

1. Choose six correct terms from the following list to complete the spaces in the paragraphs below:

- encryption
- file name
- firewall
- HTML tags/text
- IP address
- protocol
- proxy server
- SSL certificate
- web server name

A user enters a URL. The web browser breaks up the URL into three components:

1 .....

2 .....

3 .....

The web server returns the selected web page.

The web browser reads the ..... from the selected page and shows the correctly formatted page on the user's screen.

A ..... is used between the user's computer and the network to examine the data traffic to make sure it meets certain criteria.

To speed up the access to the web pages next time, a ..... is used between the computer and web server; this device uses a cache to store the website home page after it has been accessed for the first time. [6]

(2015-may-11-04)

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

Study each statement.

Tick (✓) to show whether the statement is true or false. [4]

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		

(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]

(2015-may-12-01)

3. (a) State what is meant by the term SSL.

.....  
 .....  
 ..... [1]

- (b) The following stages take place when a user wishes to access a secure website.

Put each stage in sequence by writing the numbers 1 to 6 in the column on the right. The first one has been done for you. [5]

Stage	Sequence number
the encrypted data is then shared securely between the web browser and the web server	
the web browser attempts to connect to a website which is secured by SSL	1
the web server sends the web browser a copy of its SSL certificate	
the web browser requests the web server to identify itself	
the web server will then send back some form of acknowledgement to allow the SSL encrypted session to begin	
the web browser checks whether the SSL certificate is trustworthy; if it is, then the web browser sends a message back to the web server	

(2015-may-12-04)

4. There are a number of security risks associated with using the Internet.

Name three of these risks. For each, state why it is a risk and describe how the risk can be minimised.

Security risk 1 .....

Why it is a risk

.....  
.....  
.....

How to minimise the risk

.....  
.....  
.....

Security risk 2 .....

Why it is a risk

.....  
.....  
.....

How to minimise the risk

.....  
.....  
.....

Security risk 3 .....

Why it is a risk

.....  
.....  
.....

How to minimise the risk

.....  
.....  
..... [9]

(2015-OCT-12-01)

5. Secure socket layer (SSL) is used in the security of information on Internet websites.

(a) State how it is possible for a user to know that a website is secure by looking at the web address. ....

.....[1]

(b) Describe three of the stages a web browser goes through to detect whether a website is secure.

1 .....

.....  
.....

2 .....

.....  
.....

3 .....  
 .....  
 .....[3]  
 (2016-MAY-11-06)

6. Describe what is meant by HTML.

.....  
 .....  
 .....  
 .....  
 .....[3]

(b) The following URL is typed in:

<http://www.cie.org.uk/ComputerSciencePapers>

This URL is composed of three parts.

State the part of this URL that is the:

File name .....

Protocol .....

Web server name ..... [3]

(2016-OCT-12-10)

7. Name each of the potential security issues described in the five statements below:

Statement	Security issue
The act of gaining unauthorised access to a computer system	.....
Program code that can replicate itself with the intention of deleting or corrupting files stored in a computer	.....
A small file sent by a web server to a web browser; every time the user visits the website, data about user preferences is collected	.....
The act of illegally changing the source code of a program so that it can be exploited for another use	.....
Malicious code installed on a user's hard drive or a web server which redirects the user to a fake website without their knowledge	.....

[5]

(2016-OCT-13-02)

8. A company has a number of offices around the world.

Data is transmitted between the offices over the Internet. In order to keep the data safe the company is using Secure Socket Layer (SSL) protocol and a firewall at each office. Explain how SSL protocol and a firewall will keep the company's data safe. SSL protocol

.....  
.....  
.....

Firewall .....  
.....  
.....[4]

- (b) A company stores personal details of its customers on a computer system behind a firewall. Explain, with reasons, what else the company should do to keep this data safe.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... [6]

(2017-MAY-12-08)

9. (a) An example of a Uniform Resource Locator (URL) is:

**http://www.cie.org.uk/index.htm**  
Part 1                      Part 2                      Part 3

Identify the three parts that make up this URL.

Part 1 .....

Part 2 .....

Part 3 ..... [3]

- (b) Describe what is meant by an Internet Protocol (IP) address.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....[4]

(2017-OCT-11-03)

10. Six statements about firewalls are shown.

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

Statement	true (✓)	false (✓)
Firewalls can monitor incoming and outgoing traffic.		
Firewalls operate by checking traffic against a set of rules.		
Firewalls cannot block access to a certain website.		
Firewalls can be software and hardware.		
Firewalls can act as intermediary servers.		
Firewalls can block unauthorised traffic.		

(2017-OCT-11-07)

11. (a) Data is valuable. It needs to be kept secure and it can easily be damaged.

Give three different ways that data can be accidentally damaged.

- 1 .....
- 2 .....
- 3 .....[3]

(b) The Secure Socket Layer (SSL) protocol can be used to securely transmit data in online banking.

State three other different applications that use SSL.

- Application 1 .....
- Application 2 .....
- Application 3 .....[3]

(c) Online banking is increasing in popularity.

Online banking can be a risk as it can raise a number of security issues. SSL can be used as a security method to make online banking safer.

Identify and describe three other security methods that could be used to make online banking safer.

Security method 1

.....

.....

.....

Security method 2

.....

.....  
.....  
.....

Security method 3

.....  
.....  
.....  
..... [6]

(2017-OCT-11-08)