Surname	Centre Number	Candidate Number
Other Names		2

GCE A level

1647/01

APPLIED INFORMATION & COMMUNICATION TECHNOLOGY

UNIT AICT 7

eConnect

Networking Principles, Design and Management

Paper version of on-screen assessment

A.M. THURSDAY, 23 June 2011

3 hours

1647
010001

INSTRUCTIONS TO CANDIDATES

Questions in this paper are based on the context of *Vale Home and Garden*.

The exam consists of two parts.

Time allowed for Part A: 1 hour

- The Tender (40 marks)

Time allowed for Part B: 2 hours

- The Recommendation (20 marks)
- The Implementation (40 marks)

A short break is permitted between parts A and B.

Quality of Written Communication will be assessed in the response to Question 8.

INTRODUCTION

Vale Home and Garden

INVITATION TO TENDER

Vale Home and Garden is an independent out of town retailer specialising in the supply of home and garden products. The business has grown over the last ten years and now has the following departments, all on one site:

- Furniture Department
- Garden Centre
- Building Supplies

Included on the site are a children's play area, a restaurant, a café and a separate Office Block.

Customers buy goods and place orders at the Furniture Department, Garden Centre and Building Supplies, each of which has it own manager and sales staff.

The office manager and her staff process all orders in the Office Block.

Each department and the Office Block have their own IT systems which are not connected to each other.

Vale Home and Garden has decided to obtain tenders for the contract to improve their electronic communications.

As an IT consultant specialising in network solutions, you have been invited to tender for this contract and have this opportunity to demonstrate your subject expertise by completing a number of tasks.

"Hello, I am the Managing Director here at Vale Home and Garden. I understand that there are many advantages of using networked computers but I have some concerns about networks and I would like you to address these concerns."

1. Describe how **each** of the following concerns about installing a network could be addressed:

(a) All staff will have access to the network and could possibly corrupt or destroy shared data. [1]

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(b) All shared data could be lost if there was a disaster and the computer servers were damaged. [1]

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(c) The business will incur costs administering and maintaining the network. [1]

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(d) The network may crash, staff would not be able to work and no orders could be taken. [2]

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2. There are several different communication infrastructures used to connect Local Area Networks (LANs) and to connect Wide Area Networks (WANs).

(i) Describe **one** communication infrastructure for connecting a WAN and justify why it is suitable. [2]

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(ii) Describe **two** other communication infrastructures for connecting a LAN and in each case justify why each is suitable. [4]

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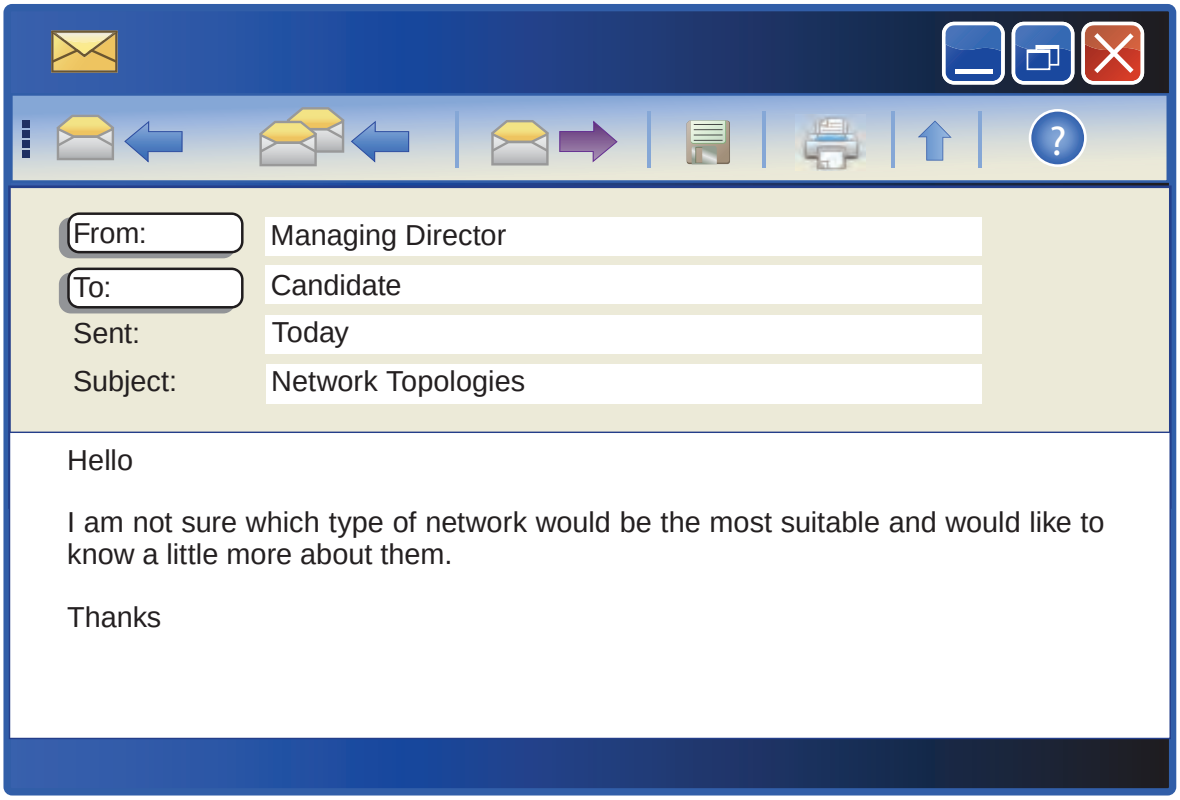
Examiner only



