

QUESTION 1.

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 2.

11



10 Six security issues and six descriptions are shown below.

Draw a line to link each security issue to its correct description.

Security issue	Description
Pharming	illegal access to a computer system without the owner's consent or knowledge
Phishing	software that gathers information by monitoring key presses on a user's keyboard; the data is sent back to the originator of the software
Viruses	malicious code installed on the hard drive of a user's computer or on a web server; this code will re-direct the user to a fake website without the user's knowledge
Hacking	creator of code sends out a legitimate-looking email in the hope of gathering personal and financial information from the recipient; it requires the user to click on the link in the email or attachment
Spyware	a message given to a web browser by a web server; it is stored in a text file; the message is then sent back to the server each time the browser requests a page from the server
Cookies	program or code that replicates itself; designed to amend, delete or copy data or files on a user's computer; often causes the computer to crash or run slowly

[5]

QUESTION 3.



7 (a) Check digits are used to ensure the accuracy of input data.

A 7-digit code number has an extra digit on the right, called the check digit.

Digit position	1	2	3	4	5	6	7	8
Digit	–	–	–	–	–	–	–	–

The check digit is calculated as follows:

- each digit in the number is multiplied by its digit position
- the seven results are then added together
- this total is divided by 11
- the remainder gives the check digit (if the remainder = 10, the check digit is X)

(i) Calculate the check digit for the following code number. Show all your working.

4 2 4 1 5 0 8 ...

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Check digit [2]

(ii) An operator has just keyed in the following code number:

3 2 4 0 0 4 5 X

Has the operator correctly keyed in the code number?

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Give a reason for your answer.

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[3]



(b) When data are transmitted from one device to another, a parity check is often performed on each byte of data. The parity bit is often the leftmost bit in the byte.

(i) If a system uses even parity, give the parity bit for each of the following bytes:

parity bit

	1	1	0	0	1	1	0
--	---	---	---	---	---	---	---

parity bit

	0	0	0	0	0	0	1
--	---	---	---	---	---	---	---

[2]

(ii) A parity check can often detect corruption of a byte.

Describe a situation in which it **cannot** detect corruption of a byte.

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QUESTION 4.



4 (a) Computer ethics involves a number of different topics.

(i) A student made the following statement on an examination paper:

“It allows a user to have the freedom to run, copy, change and adapt the software, then pass it on to a colleague, friend or family member.”

Identify which computer term the student was describing.

..... [1]

(ii) Explain what is meant by computer ethics.

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..... [3]

(b) The four statements below refer to firewalls and proxy servers.

Study each statement.

Tick (✓) the appropriate column(s) to indicate whether the statement refers to a firewall and/or a proxy server.

Statement	Firewall	Proxy server
Speeds up access of information from a web server by using a cache		
Filters all Internet traffic coming into and out from a user’s computer, intranet or private network		
Helps to prevent malware, including viruses, from entering a user’s computer		
Keeps a list of undesirable websites and IP addresses		

[4]



(c) Explain **three** ways of preventing **accidental** loss or corruption of data.

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[6]