4.9.2.3 Wireless Networking

1) A family uses a wireless computer network at home.

Describe **two** security measures that the family should put in place to ensure that the wireless access point is secure **and** explain how these measures will make wireless connections to the access point more secure.

[2 marks]

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2) A school has installed a wireless network with multiple wireless access points.

a) What hardware component is needed for each device that is going to be connected to the wireless network?

[1 mark]

A student is trying to use his own mobile device on the school network. He has all the necessary hardware and software, all the hardware devices are working correctly, and he knows the correct SSID and WPA2 key for the school network. However, he is still not able to connect to the wireless network.

b) Describe a security measure, other than logging in, that the school might have put in place that is preventing this student from connecting his own mobile device to the network.

[3 marks]

c) Explain why preventing students from using their own mobile devices on the wireless network is likely to improve the performance of the school network.

[2 marks]

d) Explain the role of a Service Set Identifier (SSID) in wireless networking.

[2 marks]

e) WPA2 is an example of a protocol. Explain what is meant by a protocol.

[2 marks]

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3) Explain how disabling SSID (Service Set Identifier) broadcasting can increase the security of a wireless network.

[2 marks]

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4) Explain how the use of a MAC (Media Access Control) address allow list can increase the security of a wireless network.

[2 marks]

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5) Mobile phones and other devices can connect to a network via the wireless access point. The wireless connection uses the CSMA/CA protocol with Request to Send/Clear to Send (RTS/CTS).

A laptop connected to the wireless access point has data to send the other computer.

Explain how the CSMA/CA protocol with RTS/CTS will be used during this transmission

[6 marks]