3. Two possible network topologies that *Vale Home and Garden* could use are a star topology or a bus topology. Recommend, with reasons, which network topology they should use. Explain why they should **not** adopt the other named topology. [4]

Examiner only

4. The functions of some common hardware devices are given below. Name **each** device.

(a) Amplifies the signal to link two cable segments. [1]

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(b) Allows wireless communication with the network. [1]

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(c) Changes the physical signals from different media. [1]

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Examiner only

5. State the most suitable protocol for **each** of the following uses.

(a) Copying a file from one location to another via the Internet. [1]

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(b) Transferring multimedia web pages over the Internet. [1]

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(c) Transferring emails between computer systems. [1]

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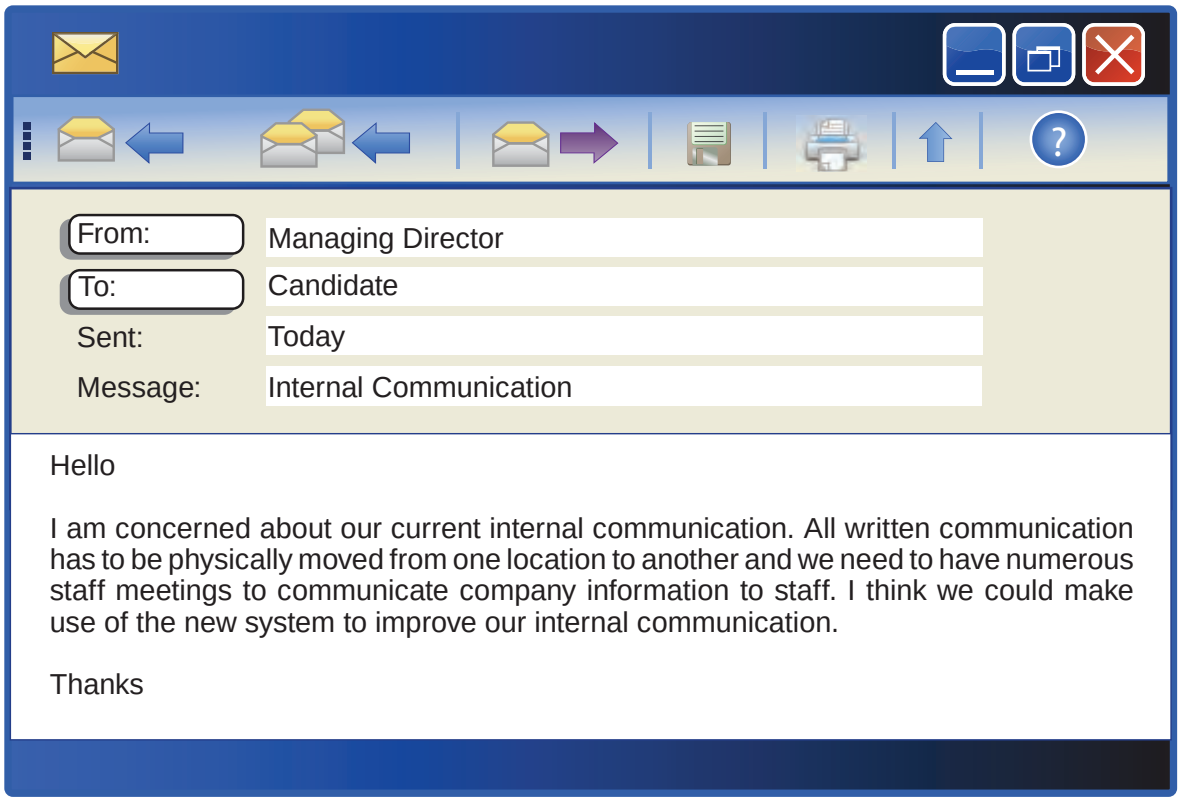
Examiner only



