OCR
RECOGNISING ACHIEVEMENT

ADVANCED GCE

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

G055/IC

Networking Solutions

INSTRUCTIONS FOR CANDIDATES

Pre-release Material and Tasks

To be opened on receipt

Wednesday 27 January 2010
Afternoon

Duration: 1 hour 30 minutes

OCE/21366

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.

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TASK 1

The Centre for New Ideas has asked you for advice on how to set up and use the Centre's network. You have also been asked to provide advice on how small businesses, such as Nanodot Web Services Ltd (NWS), might set up their own networks.

Carry out your own research and make notes, that could be used in discussion with the Centre, about the planning of these networks. Your notes should include:

- the benefits and disadvantages to small businesses of having their own networks
- the benefits and disadvantages to small businesses of connecting their networks to the main Centre network
- the transmission media, connectors and hardware devices that might be used throughout the building
- the software required to ensure the smooth operation and security of the networks
- the network topologies the Centre could use and how they relate to the networks in the Centre (diagram, features, operation, benefits and disadvantages)
- the different types of network available (peer-to-peer, client-server)
- the concept of broadband, sharing it between users, the method for calculating file transfer times, the protocols used and connection methods
- the services that will be available to small companies through the internet connection.

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TASK 2

The Centre for New Ideas will need some advice on setting up a network that provides access points in each office and wireless access throughout the building. The layout for one floor is shown in Fig. 1 in the case study.

Use the diagram in Fig. 2 to show the network layout for **one** floor. Your diagram must be clearly labelled to show all network hardware devices and how they are connected together.

Set up a table as shown in Table 1, adding more rows where necessary. In the table, list all the physical network components, including hardware devices and connections, identified in your diagram and, for each, justify your choice of device. (Each device must be shown on the diagram and listed in the table).

Physical network components (on diagram)	Justification

Table 1

[18]

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

TASK 3

The Centre for New Ideas will need protocol software throughout its network.

Write a short report describing the network protocols the Centre will need for its network, how it will use them and why each is suitable.

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]**

CASE STUDY

The Centre for New Ideas owns an office building located on the outskirts of a large town in the South East. It is planned to open in the summer of 2011. The Centre will rent office space to small businesses that specialise in new technologies. Each business can rent one or more rooms. Facilities provided by the Centre will include:

- reception services
- IP telephone systems
- data storage
- broadband internet access
- FTP access
- cabled and wireless network access points.

Each small business will have its own secure network with access to the building's shared broadband connection, the IP phone system and data storage. All visitors to the building will also be provided with wireless access to the internet through the Centre's network.

Each floor has an ICT room which will house the hardware necessary for the Centre's network. The Centre will provide ICT support staff who will use these rooms.

Nanodot Web Services Ltd (NWS) is a small web authoring business with limited funds. They will rent two rooms adjacent to each other on the ground floor at the Centre. There will be three members of staff in each room. NWS will require a single network covering both rooms.

The Centre and NWS will need advice on setting up their networks.

Fig. 1 shows the layout of a floor within the office building. There are four floors, all identical.

