0 1 A network with a physical star topology can have a logical bus topology.

0 1 . 1 Describe the difference between a physical and a logical topology.

[2 marks]

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0 1 . 2 Explain the operation of a physical star topology.

[2 marks]

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A new bank is setting up an internal network.

0 1 . 3 Two types of networking are client-server and peer-to-peer. With reference to the needs of the bank and the properties of the two types of networking, explain why the bank should implement a client-server rather than a peer-to-peer network.

[6 marks]

0 2 Three students share a house when they go to university and have set up a peer-to-peer network between their computers for sharing files and playing multi-user games.

0 2 . 1 Explain why a peer-to-peer network might be a better choice for the students than a client-server network.

[2 marks]

0 2 . 2 Discuss how encrypting data with WPA/WPA2, disabling SSID broadcasting and MAC address whitelisting could enhance the security of a WiFi network.

[3 marks]

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0 2 . 3 When transmitting data, the wireless network uses the following systems:

- Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) with Request to Send/Clear to Send (RTS/CTS)
- Majority Voting.

Explain the process the transmitting device will go through to transmit data and what the receiving device would then do when it receives data.

[8 marks]

0 3 . 1   Explain the operation of a logical bus network topology.

[3 marks]

0 4 . 1   Explain how a physical star topology can behave logically as a bus network.

[2 marks]

0 5 . 1 Explain the purpose of a Service Set Identifier (SSID) in wireless networking **and** how disabling SSID broadcasting can make a network more secure.

[2 marks]

0 5 . 2 Explain the role of the security protocol WPA2 in wireless networking.

[2 marks]

0 5 . 3 MAC (Media Access Control) address filtering is another method that can be used to make a wireless network more secure by only allowing devices with a MAC address that is on a list of allowed addresses to use the network.

Describe **two** reasons why using this method would be an inappropriate choice for a coffee shop that is providing Internet access to its customers.

[2 marks]

0 6 . 1   Explain the operation of a physical star network topology.

[2 marks]

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0 6 . 2   Explain how client-server networking operates.

[2 marks]

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0 7 . 1 Describe the difference between baud rate and bit rate.

[2 marks]

0 7 . 2 A photographer wants to create a large file sharing network to allow thousands of photographers to share their photos with each other for free.

State **two** reasons why the photographer may choose to use a peer-to-peer network rather than a client-server network.

[2 marks]

0 7 . 3 Explain the purpose of a Service Set Identifier (SSID).

[1 mark]

0 7 . 4 Explain how disabling SSID broadcasting can increase the security of a wireless network.

[2 marks]