

3 A drone is used to search for lost animals. The drone is a flying device that can be autonomous or operated using a remote control.



(a) The drone is a robot.

Give **two** characteristics of the drone that identify it as a robot.

- 1
- 2
- [2]

(b) The drone has a built-in system to stop it from crashing into objects, for example a tree. The system uses sensors and a microprocessor.

- (i) Identify **one** sensor that could be built into the drone to detect if it is near an object.
- [1]
- (ii) State what is meant by a microprocessor.
- [1]

(iii) Explain how the sensor and microprocessor work together to stop the drone crashing into an object.

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- [4]

(c) The drone has a digital camera that records a video while the drone is flying.

The drone can be connected to a computer using a universal serial bus (USB) interface to transfer the video recorded by the digital camera.

- (i) State what is meant by a USB interface.
- [1]
- (ii) Explain how a USB interface is used to transmit data.
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- [2]