

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

IT

05838–05842, 05877

Unit 3 Summer 2022 series

Contents

Introduction	3
Unit 3 series overview	4
Section A overview	5
Question 1 (a)	5
Question 1 (b)	6
Question 1 (c)	6
Question 2 (a)	7
Question 2 (b)	8
Question 2 (c)	8
Question 2 (d)	9
Question 3	10
Section B overview	11
Question 4 (a)	11
Question 4 (b)	12
Question 5 (a)	13
Question 5 (b)	14
Question 6 (a) (i)	14
Question 6 (a) (ii)	15
Question 6 (b)	15

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 3 series overview

This unit is mandatory for the Extended Certificate, Diploma and Extended Diploma and optional for all pathways for the Introductory Diploma and Foundation Diploma.

The unit focuses on:

- an understanding of cyber security and the issues surrounding it
- measures that can be used to protect against cyber security incidents
- an understanding of how to manage cyber security incidents.

The paper is divided into two sections – A and B. Section A is worth 60% (40 marks) and are based around a pre-release scenario. The pre-release contains areas for further research that the candidate is expected to undertake, and which form the basis of the questions to be asked. Section B is worth 40% (20 marks) and each question has its own short scenario.

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"> • used technical terms • related their responses to the scenario in the question • used the keywords in the question to give appropriate depth to their response. 	<ul style="list-style-type: none"> • answered the question they thought was being asked, not the one being asked • repeating the same point several times in different ways • giving a response that has been eliminated in the question.

Section A overview

The pre-release identifies key research topics that the candidates should have spent some time working on. They need to have cross referenced the topics against the specification and identified keywords that will assist them in linking the research topics to the questions asked. Answers should be given in the context of the case study in the pre-release.

Question 1 (a)

1 (a)* Nutz'N'Boltz uses cyber security to protect personal information that it stores.

Justify why Nutz'N'Boltz needs to protect the stored personal information.

.....

.....

.....

.....

.....

.....

..... [7]

A justification is a keyword that only requires positive explanations from the candidate. The content of the responses was generally good but there was a lack of examination technique among the candidates which restricted the marks that they achieved. There was limited explanation of the points made. Many of the responses were a string of identifications and descriptions rather than the in-depth explanation that an essay requires at this level.

Assessment for learning



Essay questions are marked using bands and not using points. This means that the candidate needs to be making a few points, but each point needs to show the depth of their knowledge and understanding rather than many points which demonstrate a superficial breadth. Each point requires an explanation, backed up with examples relevant to the question. The explanation needs to make up the majority of the response rather than be added as an afterthought.

Question 1 (b)

- (b) One of the targets of a cyber security threat against Nutz’N’Boltz is the equipment it uses.

Identify **two** pieces of equipment that could be a target. For each piece of equipment describe a different method that could be used to target it.

Equipment 1

.....

How targeted

.....

Equipment 2

.....

How targeted

.....

[4]

Many candidates achieved the first mark for the identification of the equipment. However, they did not give an adequate description of how it would be targeted. The method of targeting needed to match the item of hardware. Many of the methods given lacked detail and were generic.

Question 1 (c)

- (c)* Nutz’N’Boltz regularly tests the network to see if it will withstand a cyber security incident.

Evaluate the effectiveness of testing as a tool to protect against cyber security incidents.

[10]

The keyword required an evaluation – both sides of a point of view, with a conclusion. As with the essay in Question 1(a) each point made requires an explanation, backed up with examples relevant to the question - the depth was once again lacking.

Many responses focused on the type of testing that could be done rather than the effectiveness of the testing – whether it was a good indicator of the security of the network for example, or why it could or could not be relied on to determine if the network was secure.

Question 2 (a)

2 (a) Nutz'N'Boltz has been the victim of a cyber security incident. On becoming aware of the incident a set of documented procedures was implemented.

Explain why it is important to have a set of documented procedures to follow.

.....

.....

.....

.....

.....

.....

..... [4]

Where the questions occur within the question paper is important and will assist the candidate in formulating their response. This question is about the initial actions following an incident. It is not about training, or producing documentation for future incidents, but why procedures are needed in that moment when the incident is discovered.

Too many candidates gave generic responses based around the updating of procedures after an event – a question from a previous paper.

Question 2 (b)

(b) One of the documented procedures is to contain the incident.

Describe **two** measures that should be taken to contain the incident.

