Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365)

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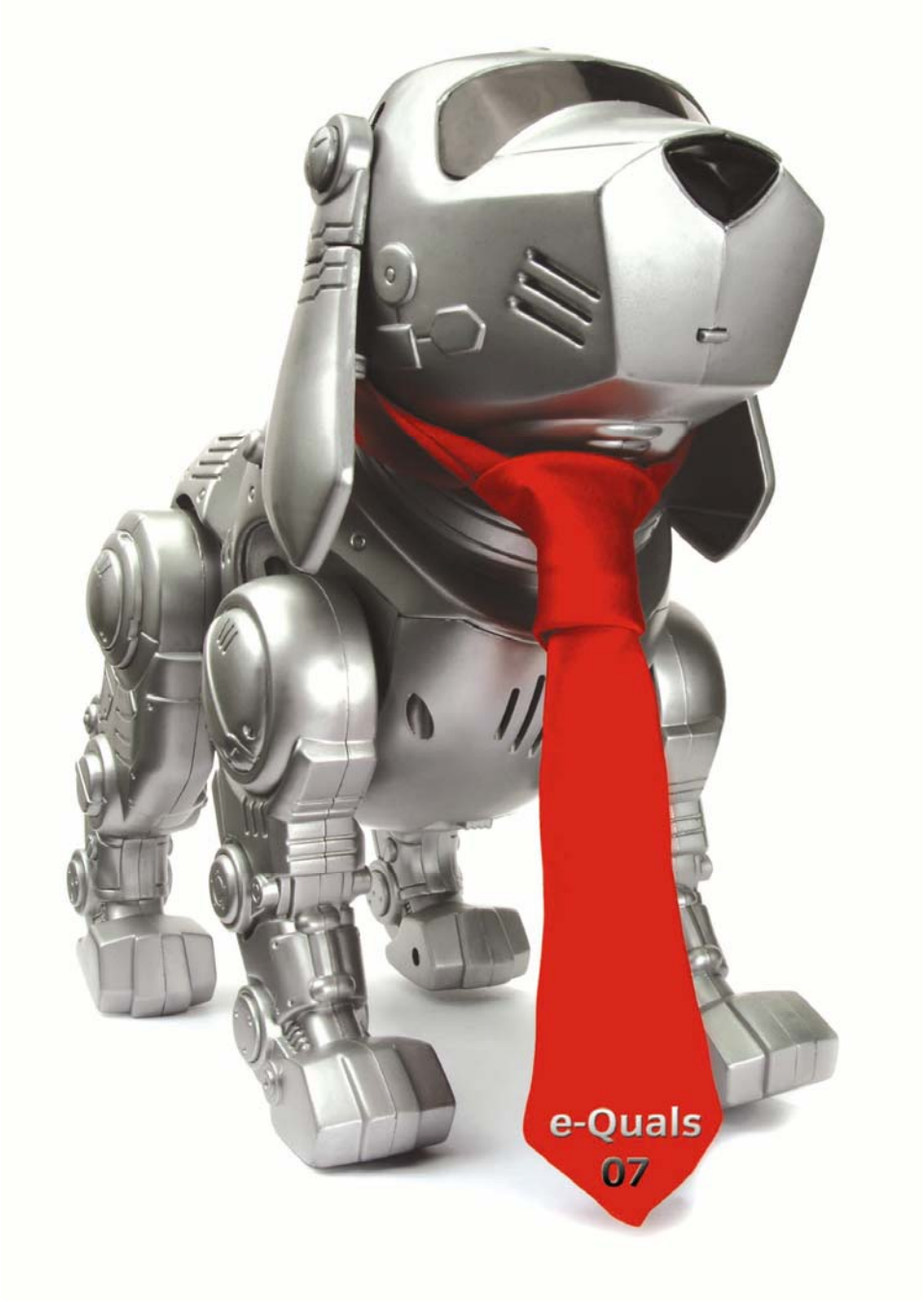
e-Quals
Assignment guide for Candidates
Assignment A



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Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365) Assignment A

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365).

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 **8 hours**.

