

ADVANCED GCE

**APPLIED INFORMATION AND COMMUNICATION
TECHNOLOGY**

G055/IC

Networking Solutions

INSTRUCTIONS FOR CANDIDATES

To be opened on receipt

**Wednesday 26 January 2011
Afternoon**

Duration: 1 hour 30 minutes



INFORMATION FOR CANDIDATES

- This document consists of **8** pages. Any blank pages are indicated.

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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. There are two types of task.

In Task 1 you will produce notes that will help you to answer questions in the examination for this unit. The other tasks 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.

The work produced in response to the pre-release tasks must be submitted to your teacher when it is completed. The work must be presented as a hard copy.

It is not acceptable for you to copy large parts of material from other sources as the tasks require you to apply your knowledge to the case study. Any books, information leaflets or other materials (e.g. videos, software packages or information from the internet) which you have used to help you complete this work must be clearly acknowledged in the work itself. To present material copied from books or other sources without acknowledgement will be regarded as deliberate deception.

You **must not** submit any material other than your response to the pre-release tasks.

The work must be collated so that it is presented in task order.

Each page of the work must be marked clearly with your name, Centre number and task number.

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.

CASE STUDY

The Recycled Garden Company Ltd (RGC) is a medium sized enterprise located in central Wales. The company manufactures and sells garden products, made from recycled plastic, to customers all over Europe.

RGC is expanding and the managing director, Ms Green, has conducted a review of the current ICT strategy. She feels that a network is needed to enable the company to become more efficient in its operation. She has approached you for technical advice on how to proceed.

RGC has a managing director and twenty-three employees:

- a sales manager and four sales staff, responsible for sales in Britain and in Europe
- a production manager, two warehouse and two delivery staff
- eight manufacturing workers
- two designers/engineers
- an accounts manager
- a company buyer
- an administrator.

Ms Green has the following requirements for networked computers:

- a wireless-enabled laptop with spreadsheet and general office software installed for each of the sales staff
- one PC with spreadsheet and general office software installed for the sales manager
- one PC with stock control software installed for the production manager
- one PC with stock control software installed for the use of the warehouse and delivery staff
- one PC with CAD software installed for each of the designers/engineers
- one PC with accounting software, stock control software and general office software installed for each of the following:
 - the accounts manager
 - the company buyer
 - the administrator
- one PC with general office software installed for the managing director
- a company-wide internet connection available to all computers on the network.

As part of the strategy, RGC will have a website which will be created, maintained and hosted by a local web design company. Customer orders for recycled garden products will be taken over the internet or by telephone. Orders for manufacturing supplies will be placed by RGC over the internet or by telephone.

When a customer order is taken for recycled products over the telephone, it must be confirmed by producing an invoice and delivery note. A copy of the invoice is sent to the customer.

When an order is placed for supplies by RGC over the telephone, a purchase order will often be required by the supplier.

Fig. 1 shows the layout of the ground floor of the headquarters building of RGC. The building has two storeys at one end with all office space, except the production manager's office, situated on the first floor, shown in Fig. 2.

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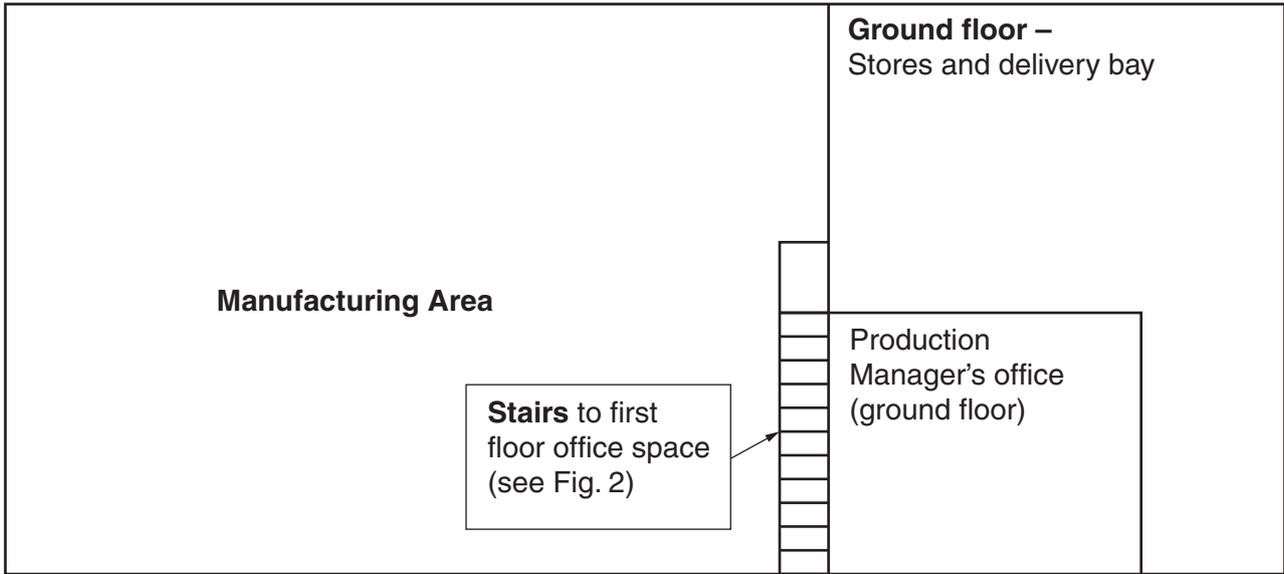


