

Revision Sheet

A-Level Computer Science · Unit 6 Security, privacy and data integrity

15 vocabulary items · 34 marks of exam questions (5 questions)

Part 1 · Vocabulary review (15 items). The terms this unit is examined on most. Mark it yourself from the answer key.

Section A · Chinese to English

Write the English word.

1.

[1]
2.

[1]
3.

[1]
4.

[1]
5.

[1]
6.

[1]
7.

[1]
8.

[1]
9.

[1]
10.

[1]
11.

[1]
12.

[1]
13.

[1]
14.

[1]
15.

[1]

Part 2 · Exam questions (34 marks, 5 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

16 Draw **one** line from each security feature to its most appropriate description.

Security feature	Description
firewall	converts data to an alternative form
pharming	redirects a user to a fake website
anti-virus software	verifies the authenticity of data
encryption	scans files on the hard drive for malicious software
	accepts or rejects incoming and outgoing packets based on criteria

[4]

17 A company has several security measures in place to prevent unauthorised access to the data on its computers.

(a) Describe the difference between the security and privacy of data.

[2]

(b) Each employee has a username and password to allow them to log onto a computer. An employee’s access rights to the data on the computers is set to either read-only, or read and write.

Identify **one** other software-based measure that could be used to restrict the access to the data on the computers.

[1]

(c) The company is also concerned about threats posed by networks and the internet.

Identify **two** threats to the data that are posed by networks and the internet.

Threat 1

Threat 2

[2]

18 A teacher is writing examination papers on a laptop computer. The computer is connected to the internet. The teacher is concerned about the security and privacy of the papers.

(a) State the difference between the security of data and the privacy of data.

.....

.....

..... [1]

(b) Identify **and** describe **two** threats to the data. Identify **one** security measure to protect against each threat. Each security measure must be different.

Threat 1

Description

.....

Security measure

Threat 2

Description

.....

Security measure [6]

19 (a) A student uses a networked laptop computer to send an email to a colleague.

(i) Explain how a digital signature ensures the email is authentic.

[2]

(ii) Describe how a firewall protects the data on the computer.

[3]

(b) The student records a sound file.

(i) Explain the effect of increasing the sampling rate on the accuracy of the sound recording.

[2]

(ii) Explain the effect of decreasing the sampling resolution on the file size of the sound recording.

[2]

20 Xanthe wants to maintain the integrity and security of data stored on her computer.

(a) Explain the difference between data security and data integrity.

[2]

(b) Xanthe uses both data validation and data verification when entering data on her computer.

(i) Describe how data validation helps to protect the integrity of the data. Give an example in your answer.

Description

Example

[2]

(ii) Describe how data verification helps to protect the integrity of the data. Give an example in your answer.

Description

Example

[2]

(c) Two malware threats are spyware and viruses.

Give **two** similarities and **one** difference between spyware and a virus.

Similarity 1

Similarity 2

Difference

[3]