

A-Level Computer Science

Name: \_\_\_\_\_ Score: \_\_\_\_\_

1. Which best describes data "integrity"?

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

2. Which measures protect a standalone PC that is never networked? Select **all** that apply.

- ☐ a strong password and a locked screen
- ☐ audit logs of network log-ins
- ☐ a backup to separate media kept off-site
- ☐ up-to-date antivirus software

*Tick every correct option.*

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

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

4. Privacy is about a person controlling who sees their personal data, while security is about stopping unauthorised access.

- ☐ True    ☐ False

5. A firewall mainly:

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

6. An extra digit computed from the others to catch a mistyped number (as on ISBNs and card numbers) is a \_\_\_\_\_ digit.

\_\_\_\_\_

7. Why must a school keep its computer **system** secure, not only its data? Select **all** that apply.

- ☐ it could be locked with ransomware
- ☐ an intruder could install malware on it
- ☐ a secure system makes the stored data more accurate
- ☐ a compromised system can be used to attack other systems

*Tick every correct option.*

8. A code from a phone app is an example of which authentication factor?

- ☐ something you know
- ☐ something you guess
- ☐ something you have
- ☐ something you are

9. Why can validation still let bad data through?

- ☐ validation always rejects correct data
- ☐ data can be the right format but factually wrong (e.g. "Bob" for "Bib")
- ☐ validation needs the internet
- ☐ validation only works on numbers

10. Malware that encrypts your files and demands payment for the key is called \_\_\_\_\_.

\_\_\_\_\_

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

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

**2. a strong password and a locked screen; a backup to separate media kept off-site; up-to-date antivirus software**

Malware still arrives on USB sticks and downloads, and disks still fail, so password, antivirus and backups apply. Network log-in auditing is a networked-PC measure.

**3. range check**

A range check confirms a value lies within sensible limits.

**4. True**

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

**5. filters network traffic by rules, blocking unwanted connections**

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

**6. check**

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

**7. it could be locked with ransomware; an intruder could install malware on it; a compromised system can be used to attack other systems**

System security is the first line of defence: a compromised machine attacks, steals and can be held to ransom. Accuracy is integrity, a different property.

**8. something you have**

A token/phone code is "something you have". Two-factor combines it with a password ("know") or biometric ("are").

**9. data can be the right format but factually wrong (e.g. "Bob" for "Bib")**

Validation checks the form, not the truth – a correctly formatted but wrong value passes.

**10. ransomware**

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