# End of Unit Quiz – Unit 1.6 System Security

* 1. The list below contains two types of malware. Tick **two** boxes to identify the two types of malware.

|  |  |
| --- | --- |
| **Malware** | **Tick ()** |
| Sandboxing |  |
| Zombie |  |
| NAT router |  |
| Key logger |  |

* 1. What are **two** methods that could have been used to infect a laptop with malware?

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* 1. What are **two** types of anti-malware that should be used to protect a laptop?

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* 1. How could phishing take place at a call centre?

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* 1. What are **two** potential problems to a call centre if phishing takes place?

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* 1. Describe **one** other example of social engineering that employees at the call centre should be aware of.

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* 1. What is meant by the term ‘brute force attack’?

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* 1. What are **four** features of a strong password?

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* 1. What are **two** measures in addition to a password that could be used to keep a computer’s data secure?

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* 1. What are **three** reasons why companies may be targeted by a denial of service attack?

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* 1. What are **two** measures that a company could take to prepare for a denial of service attack?

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1. It is important that all users of a computer network realise what they can and cannot access on the network. The **table** below lists some actions that a student, a tutor and a network manager have authority to perform on a school network.

Tick **one** box in each row to show which action a student, a tutor and a network manager are authorised to undertake.

|  |  |  |  |
| --- | --- | --- | --- |
| **Action** | **Student** | **Tutor** | **Network manager** |
| Change system settings |  |  |  |
| Access a shared area for students |  |  |  |
| Add or delete network users |  |  |  |
| Access the student’s file and make changes to it |  |  |  |
| Access a shared area for tutors |  |  |  |
| Install software |  |  |  |

1. Josh works in the finance department of a council. He has been asked by his manager to email an important document containing personal and financial information, to Saida, who works at a firm of accountants located in another part of the country.
	1. What is **one** method that a business could use to ensure that sensitive documents will not be read by anyone except the intended recipient?

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* 1. Convert this cipher text into plain text.

**XLI HEXE MW WIGYVI**

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* 1. The **table** belowlists three statements. Tick **one** box in each row to show whether a statement is **True** or **False**.

|  |  |  |
| --- | --- | --- |
| **Statement** | **True** | **False** |
| The Caesar cipher is an example of a substitution cipher. |  |  |
| A private key can be made available to everyone. |  |  |
| Advanced Encryption Standard uses 128-bit, 192-bit or 256-bit keys. |  |  |

* 1. What are **four** reasons why an attacker might want to target an organisation’s database with an SQL injection?

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* 1. What are **two** measures that an organisation should take to guard their software applications from an SQL injection attack?

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1. What are **two** advantages of using a firewall?

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1. Give a comparison of intrusion detection and vulnerability testing.

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1. Write about how penetration testing helps secure the telecommunication company’s computer network.

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**Answers**

* 1. The list below contains two types of malware. Tick **two** boxes to identify the two types of malware.

|  |  |
| --- | --- |
| **Malware** | **Tick ()** |
| Sandboxing |  |
| Zombie | **** |
| NAT router |  |
| Key logger | **** |

* 1. What are **two** methods that could have been used to infect a laptop with malware?

|  |
| --- |
| * Software that was installed from an untrustworthy source, for example, screensavers, etc.
* Existing anti-malware software is out of date
* Out of date system software/application software
* Out of date browser
* Out of date firewall
* Infected removable drives
* Exploitation of a software vulnerability
* Various social engineering techniques, e.g. phishing
* Scareware
* Infected email attachment
* Infected link
* Spam email
* A hacked website
* Fake website
* Popup software
* Illegal file sharing
* Distributed denial of service
* Adware
* Rootkits
 |

* 1. What are **two** types of anti-malware that should be used to protect a laptop?

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| --- |
| * Anti-virus
* Anti-spyware
* Malware scanner
 |

* 1. How could phishing take place at a call centre?

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| * Staff respond to fake email
* Staff respond to fake link
* Staff respond to fake website
* Staff respond to spam
* Staff respond to popup software fake instant messages
* Staff respond to social media messages, ‘likes’, etc.
 |

* 1. What are **two** potential problems to a call centre if phishing takes place?

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| --- |
| * Acquisition of user names and passwords
* Acquisition of financial details/credit card details
* Identity theft
* Data theft
* Staff disclose personal/confidential data
* Financial data theft
 |

* 1. Describe **one** other example of social engineering that employees at the call centre should be aware of.

