

**CAMBRIDGE TECHNICALS LEVEL 2 (2016)**

**Examiners' report**

**IT**

**05882, 05883, 05884**

**Unit 2 January 2023 series**

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## 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 OCR.

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

There are large numbers of candidates who are not attempting all questions, and this is preventing them from accessing the higher grades.

Candidates need to learn the key words in the specification and their associated definitions and then apply them to the scenario.

There is evidence that candidates are not familiar with the technical terms used in cyber security.

## Question 1 (a)

(a) Data theft is one type of cyber security incident.

Identify **one other** type of cyber security incident.

[1]

Candidates responded very well this question with the majority scoring highly. Some candidates gave data theft as their response when this was given in the question, so did not gain the mark.

## Question 1 (b)

(b) A cyber criminal is an example of an attacker.

Identify **two other** types of attacker.

1

2

[2]

This question required a learnt response from the specification. As with the previous question, responses that incorporated the type of attacker given in the question gained no marks.

## Question 1 (c)

(c) One purpose of cyber security is to maintain the availability of information and data.

Identify **two other** purposes of cyber security.

1

2

[2]

Candidates who were aware of the CIA triad scored highly on this question by being able to identify the other two aspects.

### Question 2 (a) (i)

A local shop delivers boxes of fruit and vegetables to its customers' homes. Customers can order online using the shop's website. Customers input their contact and payment details into a form on the website. The contact and payment details are stored by the shop.

(a) Cyber criminals attacked the website and have accessed the stored customer contact details.

(i) Explain what cyber criminal means.

[2]

On the surface this is a relative straight forward question. There are 2 marks available. The majority of candidates were able to achieve 1 mark by identifying, either by definition or the use of an example, what a criminal means. The cyber element was often missed and limited access to the second mark.

### Question 2 (a) (ii)

(ii) Identify **two** possible motivations of the cyber criminals who attacked the website.

1

2

[2]

Although this question required a learnt response from the specification, it did require a slight element of contextualisation as not all motivations were applicable to this scenario. Candidates do need to look at the context and decide which answers to apply.

### Question 2 (a) (iii)

(iii) Identify the legislation that was broken during the cyber security attack.

[1]

This was a learnt response based on the information given and was generally done very well.

## Question 2 (b) (i)

(b) After the attack, the shop noticed that the images on the website had changed. Adverts also appeared on the website home page.

(i) Identify **and** describe **two** ways in which these changes could have been made by the attacker.

1

2

[6]

The focus of the question was on how the images had been changed. This means it needs to be a tangible method that could be repeated. Many responses were very non-descript and vague without giving key points. A description needs to start with an identification and then build on that. A lack of examination technique is hindering the candidates from accessing higher marks.

## Question 2 (b) (ii)

(ii) Identify **and** describe **one** intentional organisational threat that could take place on the shop's website.

[3]

This question was very poorly done. Many candidates did not read the question properly and identify the keywords – that the attack was intentional, at an organisational level and was external (on the website). There is only one correct response that meets all these criteria. Too many responses were based around generic hacking.

## Question 2 (c) (i)

(c) After the attack, the shop installed anti-virus software.

(i) Describe the purpose of anti-virus software.

[2]

While it was apparent many knew what anti-virus software was, many were limited by their use of technical language to describe its purpose and only gave one element of the description.

## Question 2 (c) (ii)

(ii) Describe **one** characteristic of anti-virus software.

[2]

Many candidates repeated their response from the previous question. There was a distinct lack of understanding of the difference between a purpose and a characteristic. A purpose of what it does, a characteristic is the features it uses to achieve the purpose.

## Question 3 (a)

An online games company creates games for children under 11 years old. Parents have to register their personal details before their children can access the games. The games are available as a download or can be played online. Players are able to make in-game purchases of extra lives or tools to help in the game.

(a) Explain why it is important that the games company uses cyber security.

[3]

This question is fundamental to the paper – an understanding of why we need cyber security. A context was given that contained many elements that the candidates could use in their responses. The best responses were those that attempted to contextualise their responses for the games company and the scenario online payments, personal details and children under 11. Generic responses about the need to protect data showed limited understanding and subsequently achieved limited marks.



### Question 3 (b)

- (b) The games are stored on a server. The server is protected by a firewall.

Explain how the firewall protects the games stored on the server.

[3]

This question was one of the few on the paper that required a technical response from the candidates. The explanation keyword identified a higher level response is required. Too few responses do not give enough depth to obtain all marks.

### Question 3 (c)

- (c) The games company uses a biometric access device to protect the server room.

Explain how a biometric access device can be used to protect the server room.

[3]

The question was not asking about access levels or why biometric access is used but how it is used. Very few candidates understood about the necessity to scan the fingerprint/retina first to create a baseline for comparison or what happens when the user scans their fingerprint/retina. Too few focused on the need for the access device gaining no marks.

### Question 3 (d)

- (d) The games company has a password protection policy.

State **one** rule for choosing a password that should be included in the policy.

[1]

Candidates responded very well to this question with the majority gaining the mark. Those that did not, gave only one feature – for example numbers, without understanding that the rule would be based around a combination of characters.

### Question 3 (e)

- (e) Parents provide an email address during the registration process.

Some parents have reported that they have received emails asking them to click on a link and provide their bank account details.

Identify **and** describe the type of attack that uses this method.

[3]

Candidates responded well to this question with the majority scoring highly. Most recognised it as a phishing attack and went on to give details about this type of attack.

### Question 3 (f)

- (f) One possible impact of a cyber security attack could be the loss of intellectual property.

Discuss how this impact would affect the creators of the online game.

[9]

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

The focus of the question was on intellectual property. The majority of candidates wrote a generic essay based around the impact of a cyber security attack – few understood what intellectual property (IP) was or the impact on the creators of losing 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.

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