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A2 GCE
APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

G055/01/IC Networking Solutions

INSTRUCTIONS FOR CANDIDATES

JANUARY 2012

INFORMATION FOR CANDIDATES

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

NOTICE TO CANDIDATES

The work you submit for these pre-release tasks must be your own.

- If you copy from someone else or allow another candidate to copy from you, or if you cheat in any other way, you may be **disqualified** from at least the subject concerned.

- You must always keep your work secure and confidential whilst you are preparing it. **If it is stored on the computer network, keep your password secure. When printing work collect all copies from the printer and destroy those you don't need.**

- Any materials eg books, information from the internet you have used to help complete this work must be clearly acknowledged in the work itself.

- All work must be submitted to your teacher once completed. Ensure you include your name, candidate number and centre number on all pages and that each page is hole punched in the top left hand corner.

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

- When you hand in your completed tasks, you will be required to sign that you have understood and followed the regulations.

- Your work will be returned to you at the start of the exam, in the exam room. At the end of the exam you must attach **all** tasks to your question paper using a treasury tag.

ALWAYS REMEMBER

YOUR WORK MUST BE YOUR OWN

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.

Task 1

Mr Greensdale, managing director of Green Toes will need advice on the type of network to install, the components needed and the ways 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 expected benefits and limitations associated with the network
- the function of the types of hardware required for connecting the network at Green Toes to the internet
- possible topologies and the suitability of each for the Green Toes network
- the different types of software required for the network at Green Toes and the function of each type
- the network services required and the ways in which these can be implemented
- how Green Toes can make use of problem logs and communication logs to aid maintenance of their network
- the internet services, including intranets and extranets that will be available to Green Toes, the suitability of these services, and how the company could make use of them
- the security implications associated with the use of the Green Toes network and access to the internet, how these can be dealt with and why dealing with them is necessary.

Task 2

Produce an outline network design for Mr Greensdale using a star topology. Your design should include:

- a logical topology diagram that shows the way the network will be connected together using a star topology **[4]**
- a physical layout diagram showing the star topology as it would be set up in the office. You must use Mr Greensdale's diagram supplied in Fig. 1. **[6]**

Set up a table as shown in Table 1. Using your table, list one type of component you have selected to use in each category and explain why each is included in your design. **[8]**

Category	Type of component (on diagram)	Explanation
Central connecting device		
Cabling/wireless media		

Table 1

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

Task 3

The network must be connected to the internet with access from every computer. Mr Greensdale wants advice on the most appropriate type of broadband connection for his network.

Prepare a short report for Mr Greensdale in which you identify and evaluate the use of different types of broadband connection.

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

The quality of your written communication will be assessed through this task. **[9]**

CASE STUDY

Green Toes is an organisation that provides an outlet for small producers of crops, crafts and natural products. The company keeps a database of providers and maintains a website through which producers can show their products and collect orders. Currently available products are displayed on the website and customers can add products from a variety of producers to a shopping basket. When a customer has finished shopping the order is checked out and online payment is made to Green Toes. The products that are currently available change from day to day and the website must be constantly updated to encourage the sale of fresh products as quickly as possible. The producer database contains detailed information about each producer including bank details for the transfer of funds.

Green Toes takes a percentage of the revenue for each order and arranges for goods to be picked up from producers, put together as a whole order and delivered to the customer. A constant stream of goods flows in and out of the storage area. Associated with this, a large number of producers and delivery workers visit the office each day.

The company currently operates, with eight members of staff, from a small office and store room on the outskirts of Stevenage but it is expanding rapidly and needs to take on new staff and to revamp its IT systems. There is currently one computer hosting the database, one computer used by the webmaster to develop and maintain the website and one computer, with an attached printer, used for creating and printing delivery notes, invoices and other administrative documents. This printer was bought quite recently to replace the previous one that had stopped working. All other existing computer equipment is due for replacement.

The company is about to relocate to an office on a small business park in the heart of the Hertfordshire countryside. A new IT system is required which will become an integral part of the running of the business. A high level of reliability and security will be required and a maintenance contract will be required to cover repairs with a 24 hour maximum lead time. Staff from the maintenance company will need access to logs kept on the Green Toes network.

Green Toes owner, Mr Greensdale, has approached you for some technical advice on setting up a small network of twelve computers at the new office. His budget is small but he wants at least to meet the following requirements for networked computers:

- one computer for Mr Greensdale who will use general office type software
- one computer for the webmaster who will continue to develop and maintain the website
- two for the content writers who will create website content and keep all product information up to date, these people will research product information through the WWW and forums
- two for the members of staff who will keep track of payments to and from the company and will look after administration and printed documents
- two for the members of staff who liaise with producers to ensure that products are available and to source new products for the website and who will populate the online database, these staff need to keep close contact with a large number of producers and are always looking for new ways to exchange information and keep them in contact with each other as well as with Green Toes
- four for members of staff who deal with the logistics of getting products collected from producers and sent out to customers.

