2]

1

2

The items that cyber security protects are listed in the specification and required a learnt response from the candidate. While there were a few candidates that gave networks, even though it was mentioned in the question as one that was not going to be given credit, this was rare.

Assessment for learning



Candidates should get into the habit of only giving the required number of responses – for example, two items were asked for – if a candidate gave information and data as a single response in box 1 – this is actually two responses. The application of examination technique is important to maximise marks.

Question 1 (c)

(c) Data has been changed by an attacker.

Identify the type of cyber security incident that has happened.

[1]

Types of cyber security incident are listed in the specification and required a learnt response from the candidate.

Question 1 (d)

(d) An attacker has accessed sensitive data held by a foreign government.

Identify the motivation of the attacker.

[1]

The context of the question meant that there was only one correct response to this question – espionage. There may have been consequences from the attack, such as data theft but there was only one motivation.

Question 2 (a)

A research company collects data from registered clients using online surveys hosted on a website. To register, clients must submit their contact details, including their email address.

(a) The contact details are stored on a server. The server is protected by a firewall.

Explain how the firewall protects the contact details on the server.

[3]

Those candidates who gave an extended piece of writing were more likely to achieve the mark. As an explanation, full marks cannot be given for single word responses. Many candidates got across the idea that it monitored the data coming in and out and that it could also block data. There was little indication of the concept of a set of rules or checking against the rule. Some candidates were not given marks as they referred to individuals rather than data.

Question 2 (b) (i)

(b) A threat to the server has been stopped by the firewall. The threat has been identified as a botnet.

(i) Describe a botnet.

[3]

Many candidates described the effects of a botnet or how a botnet worked without covering any detail about what it actually is. There were some instances of extended pieces of writing that gained 0 marks because the question and keyword were not properly read. Those candidates who did get marks on this question understood its use as a tool and described how it works rather than the impacts and consequences of its use.

Question 2 (b) (ii)

(ii) Identify the type of threat to the company that can be caused by a botnet.

[1]

This was generally well answered with most candidates achieving the mark.

Question 2 (c) (i)

(c) An email with the link to the online survey's website is sent to the clients' email addresses stored on the server.

Clients have reported that some email links go to a website that has spelling mistakes in its name.

(i) Identify the type of threat that has occurred.

[1]

This was generally well answered with most candidates achieving the mark.

Question 2 (c) (ii)

(ii) Identify and describe the type of attacker that is sending the emails.

[3]

Type

Description

Most candidates successfully identified phisher. The description section was not completed as well though with candidates neglecting the fact that the phisher pretends to be from a legitimate organisation. Hacker was a common incorrect response given.

Question 2 (d) (i)

(d) Clients have reported that pop-up adverts start to appear on the devices they used to follow the link.

(i) Identify and describe **one** type of malware that could have been installed on the devices.

[3]

Type

Description

The identification of adware was generally well done but few candidates were able to give a description. Many descriptions related to the clients getting a virus on their machines. Virus was a common incorrect answer.

Question 2 (d) (ii)

(ii) Identify the motivation for the attack.

[1]

This was generally well answered with most candidates achieving the mark.

Question 3 (a) (i)

A home owner has installed smart devices in their house. The smart devices include a digital assistant, smart plugs and a smart doorbell. The devices form a network. The devices are connected via wi-fi to a router which provides the broadband connection. The router is secured by a password.

(a)

(i) Explain why it is important that the owner of the house uses cybersecurity.

[2]

This was generally well answered. It was good to see candidates contextualising their responses and basing them around the smart devices.

Question 3 (a) (ii)

(ii) Identify **one** target in the house for a cybersecurity attack.

[1]

Candidates demonstrated their knowledge of different types of smart devices with identification of specific items of hardware being the most common response.

Question 3 (b)

(b) Social engineering could be used to gain the router password.

Identify **two** types of social engineering.

[2]

1

2

Phishing was the correctly identified response by many candidates however a second social engineering type was often lacking. Scamming was given by many (as it appears in the next question) but was incorrect.

Question 3 (c)

(c) A scammer has tried to obtain the router password.

Explain, using an example, what **scammer** means.

[4]

Generally, this question was not very well answered. Many candidates repeated their response for a phisher, and they did not incorporate the need for exchange of money into their response. There were some instances where a detailed and well-structured response did not achieve full marks because there was no example.

Question 3 (d) (i)

(d) A cyber security attack could take place on the network due to environmental vulnerabilities.

(i) Explain **one** environmental vulnerability that could affect the network.

[3]

Many candidates related what they were seeing on the news to this question – fire was a very common, and correct response. Weather on its own was too vague and more detail was required to award the mark for this response. Few candidates explained the effect of the vulnerability on the network – linking the vulnerability to what the impact on the network was and why this impact was caused by the environmental vulnerability. Many candidates gave the network not working as the impact, and the end of their sentence.

Question 3 (d) (ii)

(ii) Identify **one other** type of vulnerability.

[1]

This was a learnt response that required knowledge regurgitation. Few candidates gave a second type of environmental vulnerability which was not accepted.

Question 3 (e)

(e) Describe **one** safety impact that could occur after a cyber security attack on the network.

[3]

Many candidates focused on solutions and described what actions should be taken to improve the security of the network. Unfortunately, none of these could be given.

Question 3 (f)

(f) The owner has installed a firewall as a logical protection measure.

Discuss other logical protection measures that could be used to protect the smart devices, wi-fi and router.

[9]

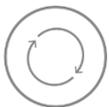
The final question on this paper has consistently been an essay. Essays require a longer response from the candidate, which is planned and takes into account the context of the question and the keyword.

There were many responses from candidates which neglected the information given in the question i.e. that they were to write about logical protection methods to protect specific devices. Their responses had to therefore make sense as a measure to protect those devices. It was also important that the protection applied to the device did not make it inoperable, i.e. disconnecting from the network is not a valid response on many levels.

There were also a few responses who confused logical and physical protection and proceeded to write about CCTV, locks on doors and even a safe.

In general, there was an improvement in the quantity and quality of responses for this final essay. There was evidence, in some candidate's work, of planning their response before they started to write it.

Assessment for learning



Essays, such as this, require depth of response from the candidate rather than breadth. A few points are required but the candidate is required to show their understanding of the point and its application to the question.

Formatting their response can assist this, with each point being made being a separate paragraph; this can help focus the candidate on the point being made rather than moving onto a different one and reducing the depth of their argument and marks given.

The use of the highlighter to identify the key points in the question is a technique that has been seen used to great effect.

This question is worth 20% of the whole paper and both an appropriate time in the exam and in preparation needs to be given to teaching the candidates how to interpret the question and formulate a response.

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- the best practices for collecting, storing and submitting evidence
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