# 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?

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| --- |
| * 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?

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| --- |
| * 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 |  |  | **** |
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| 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 data is secure. |

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?

|  |
| --- |
| * 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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