

QUESTION 1.



6 (a) Viruses, pharming and phishing are all examples of potential Internet security threats.

Explain what is meant by each of these **three** terms.

Virus

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Pharming

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Phishing

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[6]

(b) An online bank requires a client to supply an 8-digit code each time they wish to access their account on the bank's website.

Rather than ask the client to use a keyboard, they are requested to use an on-screen keypad (shown on the right) to input the 8-digit code.

The position of the digits on the keypad can change each time the website is visited.

The client uses a mouse or touch screen to select each of the 8 digits.

2	5	1
6	8	3
9	0	4
	7	

(i) Explain why the bank has chosen to use this method of entering the 8 digits.

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[2]



(ii) Name and describe **another** measure that the bank could introduce to improve the security of their website.

Name

Description

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[2]

QUESTION 2.

2



1 (a) Four statements about cookies are shown in the table below.

Study each statement.

Tick (✓) to show whether the statement is true or false.

Statement	True	False
they are a form of spyware		
they are used only in advertising		
they are used to track browser use		
they act in the same way as a virus		

[4]

(b) Five descriptions and five security issues are shown below.

Draw a line to connect each description to the correct security issue.

Description

Security issue

malicious code installed on the hard drive of a user's computer or on the web server; this code will re-direct user to a fake web site without their consent

hacking

software that gathers information by monitoring key presses on a user's computer and relays the information back to the person who sent the software

pharming

program or code that replicates itself and is designed to amend, delete or copy data and files on a user's computer without their consent

phishing

the act of gaining illegal access to a computer system without the owner's consent

spyware

creator of code sends out a legitimate-looking email in the hope of gathering personal and financial data; it requires the recipient to follow a link in the email or open an attachment

virus

[4]

QUESTION 3.



8 (a) **Five** statements and **three** types of software are shown below.

Draw lines to connect each statement with the correct type of software.

Statement

Type of software

Users have the freedom to pass on the software to friends and family as they wish.

Free software

Users can download this software free of charge, but they cannot modify the source code in any way.

Users are allowed to try out the software for a trial period only before being charged.

Freeware

Users can study the software source code and modify it, where necessary, to meet their own needs, without breaking copyright laws.

Shareware

Users can obtain a free trial version of the software, but this often does not contain all the features of the full version.



(b) Describe **three** ethical issues that should be considered when using computers.

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[3]

(c) Security of data is very important.

Three security issues are viruses, pharming and spyware.

Explain what is meant by each issue.

Viruses:

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Pharming:

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Spyware:

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[6]



(d) Describe **three** tasks carried out by a firewall.

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QUESTION 4.

10



10 Uma is concerned about risks that she may encounter when using the Internet.

Two of the risks she is concerned about are phishing and pharming.

(a) Give **one** similarity and **two** differences between phishing and pharming.

Similarity

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Difference 1

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Difference 2

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[3]

(b) Identify **two** other risks that Uma could encounter when using the Internet.

Risk 1

Risk 2

[2]



(c) Uma uses a firewall to secure the data on her computer.

(i) Uma tells her friend that a firewall can only be software-based.

Tick (✓) to show whether Uma is **Correct** or **Incorrect**.

Correct

Incorrect

[1]

(ii) Describe how the firewall helps to keep Uma's data secure.

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[4]



QUESTION 5.



3 Thomas has an online business that sells homemade furniture. He has a web server and a website for his business.

(a) Describe the role of a web browser in requesting and displaying the web pages of the website.

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..... [3]

(b) Thomas is worried about a denial of service (DoS) attack on his web server.

Describe what happens in a denial of service attack.

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..... [3]

QUESTION 6.



8 Identify whether the **four** statements about file compression are correct by writing in the following table.

Statement	TRUE or FALSE
MIDI files store the actual music notes in a compressed format	
JPEG files are examples of lossless file compression	
MP3 files are, on average, 90% smaller than the music files stored on a CD	
MP4 files are examples of lossy file compression	

[4]

9 (a) Explain what is meant by a denial of service attack.

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.....[2]

(b) Name and describe **two other** potential security threats when using the Internet.

Security threat 1

Description

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Security threat 2

Description

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[4]

QUESTION 7.



4 Phishing and pharming are two examples of online security threats to a computer system.

(a) Explain what is meant by phishing and pharming.

Phishing

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Pharming

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[4]

(b) Identify **two** other online security threats to a computer system.

Security threat 1

Security threat 2

[2]

(c) Give **two** security measures that can help to protect a computer system from online security threats.

Security measure 1

Security measure 2

[2]