



Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

Level 3 Technical Level

IT: CYBER SECURITY

Unit 6 Network and cyber security administration

Friday 25 January 2019

Afternoon

Time allowed: 2 hours

Materials

For this paper you must have:

- a ruler
- a scientific calculator (non-programmable)
- stencils or other drawing equipment (eg flowchart stencils).

For Examiner's Use

Examiner's Initials

Question

Mark

1–5

6

7

8

9

10

11

12

13

14

15

16

17

18

TOTAL

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer each question in the space provided. Do **not** write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- If you need more space use the additional pages at the back of this booklet.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- There are 50 marks for **Section A** and 30 marks for **Section B**. Both sections should be attempted.

Advice

- In all calculations, show clearly how you work out your answer.
- Use diagrams, where appropriate, to clarify your answers.
- You are expected to use a calculator where appropriate.
- You are reminded of the need for good English and clear presentation in your answers.



J A N 1 9 J 5 0 7 6 4 3 5 0 1

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Section AAnswer **all** questions in this section.**0 | 1**

WikiLeaks is an example of 'hacktivism'. In what way is hacktivism different from 'hacking'?

[1 mark]Tick (✓) **one** box.

Hacktivism is only for financial gain.

Hacktivism promotes a political or social agenda.

Hacktivism is legal.

Hacktivism involves putting unwanted 'pop-up' advertisements on to your computer when you are using the Internet.

0 | 2

Computers can protect information in a message by sending it in a code. This involves using

[1 mark]Tick (✓) **one** box.

cryptograms.

cryptography.

cryptonyms.

cryptometrics.



0 2

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0 3

To receive a coded message, the sender and the recipient both need

[1 mark]

Tick (✓) **one** box.

a legend.

a clue.

an index.

a key.

0 4

In 2007, ISO 17799 was renamed ISO 27002. What is ISO 27002 the international code of practice for?

[1 mark]

Tick (✓) **one** box.

Cybernautics security.

Cloud storage security.

Information security management.

Information security for hand-held mobile devices.

0 5

A Virtual Private Network (VPN) allows you to create a private connection over a public network.

Which **one** of the following is a reason for using a VPN?

[1 mark]

Tick (✓) **one** box.

VPN users can be connected securely over the Internet.

A VPN requires a high-level of knowledge and understanding by users.

Equipment from many platforms may work poorly together.

A member of staff using a VPN from a home laptop may result in security issues.

5

Turn over ►



0 3

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0	6
---	---

Give an example of a strong password and explain what makes it strong.

[2 marks]

2

0	7
---	---

Phishing has become very common with thousands of cases every year.

What is meant by the term phishing?

[2 marks]

2

0	8
---	---

Mobile devices such as smartphones and tablets can access the Internet using Wi-Fi such as a hotspot in a café or on a train. Hackers have found wireless networks relatively easy to break into.

Suggest **four** actions that a user can take to make their data more secure when connecting to public wireless networks.

[4 marks]

4



0 4

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0 9

Humans have unique characteristics called biometrics. Biometric devices are often used to authenticate the user.

One example of unique biometric data is a fingerprint.

0 9 . 1

Give **two** other examples of biometric characteristics.

[2 marks]

0 9 . 2

State **one** advantage of using biometrics for authentication.

[1 mark]

0 9 . 3

State **one** disadvantage of using biometrics.

[1 mark]

4

Turn over for the next question

Turn over ►

0 5

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1	0
---	---

The four main stages present in many cyber-attacks are listed below.

State what happens at each stage.

[4 marks]

Survey _____

Delivery _____

Breach _____

Affect _____

4



0 6

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1	1
---	---

Janice Coleman is the network manager for a medium-sized company. Janice keeps a variety of network logs, including an access log.

1	1
---	---

1. 1 State **two** examples of logs that Janice may use **other** than access logs.

[2 marks]

1	1
---	---

1. 2 Give **two** examples of data in **an access log** that Janice might use in her everyday work.

[2 marks]

1	1
---	---

1. 3 Explain how **one** of the data items in your answer to 1. 2 might be useful to Janice in her everyday work.

[2 marks]

6

Turn over ►



0 7

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1 2

The computer software Cain and Abel is often used by IT experts.

1 2

. **1** Explain the purpose of Cain and Abel.

[2 marks]

1 2

. **2** Explain what is meant by cryptanalysis.

[2 marks]

4



0 8

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1	3
---	---

If a business suffers computer hardware damage, for example due to a flood or a fire, it may decide to use a hot, a warm or a cold site to maintain system continuity.

1	3
---	---

.

1

 Explain what is meant by a hot site.

[2 marks]

1	3
---	---

.

2

 Explain what is meant by a cold site.

[2 marks]

1	3
---	---

.

3

 Explain what is meant by a warm site.

[2 marks]

6

Turn over ►



0 9

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1 4

Explain the meaning of a honeypot and a honeynet in network security.

[4 marks]

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1 5

It is important that companies using IT draw up an Acceptable Usage Policy for their employees. Anyone found to breach this policy may be dismissed and led off the premises.

Examples of two instructions from an Acceptable Usage Policy are given below.

- Individuals must not use someone else's user ID and password to access the company's IT systems.
- Individuals must not perform any unauthorised changes to the company's IT systems or information.

1 5 . 1

Suggest **four** more instructions that could be included in an Acceptable Usage Policy.

[4 marks]

1 5 . 2

What is the name of the Act that makes using someone else's ID without consent illegal?

[1 mark]

5

Turn over ►



1 1

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1 6

Explain what is meant by:

1 6

. 1 penetration testing (sometimes called a pen test)

[2 marks]

1 6

. 2 Intrusion Detection Systems (IDS).

[2 marks]

4



1 2

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Section B

Answer **all** questions in this section.

1 | 7

Network policies are designed to protect computer systems from attack. Some network policies are designed specifically to protect computer systems from virus attacks.

17.1

State the antivirus guidelines that should be included in a network policy. Explain why each guideline will help to prevent a virus attack.

[6 marks]

Question 17 continues on the next page

Turn over ►



1 7 . 2 Using specific examples discuss:

- the symptoms and impact of a virus attack
- the potential consequences to a business if network policies are not followed.

[9 marks]

15



Flexible arrangements this year enabled Mrs Kumar to spend much of her week working from home. Mrs Kumar works in Sales, Accounts and Purchasing. Management is concerned that key data would be lost if Mrs Kumar experienced any technical difficulties while working from home. Mrs Kumar has assured management she is following all policies and procedures related to storage and backup and knows what to do in the event of an emergency.

You have been asked to write a formal report detailing:

- what procedures Mrs Kumar should be following day to day
- what Mrs Kumar must do in the event of any issue that might result in loss of data
- examples of backup, protection and storage – make sure Mrs Kumar knows what she needs to do, what backup protocol, what storage option, and what media might be most appropriate
- risks and responsibilities of working from home and the potential consequences to the company of not following this advice.

[15 marks]



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END OF QUESTIONS



If needed, use the following pages to continue your answers. Write the question number beside your answer.

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1 9

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