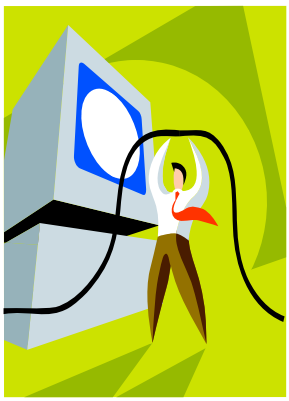
Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365)
Candidate instructions

Time allowance: 8 hours

Assignment set up:

This assignment is made up of **one** task

- Timeline, cost and assist in the project planning phase of a structured cabling network's implementation



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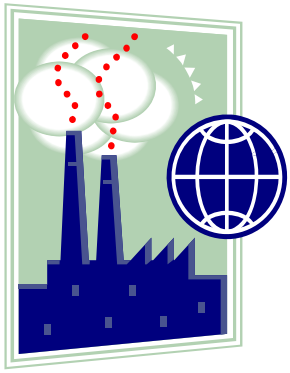

See Distribution

Reference: Bottle Plant Expansion

Date: Today's date

BOTTLING PLANT EXPANSION PROGRAMME

1 You are working for a drinks manufacturer who has four bottling plants around 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 for the company to remain competitive and reduce its running costs. The management have produced plans 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 4.5 years. It is intended to replace them in turn at 18-month intervals. The new plant is to be fully automated and will be controlled by the main computer server situated in the main office block.

2 Three years ago, the main office block and existing buildings were cabled to CAT 5e standard during the main computer system installation. This has been very successful and the management are very pleased with its performance.

Your assignment is to timeline, cost and assist in the project-planning phase of a structured cabling network's implementation, in order to support the new plant. It is essential the company spread the cost of replacing the existing three bottling plants over the next 4.5 years. All installations must meet relevant standards.

3 You have been nominated as the project co-ordinator for the task. The customer, Steve Fizzy, Managing Director, will attend the preliminary meeting to confirm finalised plans. However, I will be available as your point of contact for all queries.

4 The project has been broken down into a three-phase operation:

Phase 1

a Install a backbone fibre link providing connectivity to the main computer server.

b Install a 48U cabinet to support the new building.

c Provide 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).
- v Workstation N° 1 outlets (First Floor).
- vi Testing facility N° 1 outlets (First Floor).
- vii Bottling Machine Control Room N° 1 outlets (First Floor).

Phase 2

Provide 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).
c Office N° 2 outlets (First Floor).

Phase 3

Provide connectivity to all of the remaining Telecoms Outlets within the factory and first floor via the communications room cabinet.

5 Each phase of the project must be completed 12 months prior to its operational requirement.

6 Mr Steve Fizzy will be the authorising budgeting officer for the provision of this project; therefore, preliminary plans will have to be formulated prior to approval.

7 Pop contractors will provide labour and are responsible for their workers at all times whilst on site.

8 Once the project has gained the approval of Mr Steve Fizzy, detailed planning may commence. A copy of the completed project must be handed to the project manager and any contractors involved in the building process.

TELECOM REQUIREMENTS

9 At present, the 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 and can easily be identified on the survey. All switches and conduits have been installed and cannot be changed.

Water and heating – The water and heating system has been installed. Locations of pipes and radiators can be found on the recce.

10 All furniture and furnishing 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.

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

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

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

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

Computer Equipment

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

b 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 100 Mbps ST duplex port for the Feed cable. The rack mounted 2U server has a spare fibre optic ST duplex port, which will be connected directly to the new fibre optic switch contained within the new cabinet.

c The fitting of the switch by Pop contractors allows connectivity for up to 24 individual RJ-45 feeds. This has connectivity to the computer system and telephone switch in the main building comms room.

d All circuits will be configured as Voice over IP (configuration to be completed by Pop contractors) This will provide access points 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.

15 The customer requirements can be seen on the attached diagrams.

16 All contractor costs are attached as an Annex to this document.

17 You are to produce the following Documentation.

Preliminaries

a 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 suspended Tray as explained in the telecom requirements.

b An approximate costing for both routes with a detailed breakdown with regard to the three phases.

c A document detailing your chosen route and the reasons to support its implementation.

d Once you have decided on a best choice solution, you are to produce the main project documentation as listed below.

Project

a Introduction.
b Method Statement.
c Cable Management Diagrams for each Phase.
d Contractor Breakdown Timings/Costs for each Phase.
e Cable Straight Line diagram (to indicate phases).
f Cabinet face plan (to indicate phases).
g Manpower Plan – Pert Chart/Gant Chart.
h Special Instructions.
j Total cost Breakdown (to indicate phases).
k Summary.

18 You have 12 hours under exam conditions to produce the required paperwork. Preliminaries require completion as soon as possible. This will allow you time for customer liaison to agree the selected route and allow detailed planning to commence.

