T Level Technical Qualification in Digital Support Services

Occupational specialism assessment (OSA)

Network Cabling

Assignment 1

Assignment brief

NCFE

T Level Technical Qualification in Digital Support Services
Occupational specialism assessment (OSA)

Network Cabling

Assignment brief

Assignment 1

Contents

About this assignment

Introduction

This assignment is set by NCFE and administered by your provider over 3 days. The times and dates will be specified by NCFE.

The assignment will be completed under supervised conditions.

You must complete all tasks in this assignment independently. You are required to sign a declaration of authenticity to confirm that the work is your own. This is to ensure authenticity and to prevent potential malpractice and maladministration. If any evidence was found not to be your own work, it could impact your overall grade.

Internet access is **not** allowed.

Timing

You have 13 hours to complete all tasks within this assignment.

Task 1 = 8 hours (this task will be completed in 4 sessions over 2 days)

Task 2 = 5 hours (this will be provided after completion of task 1 and be completed in 2 sessions over one day)

Individual tasks must be completed within the timescales stated for each task, but it is up to you how long you spend on each part of the task, therefore be careful to manage your time appropriately.

Marks available

Across all assignment 1 tasks: 60 marks.

Details on the marks available are provided in each task.

You should attempt to complete all of the tasks.

Read the instructions provided carefully.

Submit all evidence in .pdf format using the file naming convention - Surname_Initial_student number_evidence reference. For example. Smith_J_123456789_Task 1.

Performance outcomes

Marks will be awarded against the skills and knowledge performance outcomes (POs) as follows:

Task 1

(40 marks)

PO1: Apply procedures and controls to maintain the digital security of an organisation and its data (12 marks)

PO2: Install and test cabling in line with technical and security requirements (16 marks)

PO3: Discover, evaluate and apply reliable sources of knowledge (12 marks)

Task 2

(20 marks)

PO1: Apply procedures and controls to maintain the digital security of an organisation and its data (12 marks)

PO2: Install and test cabling in line with technical and security requirements (8 marks)

Scenario

You are required to provide the network data installation for a doctors' surgery based in a small, single-storey building.

The building will comprise of a reception area and 3 surgery rooms.

There is an ample supply of power sockets in each surgery room and the reception area.

The needs of the various users are:

- there are 6 doctors working in the practice and all will require access to the network at any time of the day
- doctors will need to be able to access digital medical records which will be stored separately from all other data
- doctors will need to be able to access the digital appointments system
- the 3 reception staff only require access to the booking system and must **not** have access to digital medical records
- the data server room will be located in the reception area
- all doctors and reception staff need access to a network printer

An outline plan of the surgery (Image A) is provided on the next page.

