

## 6 Security, privacy and data integrity – Part 1 —Answers

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### Answers

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- 6.1** A password (or PIN, fingerprint, two-factor code, security question).
- 6.2** It scrambles the data so it cannot be understood without the correct key.
- 6.3** Malware is harmful software designed to damage or gain access to a system. Example: virus, worm, Trojan, ransomware.
- 6.4** Validation checks the data is sensible/reasonable as it is entered; verification checks the data matches the original (was entered/copied correctly).
- 6.5** There are four 1s in 1010101 —already even —so the parity bit is 0.
- 6.6** Parity only counts whether the number of 1s is odd or even. Flipping two bits changes the count by two, so it stays odd/even as before —the check still passes and the error is missed.
- 6.7** Any two, e.g.: encryption (protects passwords if the traffic or database is intercepted); two-factor authentication (protects against a stolen password alone); a firewall (blocks unwanted access to the server).