Level 2 Install, configure and test ICT networks (7540-235)

Systems and Principles
Assignment guide for Candidates
Assignment C

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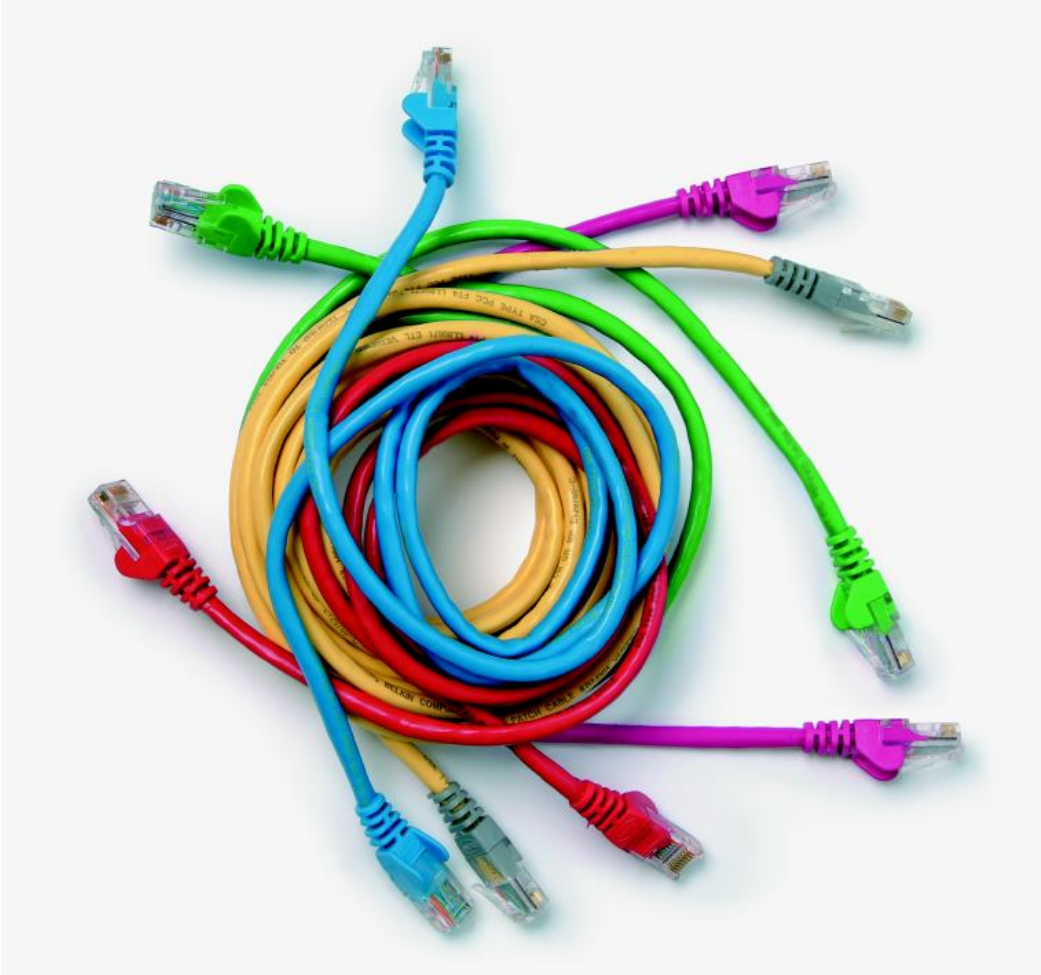

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Contents

Level 2 Install, configure and test ICT networks (7540-235)

Assignment C

Introduction – Information for Candidates	2
Candidate instructions	3

Level 2 Install, configure and test ICT networks (7540-235) Assignment C

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 2 Install, configure and test ICT networks (7540-235).

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 **4 hours**.

Time allowance: 4 hours

Assignment set up:

This assignment is made up of **four** tasks
Task A – Select suitable hardware and software for a wireless network
Task B – Construct a wireless network
Task C – Test the network
Task D – Short answer questions

Scenario

You work as a network support technician in a publishing company that is planning to move 10 staff into a separate building. For technical reasons, the management has decided that this group should have a separate, private network using wireless technology, with one connection to the main network via the Internet. You have been asked to install and set up the wireless network for this group, ensuring that it is safe and secure to use.

Task A – Select suitable hardware and software for a wireless network

1 **Research the options for networks using IEEE 802.XXX and write down brief details of three alternative standards that you could use for wireless networking. Include the speed of each standard.**

2 State the **most** suitable standard that will allow the exchange of large data files within the workgroup giving **one** reason for your decision.

3 Select **one** network topology (ad hoc or infrastructure) that would be the **most** appropriate and give **one** reason why.

4 From the hardware and software provided by your Assessor, select items that you will need to set up the wireless network using two computers and connecting it to the main network using a Cat5 patch lead and Ethernet switch.

Task B – Construct a wireless network

1 Use appropriate tools and safety/ESD protection equipment to prepare two computers to connect to the wireless network.

a) Disconnect the computers from the power supply.
b) Install the necessary hardware into the computers.
c) Make any required connections.

2 Ask your Assessor to check the safety of your installation. After approval, connect the computers to the power supply, switch them on and boot up.

3 Install the drivers and other software as necessary onto the two computers.

4 Configure the wireless network security settings as indicated by your Assessor. Record all configuration settings.

5 Test the wireless network to confirm that it operates correctly. Record the tests you perform and the results.

Task C – Test the network

1 Use standard command line utilities to confirm the integrity of the network. Take a screen print of the results.

2 Download onto one PC the data files as indicated by your Assessor and organise them into a logical directory structure according to title and file owner.

3 Copy the directory structure over to the other PC using the network.

Task D – Short answer questions

Q1 State three different security measures that would normally be used to protect a computer network. Briefly explain the reason for each measure and how it is applied.

Q2 Describe what is meant by the term **firewall.** Briefly explain why it is needed **and** how it adds to a network's security.

Q3 Describe **three** common problems that you might come across when you install or operate a computer network. Briefly describe what effect they might have on the network's performance or operation.

Q4 Briefly describe the function of the following OSI Layers.

a) Layer 4 (Transport).
b) Layer 3 (Network).

Name a very commonly used pair of protocols that operate in these layers.

Q5 Identify the class of IP address each of the following falls into

a) 192.168.1.1
b) 98.127.30.12
c) 222.255.255.1

Q6 Briefly explain what a subnet mask does (eg 255.255.255.0).

Q7 Briefly explain what a MAC Address is.

1 Hand all paperwork and removable storage media to your Assessor. Ensure that your name is clearly identified on your work.

2 Sign above your name and hand all paperwork to your Assessor.

End of assignment

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