Image A

Double power sockets =
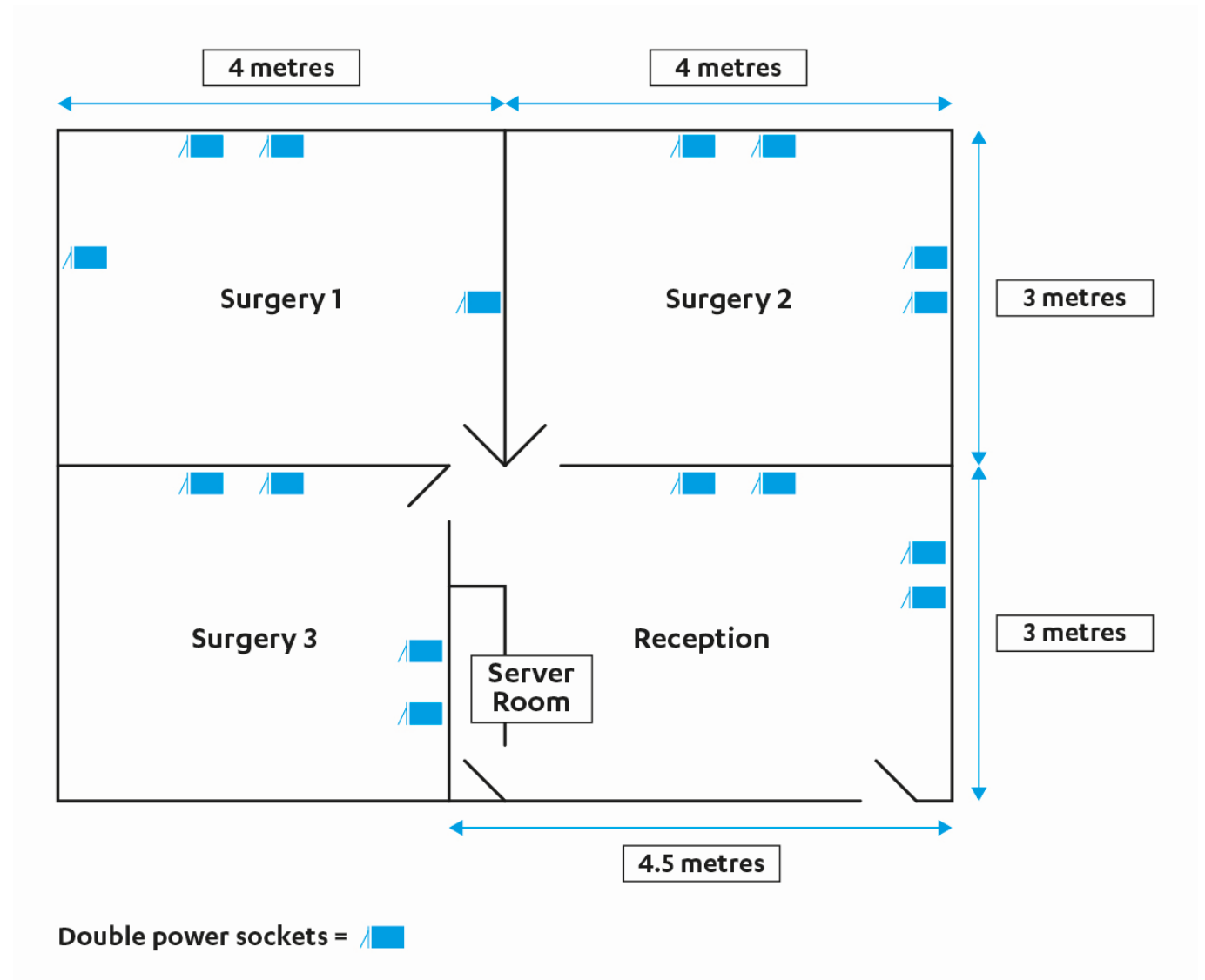
Task 1: designing the new network

Time limit

8 hours

You can use the time how you want but all parts of the task must be completed within the time limit.

(40 marks)

You are required to produce a network design specification, including a diagram of the physical layout for the proposed installation of the new network, and supporting rationale.

Your proposal should:

- show the physical layout for the network and proposals for containment/trunking, cable management and separation from power

- clearly state how many users will be able to access the network at any given time

- specify the types of data for example, VoIP, email, web traffic, which will be transmitted across the network and where the data is stored

- name the required hardware which will allow network access and the specifications of this hardware

- specify how data will be transferred throughout the entirety of the network, either wired or wirelessly, and justify your selection for each choice

- describe the security measures which will be put in place to best ensure the integrity and 24-hour availability of the network and justify your reasons for selecting these measures

- explain the type of cable you have chosen, justifying why it is fit for the required purpose

- provide an estimate for the amount of cable required for the installation, based on the dimensions shown in the outline plan of the surgery:

  o add 10% to the length of cable you have calculated will be required, in anticipation of encountering obstacles to your cable run

  o show how you have arrived at your estimation

You will have access to the following equipment:

- word processing software

- an appropriate diagramming tool

Evidence required for submission to NCFE

A diagram of the physical network design with headings that clearly show your proposal for each of the points above, in .pdf format.

Written justification for the design decisions you have made, where the task requires this.

Task 2: creating the network diagram

Time limit

5 hours

You can use the time how you want but all parts of the task must be completed within the time limit.

(20 marks)

Using Cisco Packet Tracer, you are required to produce a network diagram of the logical network layout for the doctors' surgery. Your network diagram should clearly show all devices and connection points which make up the network.

Your diagram screenshots and accompanying documentation should evidence:

- all resources/components identified to meet requirements in task 1
- identification of each component on the network and demonstrate how they are connected
- the IP addressing structure, evidenced by detailing the IP addressing and subnetting scheme, and how this will be applied to each networked component
- details of the security measures implemented
- how all components on the network work together

You will have access to the following equipment:

- word processing software
- Cisco Packet Tracer

Evidence required for submission to NCFE

Screenshots of your logical network diagram which demonstrate how the network is configured and a word-processed description of how all components on the network work together, in .pdf format.

Document information

The T Level Technical Qualification is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Post approval, updated for publication.		December 2020
v1.1	Branding and formatting final updates. NCFE rebrand.		September 2021