

**CAMBRIDGE TECHNICALS LEVEL 2 (2016)**

**Examiners' report**

**IT**

**05882, 05883, 05884**

**Unit 2 January 2022 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.

<b><i>Candidates who did well on this paper generally did the following:</i></b>	<b><i>Candidates who did less well on this paper generally did the following:</i></b>
<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 response.</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>• Used technical terms incorrectly.</li> </ul>

## General comments on the paper

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 1.1

- (a) One target for a cyber security attack is individuals.

Identify **one other** target for a cyber security attack.

[1]

This question required a learnt response from the specification. It was answered very well with most candidates identifying one of the other targets.

### Question 1.2

- (b) One type of attacker is a hacker.

Identify **two other** types of attacker.

1

2

[2]

This question required a learnt response from the specification and most candidates were aware of different types of attackers and gained both marks in this question.

### Question 1.3

- (c) One aim of cyber security is to protect computers.

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

1

2

[2]

The question required a learnt response from the specification. Data and Information were the most common correct responses given here.

## Question 2.1

A cycling club stores electronic records of its members. The records include personal details including name, address, phone number and email address. The cycling club also records the time taken for each member to complete each cycle ride.

- (a) The computer storing the records of cycling club members has been stolen.

Identify the type of vulnerability that has occurred.

[1]

This question was not answered very well. Candidates focused on the data that was stolen rather than the fact that the entire computer was stolen, making it physical.

## Question 2.2

- (b) Describe **one** purpose of cyber security.

[2]

The question required a learnt response from the specification. This was done very well with most candidates achieving both marks.

### Question 2.3

- (c) Since the computer was stolen, some of the cycling club members have received emails with the cycling club logo, asking them to click on a link to confirm their personal details for the club.
- (i) The type of threat that has occurred may be social engineering.

Describe **one other** type of threat that this might be.

[3]

The threat had to relate to the receipt of an email. The key piece of information given in the question was that the emails had the cycling club logo, this ruled out scammers as a possible response. The candidates who read the question carefully, identified this and many gave the correct response – phishing.

### Question 2.4

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

Type

Description

[3]

Without correctly identifying the type of attacker it was not possible to get marks for their description. Those that correctly identified the type of attacker as a phisher often did not give a description.

## Question 2.5

- (d) The cycling club members have been warned about the threat of social engineering.

Identify **two different** types of social engineering.

1

2

[2]

This question required a learnt response from the specification and was done very well with most candidates achieving both marks.

## Question 2.6

The cycling club has bought a new computer.

- (e) Identify **one physical** protection method that could be used to increase the security of the new computer and describe how this method would increase security.

Method

Description

[3]

Some candidates confused themselves with physical and logical methods of security. Physical security requires the individual to be present whereas logical is remote. A significant number of candidates gave logical methods. Those that correctly identified a physical method often did not capitalise with a valid description.

## Question 2.7

- (f) Describe **one** purpose of physical protection methods.

[2]

This question required a learnt response from the specification and it was pleasing to see most candidates achieving both marks.

## Question 3.1

A gardening business has a page on their website where customers can book appointments to have their grass cut. Customers have to register before they can book appointments. When registering, they will input their details including name, address and payment card details. A username is chosen by the customer and an auto-generated password is provided by the website.

A customer can select from available dates and times to book an appointment. When the appointment has been selected by the customer it is then shown on the website as being unavailable.

- (a) Customers are able to change the auto-generated password to one they will remember.

Identify **two** rules that customers should follow when choosing a new password.

1

2

[2]

There was a lack of thought in the majority of the responses given by candidates. Many, for example, identified that capital letters would be a good rule – however, capital letters on their own is no different to lower case letters. It is the combination of BOTH upper and lower case that is required. Likewise, a long password is a good idea, but without identifying a specific minimum length, such as 8 characters, long is a vague term and was not credited.

### Question 3.2

- (b) A Denial of Service (DoS) cyber security attack has taken place on the website.

Describe what is meant by Denial of Service (DoS) cyber security attack.

[3]

This question was not answered well with very few candidates obtaining significant marks. A large proportion of responses given did not reflect the fact that the attack took place on the website or that the website would be unreachable. Candidates often confused a DoS attack with a virus attack and gave responses relating to passwords and data being obtained by the hacker.

### Question 3.3

- (c) Identify **two** possible motivations of the attacker who carried out the Denial of Service (DoS) attack.

1

2

[2]

Motivations of attackers is a learnt response from the specification and it was pleasing to see most candidates achieving both marks.

### Question 3.4

- (d) Following the cyber security attack, the gardening business has been advised to introduce extra security protection measures.

One security protection measure that could be introduced is token authentication.

Explain the process of token authentication.

[3]

This question proved challenging. Those candidates that did attempt the question often gave vague responses with no specific details on the process. Many confused token authentication with email verification.

	<b>Misconception</b>	There is difference between account verification and token authentication. Account verification is replying to an email that you have entered the correct email address when setting up the account. Token authentication is a form of two factor authentication.
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### Question 3.5

- (e) Identify **two other** logical security protection measures that could be introduced.

1

2

[2]

Similarly, to the earlier question, there was a lack of understanding for candidates between physical and logical protection measures although this time, the majority of responses were logical based. The question excludes passwords and the response from the previous question – token authentication. Anti-virus software was the most prevalent correct response.

### Question 3.6

- (f) Customer details are stored by the gardening business.
  - (i) Identify the Act that relates to the storing of customer details.

[1]

This is a learnt response – most candidates correctly identified the act, or its more common name (GDPR). The year was not required and ignored if given. Some candidates gave the Computer Misuse Act and there were also a wide variety of responses relating to the Privacy Act”.

### Question 3.7

- (ii) Identify **two** rules that should be followed by the gardening business to comply with this Act.

1

2

[2]

The response given to this question was not dependent on getting the act correct. Many candidates who gave an incorrect act were still able to gain marks here. The majority of marks were given to responses relating to the security of information. Beyond that, there was very little knowledge of the requirements of the act.

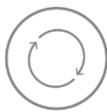
	<b>Misconception</b>	Many responses referred to absolutes – “you cannot share information with anyone”, “you must delete it on request”, “you cannot change it”. These are incorrect.
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### Question 3.8

- (g) Discuss the potential financial loss and disruption to the gardening business of the Denial of Service (DoS) cyber security attack.

[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 the loss and disruption caused by the DoS. A significant proportion of candidates gave responses that related to the theft of data rather than lack of access to the data.

	<p><b>AfL</b></p>	<p>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.</p>
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