4 A computer game development company are reviewing their current security solutions.

The company wants employees to be aware of how they can identify phishing.

(a) Describe the process of phishing.

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..... [4]

(b) Give **two** ways an employee could identify phishing.

1 .....

.....

2 .....

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[2]

(c) The company has installed anti-malware software on all employees' computers.

Give **three** examples of malware that anti-malware software can detect.

1 .....

2 .....

3 .....

[3]

(d) The computer game developers use a high-level language to create a computer game.

(i) State what is meant by a high-level language.

.....

..... [1]

(ii) One benefit of using a high-level language is that the code is easy to debug.

Give **two** other benefits of using a high-level language.

1 .....

.....

2 .....

.....
[2]

(iii) One drawback of using a high-level language is that it must be converted to a low-level language before it can be run.

Give **one** other drawback of using a high-level language.

.....

..... [1]

(iv) The computer game developers use an interpreter instead of a compiler when developing the computer game.

Explain why an interpreter would be more appropriate for developing the computer game.

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..... [3]

4 A cyber security company specialises in security solutions that help prevent hackers being successful.

(a) Identify **two** security solutions that can be provided to help prevent hackers being successful.

Explain how each solution helps prevent hackers being successful.

Solution 1 .....

Explanation .....

.....

.....

.....

Solution 2 .....

Explanation .....

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[6]

(b) The company also has a web page that provides information to improve people's awareness of social engineering.

Describe what is meant by social engineering.
Include an example of social engineering in your answer.

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..... [3]

(c) The company's website uses both session cookies and persistent cookies.

(i) State **one** similarity between session cookies and persistent cookies.

.....

..... [1]

(ii) Explain **one** difference between session cookies and persistent cookies.

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..... [2]

8 A company has a website that is suffering a distributed denial of service (DDoS) attack.

(a) Draw and annotate a diagram to show the process of the DDoS.

[5]

(b) Identify a solution that can be used to help prevent the DDoS attack being successful.

..... [1]

6 Draw and annotate a diagram to demonstrate how a firewall works.

[4]

1 Malware can be used to corrupt data stored on a computer.

(a) Tick (✓) **one** box to show which cyber security threat is **not** a type of malware.

A Phishing ☐

B Ransomware ☐

C Virus ☐

D Worm ☐

[1]

(b) Identify **one** other example of malware than those given in **part 1(a)**.

..... [1]

(c) Identify the type of software that is used to find and remove malware from a computer.

..... [1]

8 **(a)** Draw and annotate a diagram that demonstrates the cyber security threat of data interception.

[4]

(b) Identify **one** security solution that will help keep data safe from data interception and state why it will help keep the data safe.

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.....

[2]

8 A manager at a company is concerned about a brute-force attack on its employee user accounts.

(a) Describe how a brute-force attack can be used to gain access to the employee user accounts.

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..... [3]

(b) One possible aim for carrying out a brute-force attack is to install malware onto the company network.

(i) State **two** other aims for carrying out a brute-force attack to gain access to the employee user accounts.

1 .....

.....

2 .....

.....

[2]

(ii) Identify **three** types of malware that could be installed.

1 .....

2 .....

3 .....

[3]

(c) Give **two** security solutions that could be used to help prevent a brute-force attack being successful.

1 .....

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2 .....

.....

[2]

10 A student uses the internet for their schoolwork to research what is meant by pharming.

(a) State the aim of pharming.

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..... [1]

(b) Draw and annotate a diagram to represent the process of pharming.

[4]

(c) The student uses a web browser to access data on the internet.

Explain the purpose of the web browser.

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..... [2]

(d) Storing cookies is one function of the web browser.

Give **three** other functions of the web browser.

1 .....

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2 .....

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3 .....

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[3]

(e) A student visits a website that uses session cookies, instead of persistent cookies.

Explain the difference between session cookies and persistent cookies.

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..... [4]

1 Computers can be infected with malware. Spyware is one example of malware.

(a) Tick (✓) **one** box to show a correct definition of spyware.

A Software that activates a webcam and transmits the video to a third party that outputs it live on a website. ☐

B Software that detects when a password is being entered and then emails the password to a third party. ☐

C Software that records all data entered into a computer, analyses this data to find email addresses and passwords, then posts these to a website. ☐

D Software that records all key presses and transmits these to a third party. ☐

[1]

(b) Complete the table by identifying and describing **two** other examples of malware.

	Malware	**Description**
1	....	....
2	....	....

[6]

(c) Proxy-servers and firewalls have some similar functions.

Identify **two** similarities and **one** difference between proxy-servers and firewalls.

Similarity 1 .....

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Similarity 2 .....

.....

.....

Difference .....

.....

.....

[3]