ADVANCED GCE UNIT

G055/IC

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

Unit 16: Networking Solutions

INSTRUCTIONS FOR CANDIDATES

JUNE 2007

Pre-release Material and Tasks - Candidate Instructions
To be opened on receipt

This document consists of **7** printed pages and **1** blank page.

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PRE-RELEASE TASKS – INSTRUCTIONS FOR CANDIDATES

Read the attached case study and these instructions carefully, then carry out the tasks detailed below.

In Task 1 you will produce notes that will help you to answer questions in the examination. Tasks 2 and 3 will be marked and will contribute up to 30 of the 100 marks available for this unit.

You will need your completed tasks when you take the examination for this unit.

Make sure that your name and Centre number is on each page.

When you have completed the tasks you must sign and date a Candidate Authentication Statement.

You must then ask your teacher to sign to confirm that the work is your own.

Task 1

The Managing Director of Rolling Rocks wants to install a network to improve productivity and will need advice on the type of network to install and the way it might be used.

Carry out your own research and make notes that can be used in discussions about the planning of the new network. Your notes should include:

• the advantages and disadvantages of networking the computers at Rolling Rocks

• a description of the features of peer-to-peer and client-server networks and the benefits of each type of network

• a description and evaluation of possible topologies, with a diagram of each

• a description of different types of cable and connector and the suitability of each for the network at Rolling Rocks

• a description of the purpose of other network components

• a description of different network protocols, including TCP/IP, and the suitability of each for the network at Rolling Rocks

• the security and cost implications of the installation of networked computers and of more extensive access to computers and the Internet by all members of staff.

The company will want to make use of the Internet. Describe in your notes:

• the services that the Internet could offer Rolling Rocks, including the use of extranets, with an evaluation of each service

• the software and hardware required for each service you have described.

Task 2

One option is to use a ring topology for the network. Produce an outline network design for the Managing Director. Your design should include:

• a network diagram, using the diagram supplied in Fig. 1, that shows the physical layout of a ring network. Your diagram should show where you plan to put computers, servers, cabling and connecting equipment **[6]**

• a list of **selected** network components for a ring network with **justification** for including each component. This list should include:

⇒ cables and connectors
⇒ connecting equipment
⇒ any other additional hardware
⇒ any additional software. **[12]**

Briefly evaluate the method(s) you used to complete this task. **[3]**

Task 3

The Managing Director wants the network to be connected to the Internet and has asked you to report on how this might be done.

Your report should:

- identify and justify a method of connecting the network to the Internet
- identify the equipment required
- describe the costs involved. **[6]**

The work you produce for Task 3 **must not** exceed 250 words.

The quality of your written communication will be assessed through this task. **[3]**

CASE STUDY

Rolling Rocks is a small organisation that imports inline roller blades for sale in the UK. The company has grown quickly and has established a steady market. Ms Jones, the Managing Director, wants to look at the company's ICT strategy with a view to installing a network to:

* improve the way the current five stand-alone computers are used
* expand the current provision so that each employee has his or her own computer access.

She has approached you for technical advice on how to go about this.

The company has a managing director and ten employees. These are currently:

