

**Modified Enlarged 18 pt**

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**

**Thursday 25 May 2023 – Afternoon**

**Level 3 Cambridge Technical in IT**

**05839/05840/05841/05842/05877**

**Unit 3: Cyber security**

**Time allowed: 1 hour plus your additional time allowance**

**You must have:**

**a clean copy of the Pre-release  
(with this document)**

**Please write clearly in black ink.**

**Centre  
number**

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**Candidate  
number**

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**First name(s)** \_\_\_\_\_

**Last name** \_\_\_\_\_

**Date of  
birth**

D	D	M	M	Y	Y	Y	Y
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**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS**

**Use black ink.**

**Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.**

**Answer ALL the questions.**

**Use the Insert to answer the questions in Section A.**

## **INFORMATION**

**The total mark for this paper is 60.**

**The marks for each question are shown in brackets [ ].**

**Quality of extended response will be assessed in questions marked with an asterisk (\*).**

## **ADVICE**

**Read each question carefully before you start your answer.**

**SECTION A**

Use the case study on **PEN PERIMETER** in the **INSERT** to answer the questions in this section.

**Pen Perimeter** has a variety of clients from different organisations.

- 1 (a) Pen Perimeter has been hired by a government department to report on the security of the data it stores.**

- (i) Describe ONE type of state's data that needs to be PROTECTED.**

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**[2]**

- (ii) Identify ONE OTHER type of state's data that needs to be PROTECTED.**

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**[1]**

- (b) One of Pen Perimeter's clients is a healthcare provider.

Identify TWO reasons why an organisation, such as a healthcare provider, might be a **TARGET** for a cyber security threat.

Reason 1 \_\_\_\_\_

\_\_\_\_\_

Reason 2 \_\_\_\_\_

\_\_\_\_\_

[2]

- 2 Pen Perimeter carried out tests for a charity.

A Test Report was created which included recommendations for improvements for the charity's cyber security.

- (a) (i) Identify **THREE DIFFERENT PHYSICAL** based cyber security controls that Pen Perimeter would have tested.

Control 1 \_\_\_\_\_

\_\_\_\_\_

Control 2 \_\_\_\_\_

\_\_\_\_\_

Control 3 \_\_\_\_\_

\_\_\_\_\_

[3]

(ii) Identify TWO DIFFERENT SOFTWARE based cyber security controls that Pen Perimeter would have tested.

Control 1 \_\_\_\_\_

\_\_\_\_\_

Control 2 \_\_\_\_\_

\_\_\_\_\_

[2]

(b)\* Using examples, explain how the cost of implementing the recommendations of the report could OUTWEIGH the benefits. [7]

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**3 Pen Perimeter has been hired by a financial business to carry out a simulated cyber security attack on their network.**

**(a) After containing the incident, the financial business needs to ERADICATE it.**

**Identify TWO ways the incident could be ERADICATED.**

**Way 1** \_\_\_\_\_

\_\_\_\_\_  
**Way 2** \_\_\_\_\_

\_\_\_\_\_  
[2]

**The financial business uses the attack to practise its production of a cyber security incident report.**

**(b) (i) Why is it important to understand if the TARGET of the incident was a particular department or individual?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
[2]



(ii) The incident is given a category.

Draw a line to match EACH incident category to the correct definition. [3]

**Critical**

Inconvenient, loss of efficiency but able to provide services.

**Minor**

Loss of reputation, disruption to services, financial loss.

**Significant**

Organisation is no longer able to provide some critical services to users, lives may be lost.

Minimal impact on systems, services and users.

**(iii) Describe TWO DIFFERENT ways the capability of the attackers could be ESTABLISHED.**

**Way 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Way 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[4]**

**(c) After the incident the financial business UPDATES its documentation.**

**Identify TWO DIFFERENT items of documentation it would UPDATE to assist in future cyber security attacks.**

**Item 1** \_\_\_\_\_

\_\_\_\_\_

**Item 2** \_\_\_\_\_

\_\_\_\_\_

**[2]**

**SECTION B**

You do NOT need the case study to answer these questions.

- 4 (a) (i) What does **CONFIDENTIALITY** of information mean?

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[1]

- (ii) Identify **TWO** measures that can be implemented to ensure the **CONFIDENTIALITY** of information.

Measure 1

Measure 2

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[2]

- (b) (i) What does **INTEGRITY** of information mean?

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[1]

- (ii) Identify TWO measures that can be implemented to ensure the INTEGRITY of information.

Measure 1 \_\_\_\_\_

\_\_\_\_\_

Measure 2 \_\_\_\_\_

\_\_\_\_\_

[2]

- 5 (a) Identify TWO motivations of a cyber-criminal.

Motivation 1 \_\_\_\_\_

\_\_\_\_\_

Motivation 2 \_\_\_\_\_

\_\_\_\_\_

[2]

- (b) For each cyber security incident, identify the **TYPE** of **ATTACKER** who would most likely be involved. [3]

Cyber Security Incident	Type of Attacker
Changing grades in a school	
Employee releasing customer information to a rival firm	
Hacking a company and releasing information on salary gender imbalance	

- (c) One of the targets for cyber security incidents is **INFORMATION**.

Explain how a hacker could use **INFORMATION** about an individual obtained from a cyber security incident.

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[3]

- 6 (a) Explain how **ENCRYPTION** can be used to protect data.

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[3]

- (b) Describe characteristics of **PHYSICAL** cyber security controls that make them suitable for preventing cyber security incidents.

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[3]

**END OF QUESTION PAPER**

**If additional answer space is required, you should use the following lined pages. The question numbers must be clearly shown in the margins – for example, 2(b) or 3(a).**

[illegible]

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## Version 2