Fig. 1

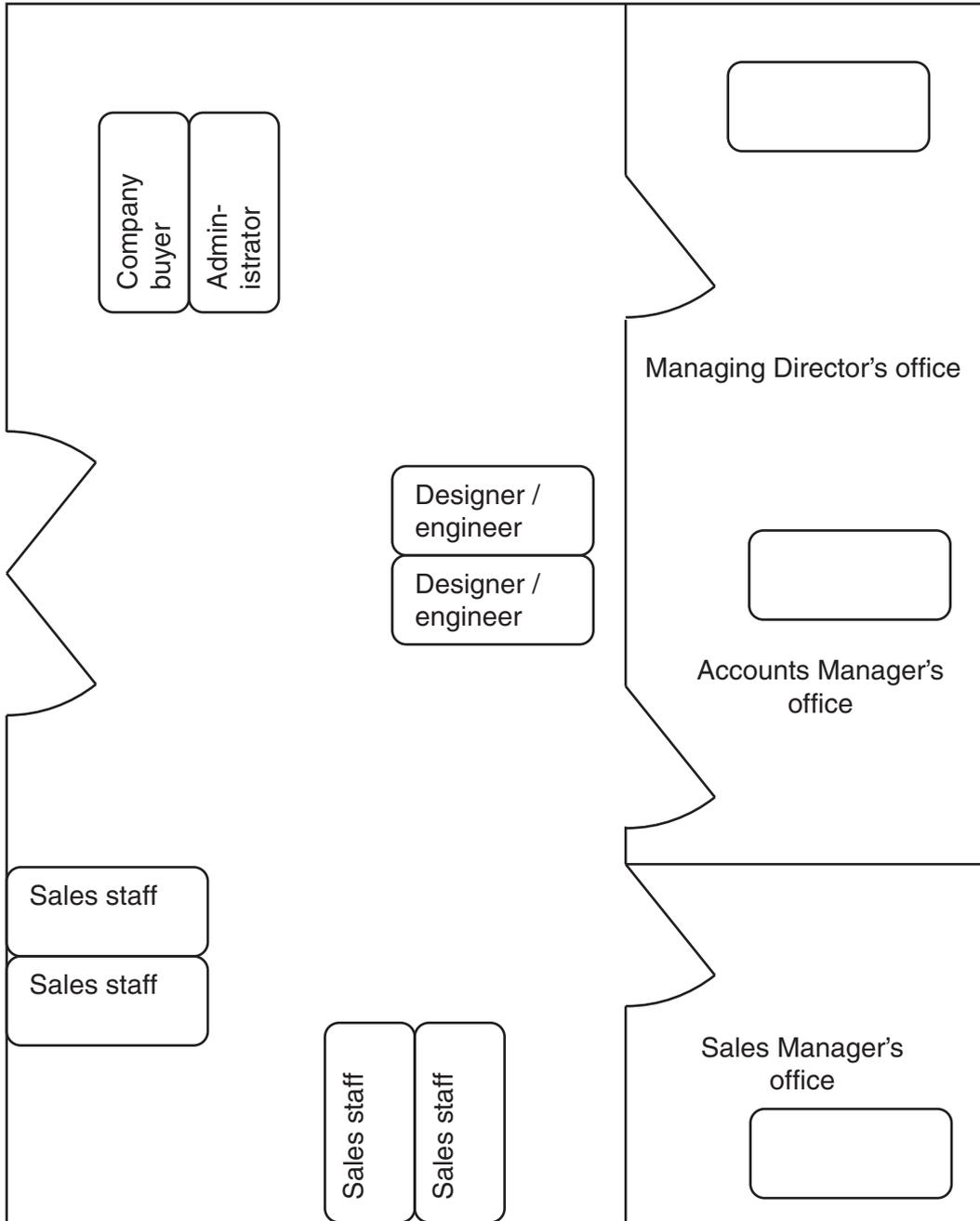


Fig. 2

TASK 1

The managing director of Recycled Garden Company Ltd (RGC) has asked for your advice on how to set up and use its new network including how to connect it to the internet to provide broadband access for all computers.

Carry out your own research and make notes, to be used in discussion with RGC, about the planning of its new network. Your notes should include:

- how RGC will be able to share a range of types of resources and the potential drawbacks associated with introducing a network
- the WAN services that will be available to RGC, how they could be used and the benefits of their use
- the use of a star network topology and the reasons why this might/might not be a suitable topology for RGC
- how RGC's data can be protected on the network
- the ways in which RGC could make use of an intranet and an extranet, detailing the advantages and disadvantages of each
- peer-to-peer and client server networks and the advantages and disadvantages to RGC of using each type of network
- the devices, media and software that RGC could use to share an internet connection, how they work and why each would be chosen
- the functions and benefits of the different types of server that RGC might need
- the protocols that RGC may need to use, what they are and why they are needed.

TASK 2

One option is to use a star topology for the network.

Produce a **logical** network design for a star network to demonstrate to the managing director how the network will be connected together. Your diagram should be labelled to show how computers, servers, connecting equipment and other hardware will be connected together. You should use the diagrams in Figs. 1 and 2 for reference, but you **must** produce a separate diagram. [6]

Using the table headings given in Table 1, list all the **connecting equipment** identified in your diagram and, for each, justify your choice of component. (Each component must be shown on the diagram and listed in the table).

Connecting equipment (on diagram)	Justification

Table 1

[12]

Briefly evaluate the method(s) you used to complete this task.

[3]

TASK 3

The RGC network will be connected to the internet to enable access from every computer. Ms Green has asked you to evaluate **two** methods of connecting the network to the internet.

The work you produce for Task 3 **must not** exceed 250 words and you should include a word count.

The quality of your written communication will be assessed through this task.

[9]