Level 2 Networking Principles (7540-002)

Systems and Principles
Assignment guide for Candidates
Assignment B

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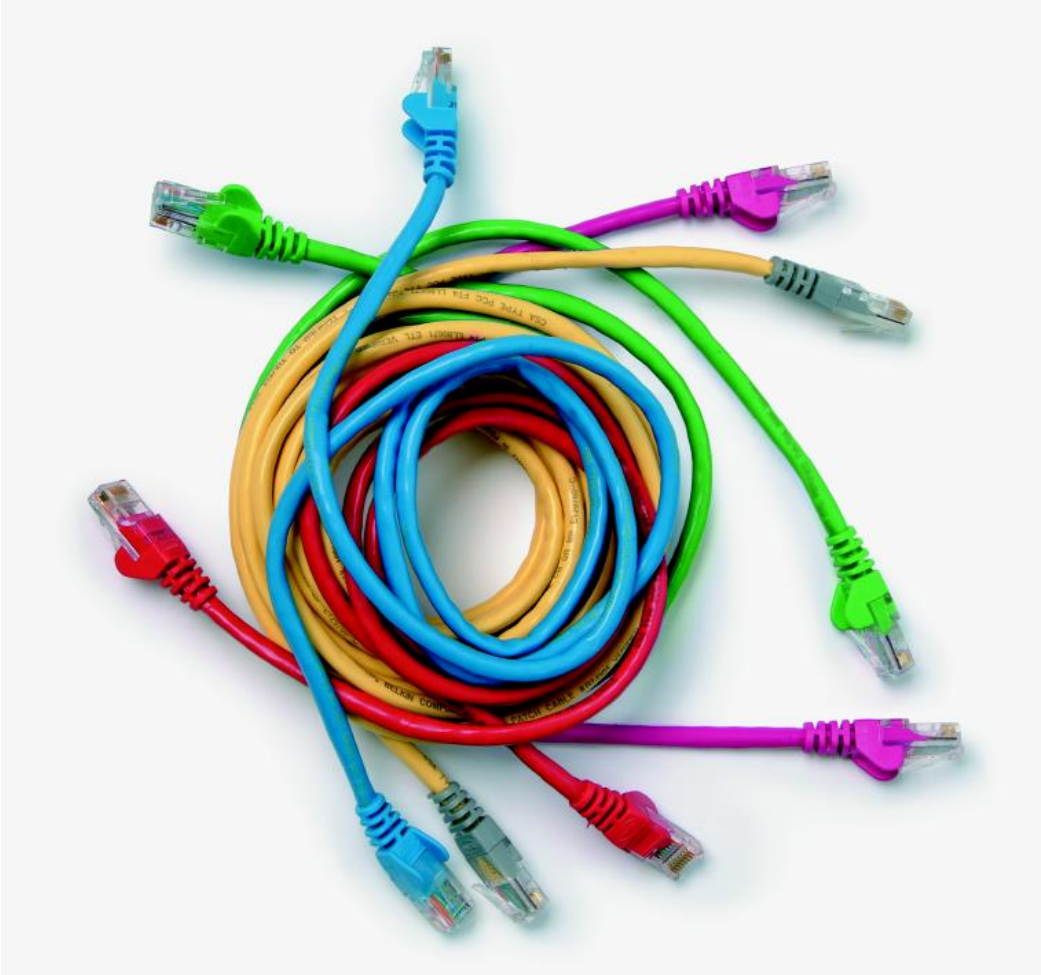

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Introduction – Information for Candidates

About this document
This assignment comprises all of the assessment for Level 2 Networking Principles (7540-002).

Health and safety
You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance
The recommended time allowance for this assignment is **2 and a half hours**.

Level 2 Networking Principles (7540-002)

Candidate Instructions

Time allowance: 2 and a half hours

Assignment set up:

This assignment is made up of **four** tasks:

- Task A – The OSI Model and TCP/IP suite
- Task B – Network Topologies and Transmission Systems
- Task C – Media access control methods in a LAN
- Task D – Advantages and disadvantages of different types of network

Scenario

You are employed by Signom Networks, a company that provides installation and technical support services for clients networks. They regularly take on a number of apprentices and guide them through their studies. In preparation for a new apprentice intake, you have been tasked with producing information for a technical handbook for new apprentices.

You may use a format of your choice to provide the information for the handbook.

Task A – The OSI Model and TCP/IP suite

In the information for this section of the handbook, you should identify the following:

- what the apprentices need to learn about the OSI Model
- protocols that make up the TCP/IP Suite
- the types of addresses used on network

1 For **each** of the following network topologies,

-Mesh
-Star
-Bus

- Draw/ sketch the network
- Label the server in **each** diagram

2 Using the **three** diagrams provided by the assessor, write on the diagram the name / type of cable and the name / type of connector.

3 Briefly describe the **four** main types of Wireless LAN.

4 Using the diagram provided by the assessor, identify the following components and briefly describe their function:
- Interface controller
- Repeater
- passive, active and intelligent hubs
- Bridge
- Switch
- Router
- Gateway.

5 Briefly explain the 5-4-3 rule of network design.

Task B – Network Topologies and Transmission Systems

In this task, you will provide information that use diagrams as well as identifying some of the key points in Network Topologies and Wireless networks, for use on the handbook.

1 Provide a flow diagram which identifies the layers of the OSI model. Include a brief explanation of the functions of each layer.

2 List **eight** of the protocols that make up the TCP/IP suite of protocols.

3 Identify **two** types of addresses used in networks and briefly explain why they are used.

Task C – Media access control methods in a LAN

In Task C you will need to provide information on the different media access control methods used in a LAN

1 List **three** types of media access control methods commonly used in a LAN.

2 Briefly explain what is meant by a collision in a network and give one brief example of how a network can deal with it.

3 Briefly explain the difference between a Token Bus and a Token Ring, identifying how the token operates in each.

4 Briefly explain the line encoding used in CSMA/CD and CSMA/CA networks

5 Identify **two** limitations of CSMA/CA networks.

Task D – Advantages and disadvantages of different types of network

For Task D you will need to provide information about some of the advantages and disadvantages of different types of network.

1 Identify a property of:

- peer to peer networks
- client server networks.

2 Identify a sharing advantage and sharing disadvantage of:

- peer to peer networks
- client server networks.

3 Identify a security aspect of:

- peer to peer networks
- client server networks.

4 Identify the uses and limitations of a null modem connection.

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

End of assignment

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