1

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.....

.....

.....

2

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.....

[4]

This question follows on from the last – the “story” of the incident – the incident has started, it is ongoing, what does the company now do to contain it. The incident stages are listed in the specification and the candidate needs to be aware of the formal process of dealing with one.

The most common response was disconnecting from the internet and a large number of candidates gave this response for most measures – albeit worded differently.

Question 2 (c)

(c) Following the cyber security incident, the system appears to be functioning normally.

Explain why the system appearing to be functioning normally does not always mean that the cyber security incident is over.

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.....

[4]

This question was very well-answered by the majority of candidates with a good understanding of how a hacker might hide within a system or that stolen data is still part of the incident.

Question 2 (d)

(d) One of the impacts of the cyber security incident is disruption.

Identify **two** aspects of the business that would be disrupted. For each aspect describe its impact on the business.

1

Impact

2

Impact

[4]

Many candidates achieved the first mark – the identification of the aspect of the business that would be disrupted, with the most common being equipment. However, candidates did not give an adequate description of its impact. An impact needs to be something measurable, that has an effect on the running of the business – general responses such as data would be lost for example, lacked the depth or detail required from a candidate’s response at this level of qualification.

Question 3

- 3 Nutz'N'Boltz has been accused of breaking the law by not adequately protecting the personal data it stores.

Describe **two** other actions Nutz'N'Boltz should take to ensure it complies with the law relating to personal data.

1

.....

.....

.....

.....

.....

2

.....

.....

.....

.....

[4]

This was not well-answered by the majority of candidates. Very few knew of anything beyond security that was required within the law. Many gave different aspects of security but as the basis of their responses was security – access rights, passwords, locked doors, for example, no marks were given.

Section B overview

This section is not based on the pre-release material. Each question is given a short context and candidates are expected to use it, where appropriate, within their responses.

Question 4 (a)

4 (a) One of the aims of cyber security is to protect the availability of information.

What is meant by availability?

.....

.....

.....

..... [2]

This is a learnt response – as one of the three cornerstones of cyber security candidates need to be able to give the definitions. This however was not the case with few candidates achieving marks. Candidates need to be aware that repeating the question will not get them marks – to define availability by saying the information is available cannot be given.

Question 4 (b)

(b) Complete the paragraph using the list of terms below.

Not all terms need to be used.

- Access
- Biometric
- Malware
- Management
- Swipe
- Transit
- Updates
- Use

Physical controls, such as _____ access and _____ cards can be used to protect data from being stolen.

Software controls such as operating system _____ can also be used.

Data is also vulnerable when it is in _____ and being transmitted.

[4]

This was very well-answered with the majority of candidates achieving high marks. The definitions came from the specification, and it is important for candidates to be aware of the text of the specification.

Question 5 (a)

5 Charlie has received the following email:

From: Info@onlinestorage.com

To: <undisclosed recipients>

You are currently running out of disk space in your on line account.
Click here: <http://io/ly/iTzP> to increase you storage space online allowance so you can store more and bigger files.

Thanks you for being our customer

OnlineStorage

(a) Identify **three** items that give this away as a phishing email.

- 1
- 2
- 3

[3]

This was very well-answered with candidates scoring highly.

Question 5 (b)

(b) Explain how Charlie can protect themselves from phishers.

.....

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.....

.....

.....

.....

..... [3]

This was very well-answered with candidates scoring highly.

Question 6 (a) (i)

6 Amit has been told that they should be using cryptography to protect their data.

(a) (i) What is meant by cryptography?

.....

.....

.....

..... [2]

This is a learnt response – to be regurgitated. This however was not the case with few candidates achieving marks. Given that the subject is cyber security, many candidates were unable to give a definition of cryptography.

Question 6 (a) (ii)

(ii) Identify **two** cryptographic methods that Amit could use when transmitting data electronically.

1

.....

2

.....

[2]

This was not answered well with very few candidates aware of different methods of cryptography. As an identification, it required a learnt response that in the majority of candidates was not forthcoming.

Question 6 (b)

(b) Amit is concerned about the stored data being accidentally damaged.

Identify **three** ways the stored data could be accidentally damaged.

1

.....

2

.....

3

.....

[3]

The focus of the question is accidentally damaged, this requires an action that is not deliberate or planned. The most common incorrect response was malware. Although many candidates achieved marks on this question, few could go beyond one or two ways.

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