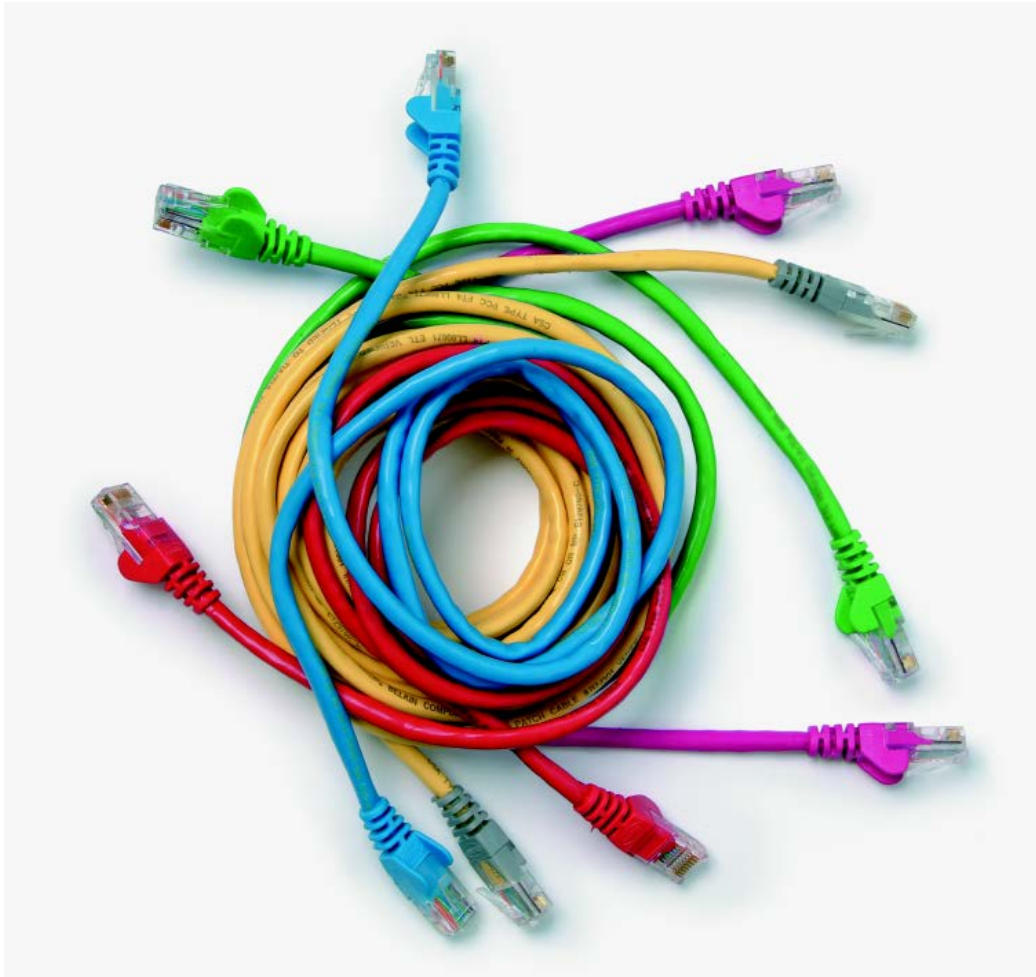


# Level 3 Principles of planning telecommunications services (7540-365/7630-346)

## Systems and Principles (QCF) Assignment guide for Candidates Assignment A



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# Level 3 Principles of planning telecommunications services (7540-365/7630-346) Assignment A

## Introduction – Information for Candidates

### About this document

This assignment comprises all of the assessment for Level 3 Principles of planning telecommunications services (7540-365/7630-346).

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### 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 **6 hours**.

# Level 3 Principles of planning telecommunications services (7540-365/7630-346)

## Candidate Instructions

**Time allowance: 6 hours**

### Assignment set up:

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

- Task A – Provide preliminary project documentation identifying cabling routes and approximate costing for a planned installation and documentation supporting the chosen cable route
- Task B – Provide project documentation for the planned provision of Telecommunications Services as specified in the assignment brief

### Scenario

You have been assigned the role of project co-ordinator for planning and costing a programme of work in a bottling plant.

The client is a drinks manufacturer, with four bottling plants in different parts of the country. The newest of these factories is co-located with the company's main offices. The other three plants are old and require replacing if the company is to remain competitive and reduce its running costs. Plans have been produced to build a new bottling plant on spare land at the main site. This plant will be capable of replacing all three older plants over the next 18 months; replacing them in turn at 6-monthly intervals. This also means that the project costs will also be spread over the 18-month period.

The new plant is to be fully automated and will be controlled by a computer server situated in the main office block. The main office block and existing buildings were recently cabled to CAT 5e standard during the main computer system installation.

The assessor will be available to act as a point of contact for queries relating to the project. The project has been divided into a three phases:

#### Phase 1

- a Installation of a backbone fibre link providing connectivity to the main computer server.
- b Installation of a 48U cabinet to support the new building.
- c Provision of connectivity to the following Telecoms Outlets (TO) locations via the communications room cabinet.
  - i All Bottle filling machine outlets (Factory Floor).
  - ii Bottling machine No 1 outlet (Factory Floor).
  - iii Packing machine No 1 outlet (Factory Floor).
  - iv Office N° 1 outlets (First Floor Area).
  - v Workstation N° 1 outlets (First Floor Area).
  - vi Testing facility N° 1 outlets (First Floor Area).
  - vii Bottling Machine Control Room N° 1 outlets (First Floor Area).