6. *(a)* Describe **two** ways in which a new network could be used to improve internal communication. [4]

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(b) Describe a possible problem with one of the methods chosen in Part *(a)*. [1]

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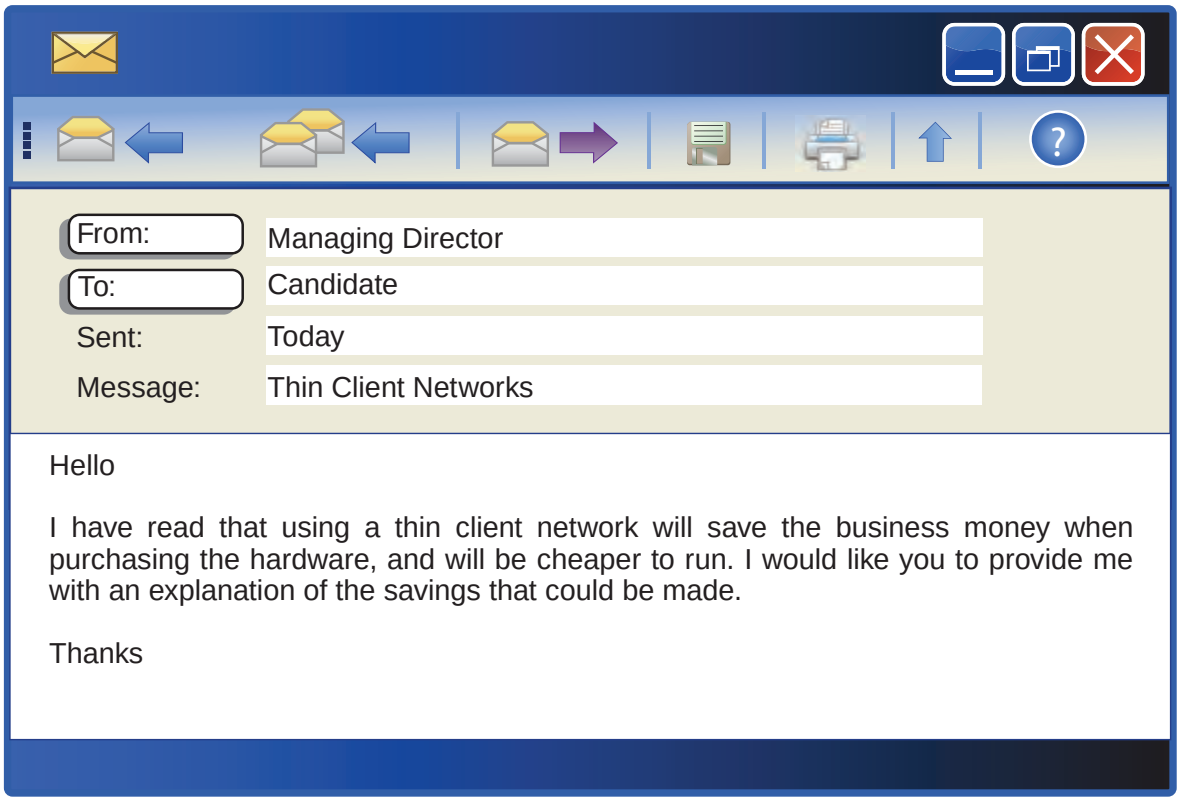

7. Explain why each workstation on a thin client network will be cheaper to purchase and have lower running costs compared to a standard workstation. [3]

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Examiner only

8. Explain in detail how packet switching and circuit switching operate. Your response should include a description of the contents of a typical packet, and give advantages of packet switching compared with circuit switching. [11]

Examiner only

END OF PART A