

Questions

Network users must be authenticated before they can gain access to a network.

1) Explain the term “authentication” in relation to a computer network. [2]

2) Passwords can be used to confirm a person is who they say they are. Some users choose weak passwords such as “12345”.
a) Apart from the user’s choice of password, explain **three** other possible weaknesses of passwords. [6]

b) Give **three** ways a user could choose a secure password. [3]

c) Apart from any answers you gave to (b), give **two** rules for passwords that could be enforced by a computer system. [2]

3) A chain of shops selling clothes uses access rights to control who has access to data within a computer system. Staff on the shop floor have read-only access to the price of the clothes.
a) Apart from read-only, state **two** other access rights staff may have. [2]

b) Give **two** reasons why the staff on the shop floor only have read-only access to the price of the clothes. [2]

Secure websites use encryption as part of the HTTPS protocol.

4) a) Define the term “encryption”. [1]

b) Explain why encryption is needed on a wireless network. [2]

A firewall has been set up on a home router.

5) Explain how a firewall protects a home network from a cyber-attack. [2]

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6) Software can be used to protect computer systems from cyber-attacks.

a) Explain the importance of automatic software updates. [3]

b) Give **two** functions of anti-malware software. [2]

c) Explain why anti-malware system may not prevent an attack from the use of malicious code. [2]

Some organisations use penetration testing to find security flaws in their computer systems.

7) Describe one method of penetration testing. [3]