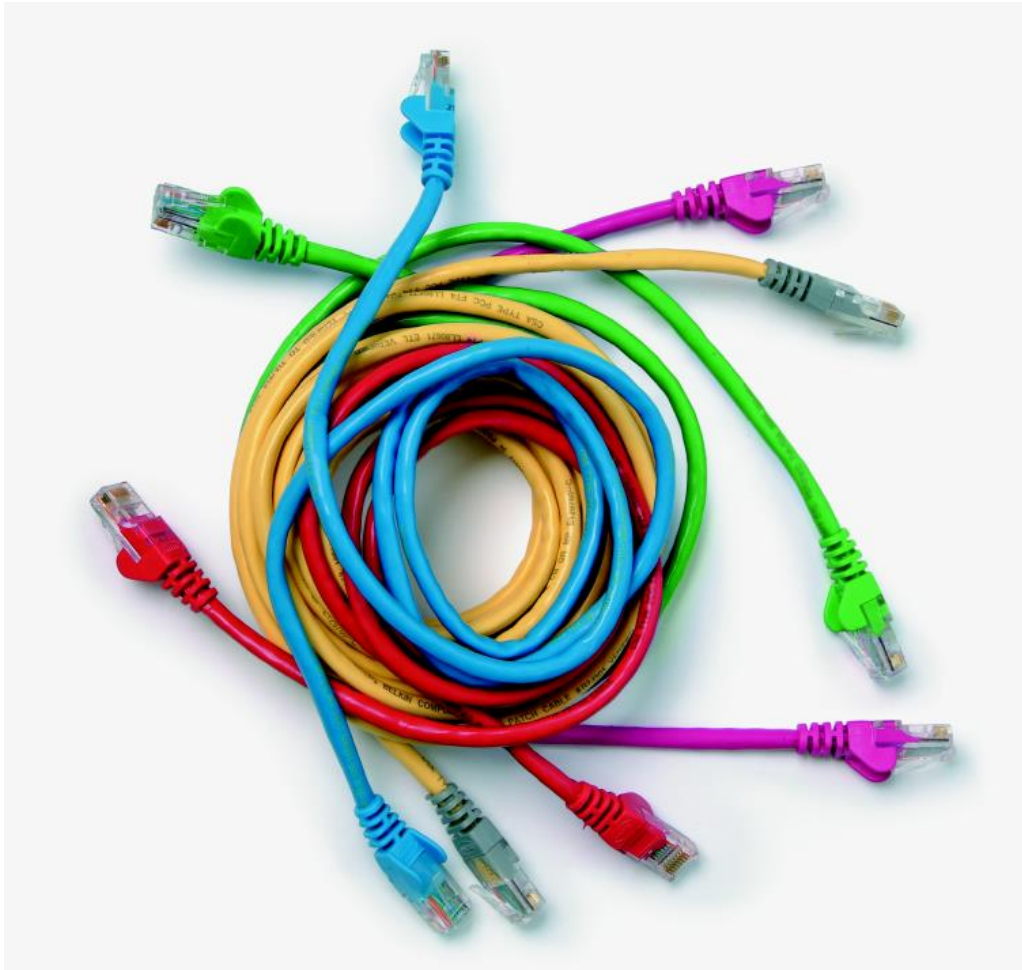


Level 2 Systems architecture (7540-013)

Assignment guide for Candidates

Assignment B



About City & Guilds

City & Guilds is the UK's leading provider of vocational qualifications, offering over 500 awards across a wide range of industries, and progressing from entry level to the highest levels of professional achievement. With over 8500 centres in 100 countries, City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.

City & Guilds Group

The City & Guilds Group includes City & Guilds, ILM (the Institute of Leadership & Management) which provides management qualifications, learning materials and membership services, NPTC which offers land-based qualifications and membership services, and HAB (the Hospitality Awarding Body). City & Guilds also manages the Engineering Council Examinations on behalf of the Engineering Council.

Equal opportunities

City & Guilds fully supports the principle of equal opportunities and we are committed to satisfying this principle in all our activities and published material. A copy of our equal opportunities policy statement is available on the City & Guilds website.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 2010 and may not be copied, reproduced or distributed without prior written consent.

However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a locked PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification

The *Standard Copying Conditions* on the City & Guilds website also apply.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council.

Publications

City & Guilds publications are available on the City & Guilds website or from our Publications Sales department at the address below or by telephoning +44 (0)20 7294 2850 or faxing +44 (0)20 7294 3387.

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

City & Guilds

1 Giltspur Street

London EC1A 9DD

T +44 (0)844 543 0000 (Centres)

T +44 (0)844 543 0033 (Learners)

www.cityandguilds.com

learnersupport@cityandguilds.com

Contents

Level 2 Systems architecture (7540-013)

Assignment B

Introduction – Information for Candidates	2
Candidate instructions	3

Level 2 Systems architecture (7540-013)

Assignment B

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 2 Systems architecture (7540-013).

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 hours**.

Level 2 Systems architecture (7540-013)

Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with the assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 2 hours

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

- Task A – Operating Systems
- Task B – Computer Systems and Devices
- Task C – Demonstrate Operating System interfaces and functions

Scenario

You are employed as a Technical Apprentice in a multi-national Company which operates within the Financial Services Sector. The company maintains an Intranet, with one section devoted to internal 'FAQs' (frequently asked questions). A number of requests have recently been posted, asking for simple explanations of different aspects of "Systems Architecture" in computing.

Your excellent technical knowledge has led to the 'Webmaster' (who is also your line manager) requesting that you provide answers for them to post, in reply to the questions.

Your answers should be short but detailed; using sketches / diagrams where appropriate or requested and using simple, everyday language wherever possible.

Any sketches / diagrams may be hand drawn or produced using a computer.

Task A – Operating Systems

Please use the Answer Sheet provided to complete Task A.

- 1 Briefly explain how a “Distributed Operating System” works.
- 2 Identify and explain **three** of the main functions of a Distributed Operating System.
- 3 Explain the role “Data Communications Systems” have in enabling both Network and Distributed Operating Systems; e.g. OSI Seven Layer Model.
- 4 Explain how **two** of the Operating System security features listed below can contribute to both data and system security.
 - passwords
 - access rights
 - permissions
 - firewalls.
- 5 Explain the terms “Multitasking” and “Multiprogramming”.
- 6 Briefly explain the following Operating System processes:
 - memory management
 - file management
 - storage protection methods
 - deadlock.
- 7 For an operating system you are familiar with, identify and briefly explain how to end a process that has deadlocked / frozen.

Task B – Computer Systems and Devices

Please use the Answer Sheet provided to complete Task B.

- 1 Explain the role of the following in a modern computer system, giving **two** examples of each:
 - input devices
 - output devices
 - storage devices
 - peripheral devices.
- 2 Explain how the following number systems store information in a computer system:
 - ASCII
 - Binary
 - Hexadecimal.
- 3 Draw a simple block diagram of the Central Processing Unit (CPU) explaining the function of **each** component.
- 4 Draw a diagram explaining the Fetch Execute Cycle.

Task C – Demonstrate Operating System interfaces and functions

[take screen prints to demonstrate the following]

- 1 Using the text editor that is part of the Operating System available to you: create, name and save a simple ASCII text file.
- 2 Using the GUI (graphical user interface) of the Operating System available to you: copy this text file to a different storage location.
- 3 Using the CLI (command line interface) of the Operating System available to you: rename the copied version of the text file you created.

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

Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
T +44 (0)844 543 0000 (Centres)
T +44 (0)844 543 0033 (Learners)
www.cityandguilds.com

**City & Guilds is a registered charity
established to promote education
and training**