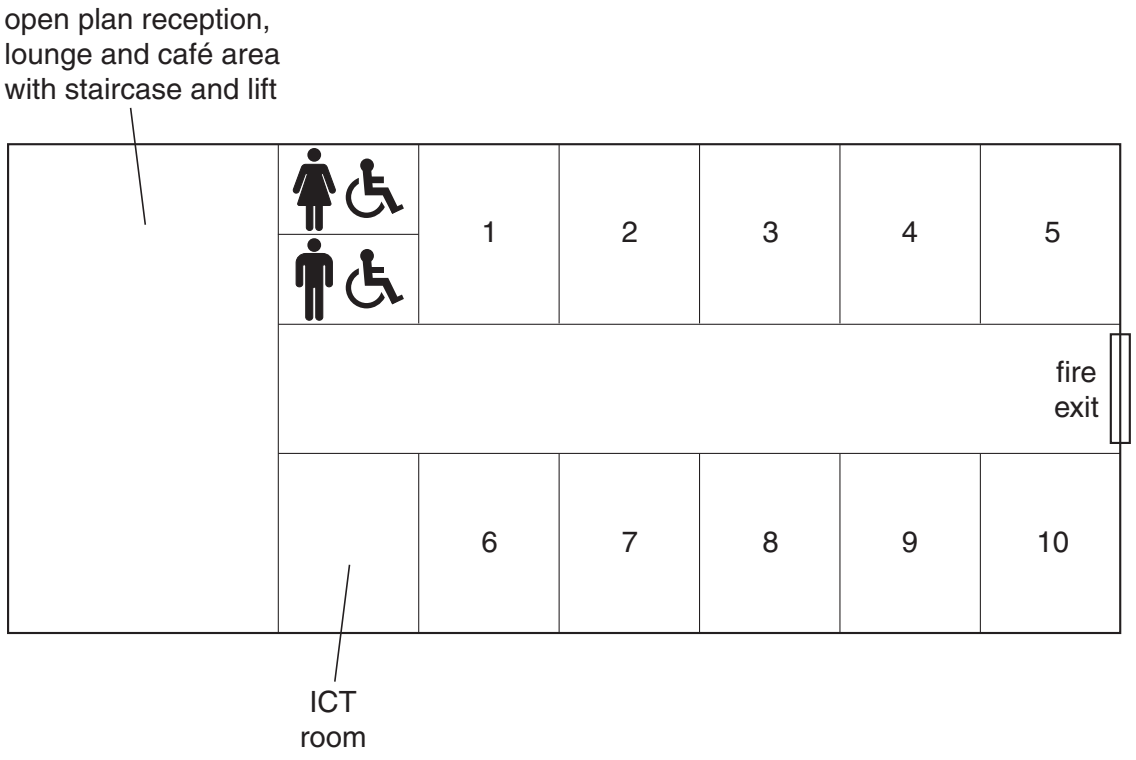

Fig. 1

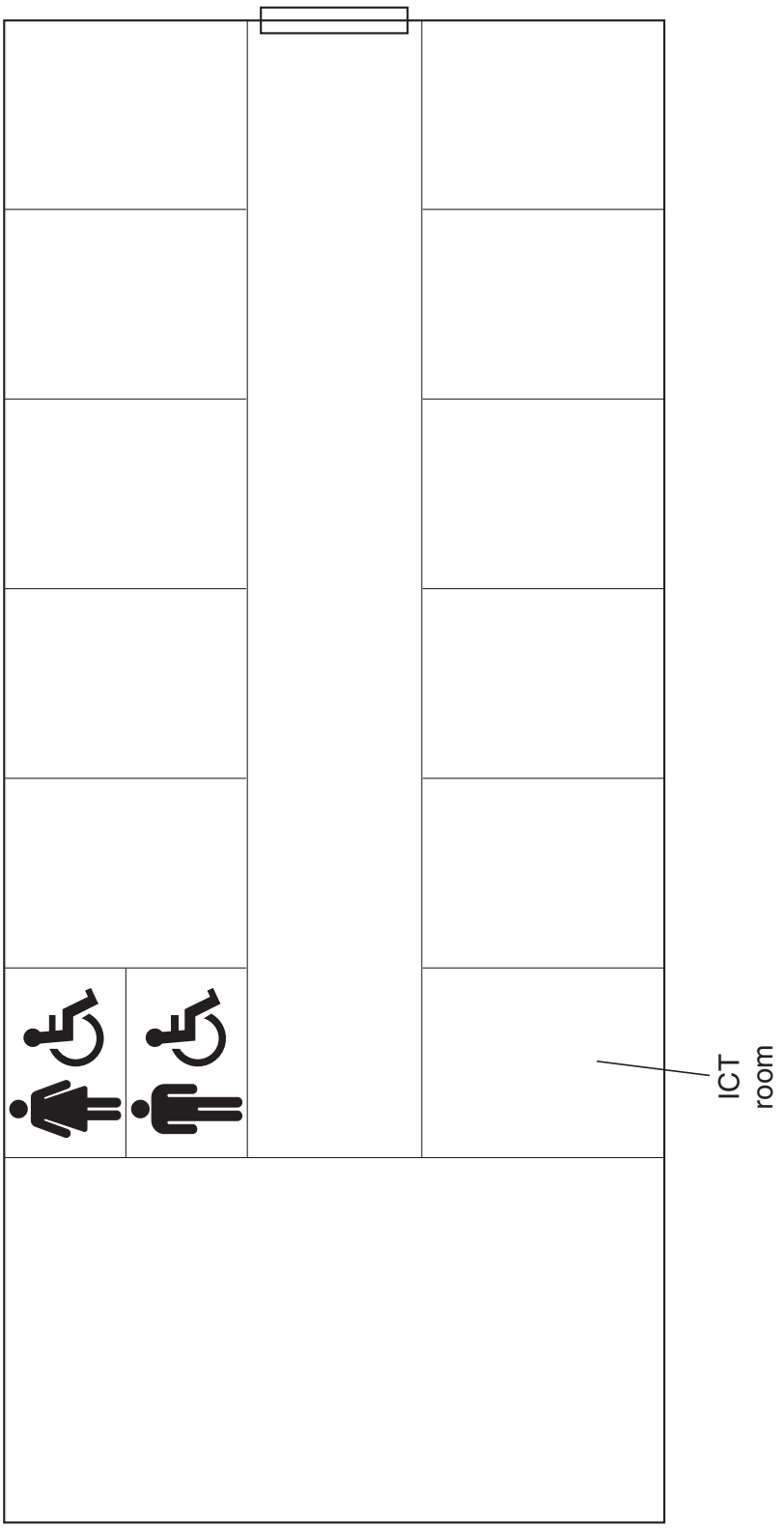

Fig. 2

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