Cyber Security - AQA Computer Science Cheat Sheet

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What is 'cyber security'?

Methods and technologies designed to protect networks, computers and data from attack, damage and unauthorised access.

Threats

Weak/default passwords	These are easily guessed or found through brute force decryption.
Misconfigured access rights	This means that systems/files that should be secure can be accessed by other users.
Removable media (e.g. USBs)	This can bypass security measures (like firewalls), so malware can be installed more easily.
Outdated software	Software that has not been patched is vulnerable to attackers.

In addition to this, **malicious code** and **social engineering** techniques also pose threats.

Cyber Security Threats

Video: http://youtu.be/mJVAofe5m7s?list=PL04uZ7242_M6O_6ITD6ncf7EonVHyBeCm

Methods of Protection

Identity authentication: biometric, passwords, two-step authentication

CAPTCHA (human or robot test)

Anti-Virus software (keep up-to-date)

Updating software and installing patches

Social Engineering

Social engineering	The process of manipulating people into undertaking certain actions or disclosing confidential information.
Blagging or **Pretexting**	Creating a fictional scenario in order to obtain a user's personal information, then using this information for malicious purposes.
Phishing	Contacting users (usually through fraudulent emails that mimic a legitimate organisations) to cause users to disclose personal information (e.g. usernames, passwords)
Pharming	Setting up and guiding users to a bogus website that is visually identical to a legitimate one, allowing the attacker to gain login details.
Shouldering or **Shoulder surfing**	Spying' on people, usually while they're logging in to accounts or using an ATM, to find sensitive information (e.g. passwords, PINs).

Phishing and Pharming

Video: http://youtu.be/pSJnZaHhvGE

Penetration Testing

What is **penetration testing**?

> Attempting to gain access to resources without knowledge of login details and other normal means of access, in order to test defences.

What is the difference between **black-box** and **white-box** penetration testing?

> **White-box** penetration is where the tester already has some knowledge of the target system. This simulates an attack by a malicious insider. **Black-box** is where they have no prior knowledge. This simulates external hacking or cyber warfare.

Malware

Malware	Dangerous or intrusive software.
Virus	Malicious program that duplicates itself once inside a computer or network.
Trojan	A malicious program disguised as a legitimate one to trick users into installing it.
Spyware	Software enabling attackers to obtain information about another's computer activities by transmitting data from their hard drive.
Ad ware	Software that automatically displays advertisments when a user is online, generating revenue for the attacker.

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