SIGNED

Sherratt C
Head of Project development
Fizzy Industries

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POP CONTRACTORS

See Distribution

Reference: POP/06/771

Date: Today's date

QUOTATION FOR BOTTLE PLANT EXPANSION PROJECT

Following our conversation about the Bottle Plant work services, I have listed prices for all of the works discussed.

We have an excellent reputation in the completion of factory communications refits and have been praised for our standard of work, competitive pricing and professionalism.

The quotes are as follows.

Works Service	Unit	Price per Unit	Remarks
Install **1 way** duct into **soft surface**	Per metre	£24.80	Ducting supplied at a rate of 100 m per 32 person-hours.
Install **2 way** duct into **soft surface**	Per metre	£34.80	Ducting supplied at a rate of 100 m per 32 person-hours.
Install **1 way** duct into **Asphalt**	Per metre	£61.80	Ducting supplied includes full reinstatement to specifications at a rate of 70 m per 32 person-hours.
Install **2 way** duct into **Asphalt**	Per metre	£93.20	Ducting supplied includes full reinstatement to specifications at a rate of 70 m per 32 person-hours.
Install ≤ **2 way** pit in **soft surface**	Each	£490.00	All fixtures and fittings included at a rate of 1 box per 16 person-hours.
Install ≤ **2 way** pit in **Asphalt**	Each	£1280.00	All fixtures and fittings included at a rate of 1 box per 32 person-hours.
Install **Building entry** in masonry wall (**To match duct**)	Each	£340.00	Includes wall reinstatement, gas/fire stopping at a rate of 16 person-hours.
Install ≤ 5 m **Riser**	Each	£370.00	Includes fire stopping and cable management at a rate of 16 person-hours.
Install **Access hole** 50 x 50 mm above **suspended ceiling**	Each	£150.00	Includes fire stopping at a rate of 4 person-hours.
Install **50 mm cable tray** within **suspended ceiling**	Per metre	£10.00	Includes materials, fitting and ceiling tile reinstatement at a rate of 50 M per 32 person-hours.

Works Service	Unit	Price per Unit	Remarks
Install 16 x 16 mm **dropdown** from Tray to Access point	Per drop	£10.00	Includes materials, fitting and ceiling tile reinstatement at a rate of 10 per 4 person-hours.
Install **access hole** 50 x 50 mm **below suspended ceiling**	Each	£100.00	Includes fire stopping at a rate of 1 per 2 person-hours.
Install **50 x 50 mm Trunking** at a height of 1 metre	Per metre	£8.00	Includes materials and fitting at a rate of 60 M per 32 person-hours.
Install **50 x 50 mm Trunking around door frames**	Per crossing	£32.00	Includes materials and fitting at a rate of 1 per 2 person-hours.
Install **Double RJ-45 Outlet**	Each	£7.20	Includes materials and fitting at a rate of 50 per 16 person-hours.
Install 2 x cat 5e for Access Point within Bottling Plant offices **(First Floor)**	Per double outlet	£40.00	Includes materials, fitting, terminating and testing at a rate of 2 person-hours per access point.
Install **50mm Suspended Cable Tray (Factory floor)**	Per metre	£20.00	Includes materials and fitting at a rate of 25 m per 32 person-hours.
Install Power Pole from Tray **(Factory floor)**	Per pole	£370.00	Includes materials and fitting at a rate of 10 per 8 person-hours.
Install 2 x Cat5e for Access Point within Bottling Plant **(Ground Floor)**	Per double outlet	£55.00	Includes materials, fitting, terminating and testing at a rate of 4 person-hours per access Point.
Install 19″ 27U Cabinet (800 x 800 mm)	Each	£895.00	Includes cabinet with Fan, Plinth, earthing and connection to Trunking/Tray system at a rate of 1 per 32 person-hours.
Install 240 V 13 Amp UPS (3U)	Each	£495.00	Includes Equipment and installation RCD Protected at a rate of 1 per 2 person-hours.
Install 100 MHz ST backbone switch to RJ45 10 MHz 24 Port Presentation (2U)	Each	£ 510.00	Includes Ethernet switch, installation, patching and testing at a rate of 1 per 4 person-hours.
Install 24 Port RJ-45 Patch panel (1U)	Each	£82.00	Includes fitting, termination and testing at a rate of 1 panel per 4 person-hours.
Install External 4 Core Fibre within Duct.	Per metre	£4.40	Includes materials, installation, termination and testing at a rate of 100 M per 16 person-hours.

4 All time estimates are based on a four-person team working an 8-hour day.

5 All prices are excluding VAT at 17.5%.

M. Bellucci

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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