Level 3 Testing ICT systems 3 (7266/7267-505/7540-321)

e-Quals
Assignment guide for Candidates
Assignment C

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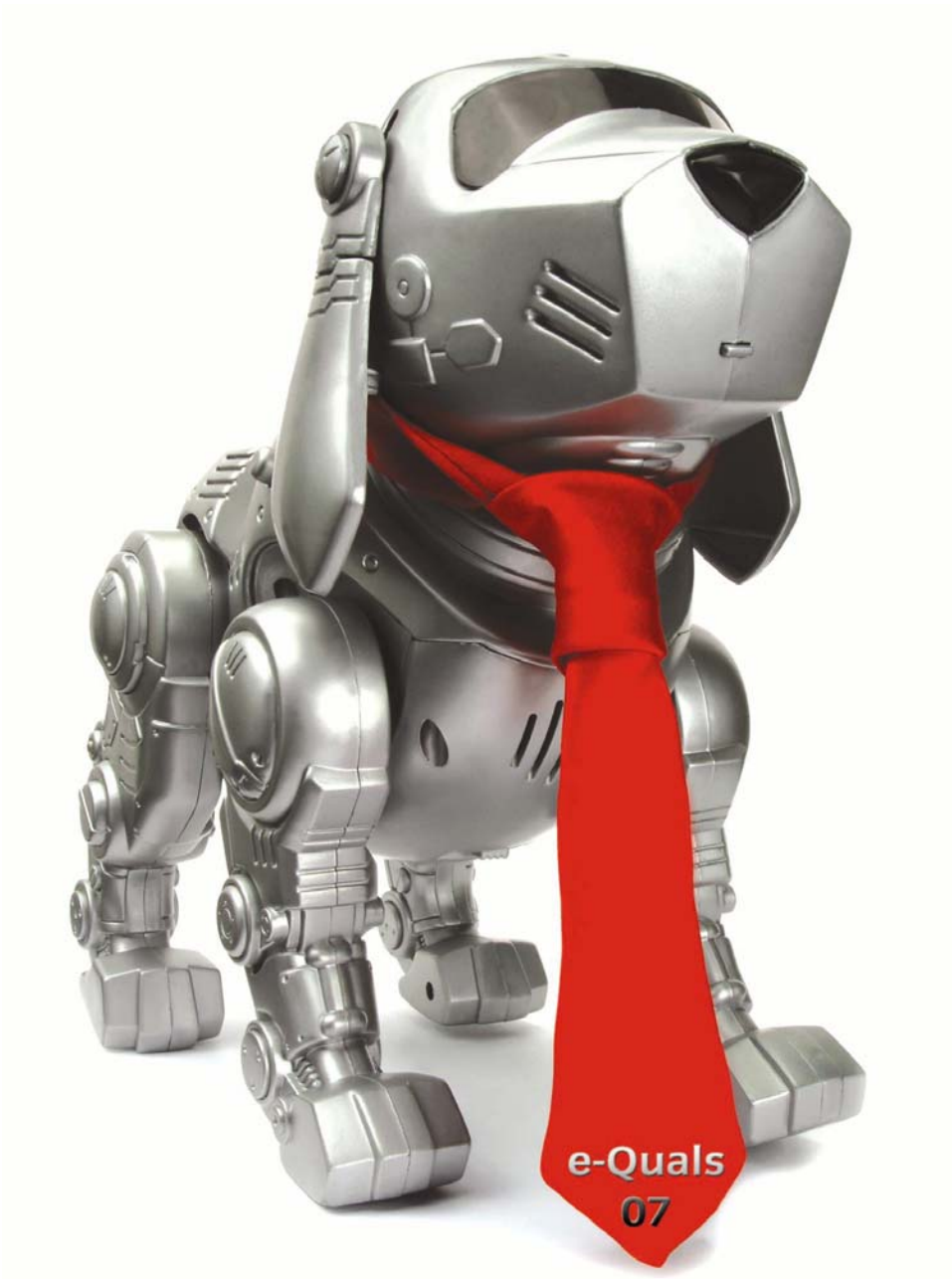

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Contents

Introduction – Information for Candidates	2
Level 3 Testing ICT systems 3 (7266/7267-505/7540-321)	3
Candidate instructions	3

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Assignment C

Introduction – Information for Candidates

About this document

This assignment comprises tall of the assessment for Level 3 Testing ICT systems 3 (7266/7267-505/7540-321).

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 **5 hours**.

Level 3 Testing ICT systems 3 (7266/7267-505/7540-321) Candidate instructions

Time allowance: 5 hours

Assignment set up:

This assignment is made up of **three** tasks

- Task A – Gather system information and design a test plan
- Task B – Carry out a planned test schedule
- Task C – Compile a test report and answer underpinning knowledge questions

Scenario

You work as a senior IT technician in a large manufacturing company. The management want to improve the way that shop floor supervisors access the company network to maintain production records and obtain information. You have been asked to build and test a hybrid wireless/Ethernet network to achieve this. You have built a trial system, which you are now going to test, to see how it performs. Your manager has asked for a report with the test details.

Task A – Gather system information and design a test plan

Two particular reasons for testing the equipment are security of the wireless links and the capacity of the combined system to carry high volumes of traffic at certain times. You should ensure that these items feature in your testing plan. The information you use in this task should be obtained from a variety of sources such as the Internet and manufacturers' support materials.

1 Extract the system information that you think is relevant about the client PCs, the wireless hub and security settings. Present this information graphically or as a list.

2 Using the information obtained in Task A1, decide upon suitable test and monitoring activities that would give a good indication of system performance in

- wireless security
- wireless signal strength (eg error rates, positioning of antenna etc)
- handling data throughput over wireless and Ethernet.

Make a list of the diagnostic software and any test hardware you would ideally need. Include **three** hardware devices and **three** software utilities.

3 Produce a test plan for the network using the information obtained in Task A1, the test and monitoring activities from Task A2 and additional information obtained from other sources. The test plan must include a combination of **six** tests and monitoring operations that will supply the required data.

The plan must include tests using 'open' wireless security and **one** other type (eg WEP, WPA). Include details of any third party testing and monitoring software you intend to use.

Task B – Carry out a planned test schedule

In this task, you will be expected to use test and monitoring software.

1 Using the backup software provided by your Assessor, back up each system configuration in turn to a suitable medium and clearly name the backup files.

2 Carry out the planned test schedule, making adjustments to the system configuration as necessary, to get the best performance from the system. Record the adjustments and the results of each test.

3 Restore the system configuration and user settings to their former state. Record using screen prints.

Task C – Compile a test report and answer underpinning knowledge questions

1 Using the data collected in Tasks A and B, compile a short written report detailing

- faults found during the tests
- system performance in various configurations and positions of the wireless hub
- recommended configuration(s) and limitations of each
- actual system performance compared with expected performance
- configuration changes made to improve performance during the tests
- remaining shortfalls in performance
- recommended upgrade/modification options to improve performance.

Q1 Briefly describe the characteristics and function of each of the following items of system hardware

- Wireless hub
- Ethernet card
- Ethernet switch

Q2 State **three** diagnostic or functional tests that might cause problems with data and system settings etc. Explain why in **each** case.

Q3 Name **four** items of hardware test equipment used to test or monitor IT systems and networking components. Briefly describe the purpose and function of **each**.

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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