## Phase 2

Provision of connectivity to the following locations Telecoms Outlets via the communications room cabinet.

- a Bottling Machine N° 2 outlet (Factory Floor).
- b Bottling Machine Control room N° 2 outlets (First Floor Area ).
- c Office N° 2 outlets (First Floor Area ).

## Phase 3

Provision of connectivity to all of the remaining Telecoms Outlets within the factory and First Floor Area via the communications room cabinet.

### Additional requirements

Each phase of the project must be completed 2 months prior to its operational requirement to allow for full commissioning and testing.

Preliminary plans will have to be formulated, then authorisation to proceed obtained.

Once the project proposals have been approved, detailed project planning may commence. A copy of the completed project must be handed to the project manager.

Point Of Presence (POP) contractors will provide labour and will be responsible for their workers at all times whilst on site.

The Factory floor must have a suspended tray installed and power pole dropdowns to provide access points.

The customer requirements and contractor costs are to be found in the documentation provided.

All installations are required to meet relevant standards.

### TELECOM REQUIREMENTS

At present, the new building has no communications cabling infrastructure, however the following services have been installed and are functional.

**Power** – There are 13 Amp double power sockets in all rooms and offices throughout the building.

**Lighting** – The lighting system has been installed. All switches and conduits are in place and no alterations are required.

**Water and heating** – The water and an eco under floor heating system has been installed.

Active equipment is obtained through POP contractors and is configured to facilitate the bottle plants existing system.

All cabinets will have active equipment installed within and power and safety earths must be distributed to supply them. This can be tasked to the POP contractors for the project. Detailed plans must be formulated prior to tasking.

To increase flexibility when planning the installation, consideration must be given to the possibility of future expansion.

The computers have 10/100 MHz RJ-45 network cards installed. Responsibility for the channel standards is with the installation team.

A 4 x 10/100 Mbps ST port (duplex) fibre optic switch (50/125) is currently fitted in the main building telecoms room. It has a Gigabit SFP duplex port for the feed cable. The rack mounted 2U server has spare fibre optic duplex ports, for connection directly to the new fibre optic switch contained within the new cabinet.

The fitting of the switch by POP contractors allows connectivity for up to 48 individual RJ-45 feeds. This has connectivity to the computer system and telephone switch in the main building comms room.

All circuits will be configured as Voice over IP (configuration to be completed by POP contractors). This will provide access points with the flexibility to be used for not only the company's internal computer system but also for external voice. All Access points are double RJ-45 thus allowing both flexibility and future expansion within the network.

All furniture and furnishings for the building have been ordered and are en-route to the factory. All furniture and fittings are modular and are therefore flexible around the installation.

You are required to produce the following Project Deliverables.

### **Task A - Provide preliminary project documentation identifying cabling routes and approximate costing for a planned installation and documentation supporting the chosen cable route**

- 1 Provide **two** separate diagrams showing your choice of route, one tray within the suspended ceiling and one trunking running below the suspended ceiling. The Factory Floor must have a suspended tray as explained in the telecom requirements. Each diagram should have a clear legend / key.
- 2 Provide an approximate total costing for **both** routes broken down into the **three** phases.
- 3 Provide a document detailing your chosen route briefly identifying the reasons to support its implementation.
- 4 Seek approval from your point of contact (the assessor) to continue onto the next stage.

## **Task B - Provide project documentation for the planned provision of Telecommunications Services as specified in the assignment brief**

- 1 Provide a **Project introduction** which should include the following:
  - a) brief details of the user requirements
  - b) the availability of existing systems, support services and accommodation
  - c) identification of redundancy and capacity for future expansion.
  
- 2 Provide a **Method Statement**:
  - a) listing required tasks in Chronological Order
  - b) identifying the applicable standards being applied to the specified tasks.
  
- 3 Using a diagrammatic method of your choice, provide an **Outline Schedule of Work** that includes:
  - a) timelines for the completion of **each** phase
  - b) timelines for completion of the whole project
  - c) required availability of all resources
  - d) inter-dependency of work activities.
  
- 4 Provide **Cable Management Diagrams** for **each** phase with **each** diagram showing:
  - a) keys and legends
  - b) all relevant measurements
  - c) all relevant components.
  
- 5 Provide **Contractor Breakdown** of timings, hours and costs for **each** Phase.
  
- 6 Provide a **Cable Straight Line Diagram** (indicating phases). The diagram should include:
  - a) all cables and outlets
  - b) a suitable numbering system
  - c) all cabinets and feed cables
  - d) all relevant geographical locations.
  
- 7 Provide a **Cabinet Face Plan** (indicating phases) that includes a detailed installation diagram.
  
- 8 Provide **Special Instructions** as required. These should include:
  - a) all relevant standards identified
  - b) all relevant legislation identified
  - c) all existing hazards identified
  - d) all Health & Safety considerations identified
  - e) works and schedule reviews timetabled.



9 Provide a **Total Cost Breakdown** (indicating phases) that includes:

- a) accurate known contractor costs for **each** phase
- b) accurate known total project costs.

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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