* four sales people, one responsible for each of the North, South, East and West regions
* two warehouse staff
* an accounts manager
* a company buyer
* a product assistant
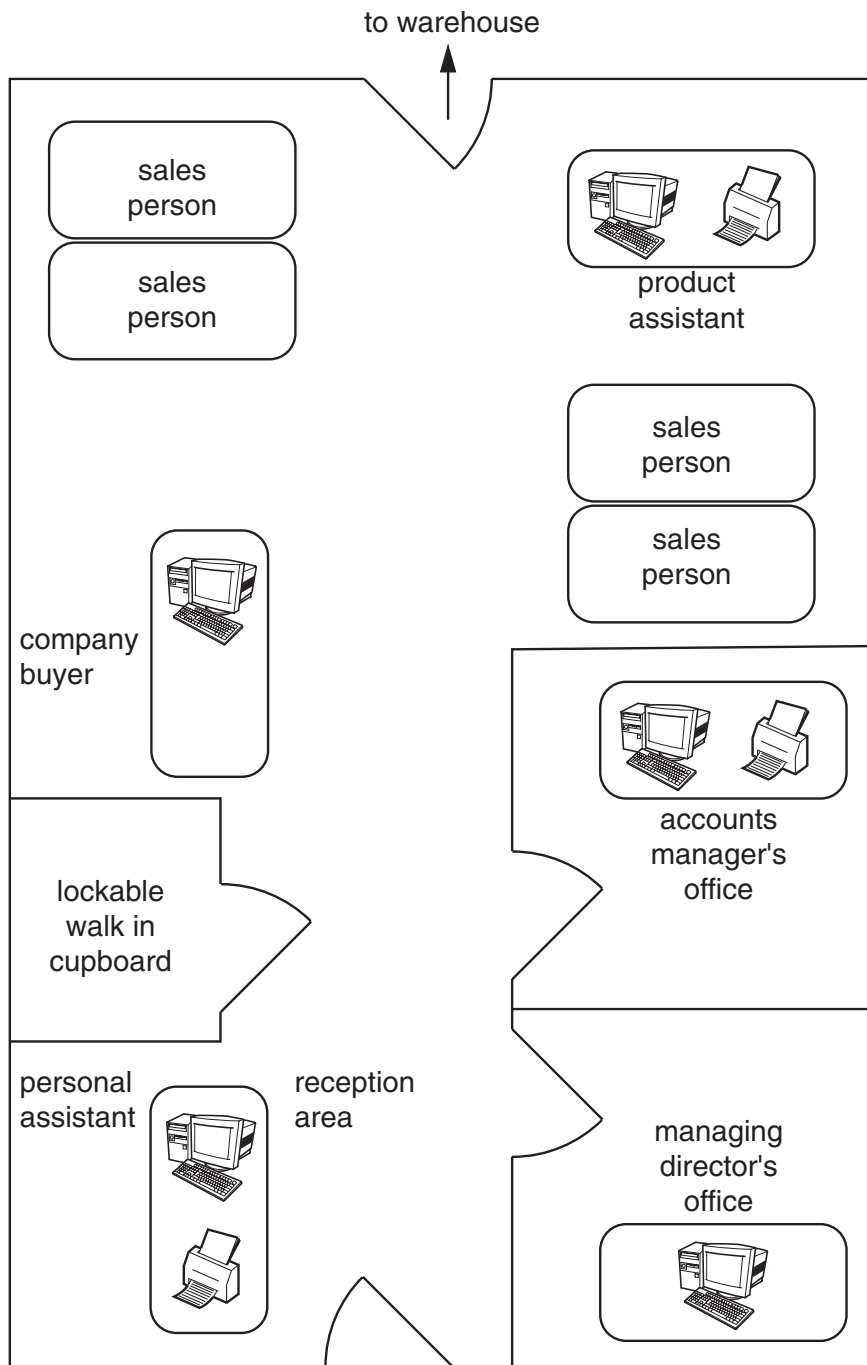* the Managing Director's personal assistant.

The Managing Director, her personal assistant, the accounts manager, company buyer and product assistant each has a stand-alone computer on his or her desk.

The company places orders with overseas suppliers, keeps records of stock levels and receives orders from customers. Current stock levels must always be available to the sales people as they take orders from customers. The company also produces its own brochures to advertise its products.

Orders are made and received by telephone and by post. Rolling Rocks uses a national delivery company to send ordered goods to customers. The company buyer and the sales people fill in purchase and sales order forms, which they pass to the product assistant for processing. The product assistant has a database on his computer that provides information on stock levels. The product assistant, accounts manager and personal assistant each has a printer attached to his or her computer.

Fig. 1 shows the current setup at Rolling Rocks.

Fig. 1 - Current Setup

to warehouse

sales person

sales person

product assistant

sales person

sales person

company buyer

accounts manager's office

lockable walk in cupboard

personal assistant   reception area

managing director's office

key:

desk   stand-alone computer   printer