All networked computers must have internet access, email, and access to a shared printer as well as general office type software and any specialist software required by the individual member of staff for their role. Digital cameras are often connected to transfer pictures of products and these pictures could be stored in the database and also emailed to the person who will add them to the website.

Many members of staff have not used a computer as part of their job role before and no one currently within the company has experience of using or managing a network.

An ISP hosts the website and FTP will be required at the new office so that the site content can be uploaded at regular intervals. Uploading is generally scheduled to take place overnight.

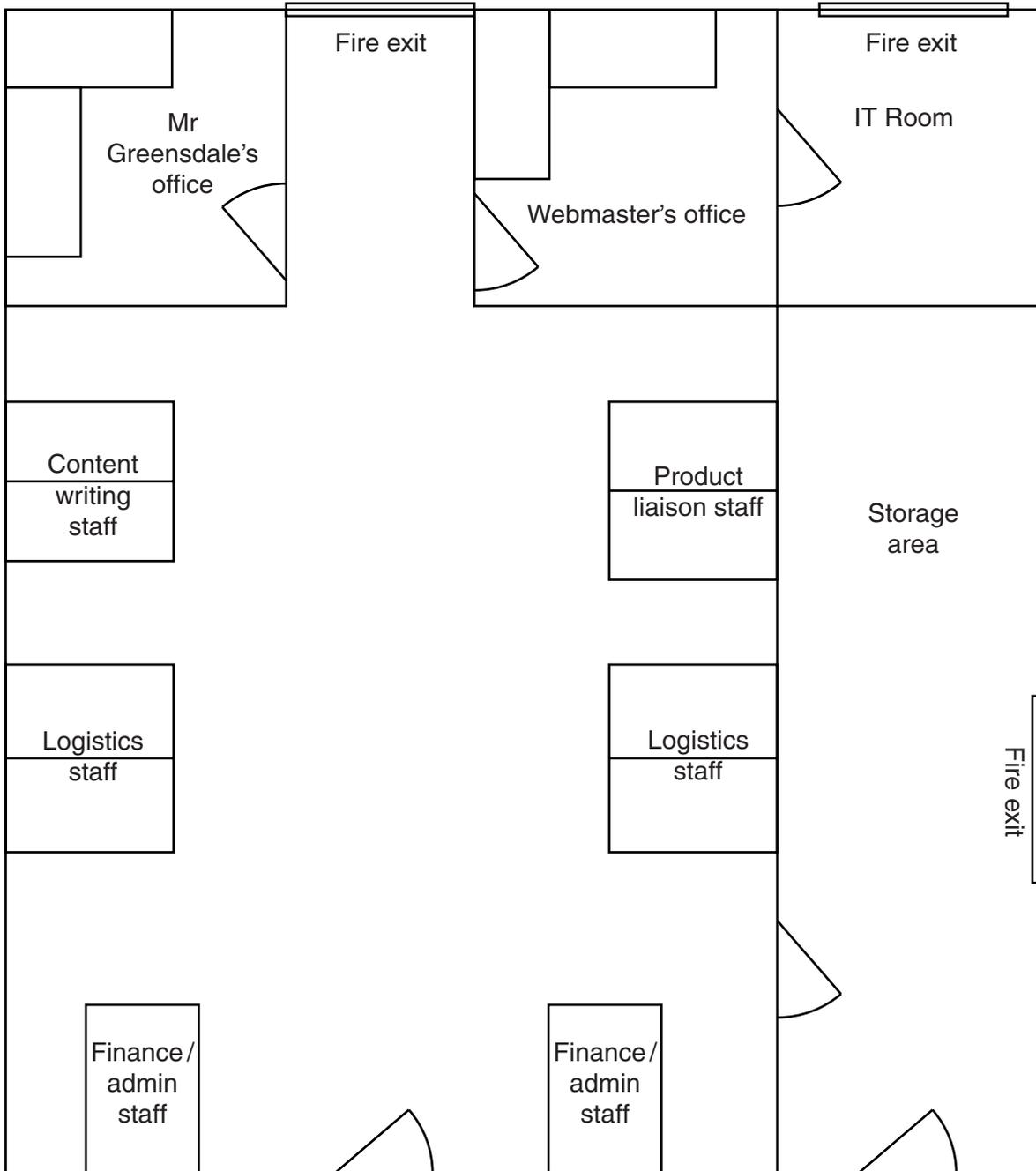Fig. 1 shows the layout of the new office building.

Fire exit

Fire exit

Mr Greensdale's office

IT Room

Webmaster's office

Content writing staff

Product liaison staff

Storage area

Logistics staff

Logistics staff

Fire exit

Finance/ admin staff

Finance/ admin staff

Fig. 1