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| --- |
| * Pharming
* Blagging/pre-texting
* Shoulder surfing
* Baiting scenarios
* Countermeasures
* Tailgating
* Responses to fictitious s
* Quid-pro-quo
* Hoax viruses
 |

* 1. What is meant by the term ‘brute force attack’?

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| --- |
| * An attack that attempts to decode passwords/encryption keys/encrypted data
* All possible/numerous combinations are attempted
* A trial and error method
* Resource/time consuming method
 |

* 1. What are **four** features of a strong password?

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| --- |
| * At least eight characters
* Include upper case
* Include lower case
* Include special characters
* Include numbers
* Does not include a name, company name or user name
* Does not contain a complete word
* Relates to an acronym
 |

* 1. What are **two** measures in addition to a password that could be used to keep a computer’s data secure?

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| --- |
| * Encryption/encrypt data
* Set a PIN/pattern to lock the phone
* Install security software
* Download apps from trusted sources
* Keep the operating software and apps updated
* Log out of sites
* Turn off automatic Wi-Fi connection
* Turn off Bluetooth and NFC when not in use
 |

* 1. What are **three** reasons why companies may be targeted by a denial of service attack?

|  |
| --- |
| * Protest/hacktivism
* Cyber vandalism
* Distraction technique
* Espionage – commercial, industrial. political
* Can lead to malware/data theft if part of a distraction technique
* If a distributed denial of service attack can lead to computer/network control
* Extortion
* Competition between companies
* Make a website unavailable
* Interrupt an organisation’s work
* Suspend an organisation’s work
* Block user requests
 |

* 1. What are **two** measures that a company could take to prepare for a denial of service attack?

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| * Networks should be monitored
* Penetration testing should be undertaken/vulnerabilities should be found
* Vulnerabilities should be fixed/remedied
* A response plan should be produced
 |

1. It is important that all users of a computer network realise what they can and cannot access on the network. The **table** below lists some actions that a student, a tutor and a network manager have authority to perform on a school network.

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| Change system settings |  |  | **** |
| Access a shared area for students | **** |  |  |
| Add or delete network users |  |  | **** |
| Access the student’s file and make changes to it | **** |  |  |
| Access a shared area for tutors |  | **** |  |
| Install software |  |  | **** |

1. Josh works in the finance department of a council. He has been asked by his manager to email an important document containing personal and financial information, to Saida, who works at a firm of accountants located in another part of the country.
2. What is **one** method that a business could use to ensure that sensitive documents will not be read by anyone except the intended recipient?

|  |
| --- |
| Encryption. |

1. Convert this cipher text into plain text.

**XLI HEXE MW WIGYVI**

|  |
| --- |
| The document is secure. |

1. The **table** belowlists three statements. Tick **one** box in each row to show whether a statement is **True** or **False**.

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| --- | --- | --- |
| **Statement** | **True** | **False** |
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| A private key can be made available to everyone. |  | **** |
| Advanced Encryption Standard uses 128-bit, 192-bit or 256-bit keys. | **** |  |

1. What are **four** reasons why an attacker might want to target an organisation’s database with an SQL injection?

|  |
| --- |
| * Access sensitive data
* Steal/retrieve personal data
* Access/steal/retrieve financial data
* Create/read/update/modify/delete data
* Destroy data
* Take control of data
 |

1. What are **two** measures that an organisation should take to guard their software applications from an SQL injection attack?

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| --- |
| * Limit user access/privileges
* Create user accounts
* Apply input sanitation
* Apply an input validation technique
* Apply patches/software updates
* Install web application firewall/strong web application firewall
 |

1. What are **two** advantages of using a firewall?

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| * Controls network traffic/allows data from authorised
* Blocks data from unauthorised sources
* Protects against attackers
* Offers different protection levels
* Protects privacy
* Provides warnings
* Filters advertisements/popups
* Filters web content
 |

1. Give a comparison of intrusion detection and vulnerability testing.

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| * Intrusion detection monitors a network for unauthorised access by an attacker.
* Intrusion detection identifies unauthorised access after an attacker has breached a network’s security.
* Vulnerability testing scans a network for vulnerabilities.
* Vulnerability testing detects vulnerability before an attack occurs.
 |

1. Write about how penetration testing helps secure the telecommunication company’s computer network.

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| * Penetration testing looks for vulnerabilities.
* It attempts to exploit the vulnerabilities that it finds.
* The results of penetration testing are presented to network managers to help them to remedy the vulnerabilities
* It helps to protect a system from cyber attacks
* It identifies and prioritises security risks
* It helps to save money/resources
* It helps to avoid down time
* It helps to protect a company’s reputation
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