

A-Level Computer Science

Name: _____ Score: _____

1. Which best describes data "integrity"?

- ☐ the data is accurate and complete (not corrupted)
- ☐ only authorised people can access the data
- ☐ a person controls who sees their personal data
- ☐ the data is encrypted

2. A firewall mainly:

- ☐ filters network traffic by rules, blocking unwanted connections
- ☐ encrypts the hard disk
- ☐ scans files for viruses
- ☐ backs up data off-site

3. Checking that a month entered is between 1 and 12 is a:

- ☐ range check
- ☐ presence check
- ☐ format check
- ☐ check digit

4. How does a worm differ from a virus?

- ☐ a worm spreads over networks by itself, with no user action
- ☐ a worm needs the user to run an infected program
- ☐ a worm cannot copy itself
- ☐ a worm only shows adverts

5. The best defence against data being intercepted in transit is to:

- ☐ encrypt it (e.g. with HTTPS or a VPN)
- ☐ use a longer password
- ☐ install antivirus
- ☐ add a CAPTCHA

6. Malware that encrypts your files and demands payment for the key is called _____.

7. Symmetric encryption uses one shared key, while asymmetric encryption uses a public key to encrypt and a private key to decrypt.
- ☐ True ☐ False
8. Privacy is about a person controlling who sees their personal data, while security is about stopping unauthorised access.
- ☐ True ☐ False
9. Verification proves the data was copied or entered without change — but not that the value is factually correct.
- ☐ True ☐ False
10. An extra digit computed from the others to catch a mistyped number (as on ISBNs and card numbers) is a _____ digit.

1. the data is accurate and complete (not corrupted)

Integrity = accurate and complete. Security = blocking unauthorised access; privacy = control over personal data.

2. filters network traffic by rules, blocking unwanted connections

A firewall controls which network traffic is allowed in or out, by a set of rules.

3. range check

A range check confirms a value lies within sensible limits.

4. a worm spreads over networks by itself, with no user action

A worm self-propagates across networks without user action; a virus needs an infected program to be run.

5. encrypt it (e.g. with HTTPS or a VPN)

Encrypted data intercepted in transit is useless without the key. Authentication and antivirus address different threats.

6. ransomware

Ransomware encrypts the victim's files and demands a ransom for the decryption key.

7. True

That public/private split is what lets asymmetric encryption solve the problem of sharing a key safely.

8. True

They overlap but differ: security blocks intruders; privacy is control over personal data; integrity is about accuracy.

9. True

Double entry / checksums prove the data arrived unchanged; only a human or a cross-check can confirm it is actually true.

10. check

A check digit is recomputed from the rest and compared, catching most single-digit and transposition errors.