Summative assessment – Answers

## Computer systems

Q1. An electricity company is developing a new smart meter to help customers monitor and reduce their energy consumption. Which **two** of the following would be suitable outputdevices for the meter?

* Temperature sensor
* LCD display
* Microphone
* Speaker
* Keyboard

Q2. Which of the following statements most accurately describes how a passive cooling system works?

1. **The speed that components operate at is reduced and heat sinks or vents are used to allow heat to dissipate**
2. A fan is used to circulate air or a pump is used to distribute water in order to cool components
3. Components are submerged in mineral oil, which acts as a heat transfer fluid to dissipate heat away from components.

Q3. Which of the following statements most accurately describes a real-time operating system?

1. Multiple applications can be run simultaneously
2. **Uses a priority-based scheduling algorithm, which assigns the highest priority to tasks that require immediate attention**
3. Processes large batches of data in sequential order
4. Manages and controls a computer network, enabling multiple computers to communicate and share resources

Q4. A developer wants to use an integrated development environment (IDE) to write and debug a new program. State **two** features that an IDE can provide that would support the developer.

Your answer may include one of these: code editing, autocomplete, syntax checking, keyword highlighting, debugging tools, runtime environment, and/or testing tools.

Q5. Which **three** of the following are factors that can affect the performance of a processor?

* Operating system
* Cache size
* Manufacturer
* Clock speed
* Number of cores

Q6. Microsoft Windows and macOS are both examples of operating systems.Name **two** roles of an operating system.

Answers include: memory management, program management, user interaction, processor management, handling input and output, security, error handling, and/or file management.

Q7. A parcel delivery company gives their delivery drivers smartphones so they can view their delivery schedule for the day and record proof of delivery. Explain **one** suitable operating system for the smartphones.

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| A mobile operating system would be most suitable for the delivery drivers smartphones as it is designed for mobile devices such as smartphones or tablets.  The mobile operating system provides features such as touch-based user interfaces and voice recognition which makes it easy for users to navigate and interact with the device. The mobile operating system also maintains network connectivity when moving between network access points, so as the drivers move from one delivery location to another, they will not lose connectivity.  The operating system will also provide security features such as facial recognition and password protection. This would allow the delivery drivers to ensure their device is secure and customers’ information is kept secure when they are not using the smartphone. |