Surname		Centre Number	Candidate Number
Other Names			2

GCE A level

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S15-1647-01

APPLIED INFORMATION & COMMUNICATION TECHNOLOGY

UNIT AICT7 – Part A

eConnect

Networking Principles, Design and Management

Paper version of on-screen assessment

A.M. TUESDAY, 23 June 2015

1 hour

For Examiner's use only		
	Maximum Mark	**Mark Awarded**
Total Mark (PART A only)	40	

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

INFORMATION FOR CANDIDATES

Questions in this paper are based on the context of *Dragon Day Nursery*.

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 7.

SJJ*(S15-1647-01)

INTRODUCTION

Dragon Day Nursery

INVITATION TO TENDER

Dragon Day Nursery looks after children aged from three months to four years. The nursery is owned by Mr Jack and Mrs Jane Jones who employ a manager and several qualified nursery nurses. Children attend the nursery every day between 7:00am and 6:30pm. Children can attend a morning session, an afternoon session or both.

The business is expanding and they are having new premises built.

There will be an office and three separate sections for the:

- Under four year olds
- Under two year olds
- Under one year olds

The nursery nurses work in one of the three sections but can move between sections. The administration will take place in the new Office.

Parents have to book the days their children will attend the nursery before September and inform the nursery of any changes in the attendance pattern at least one month in advance.

Parents are sent an invoice every month which has to be paid in full before the start of the next month.

Dragon Day Nursery employs an accountant who visits the nursery one afternoon a week to check the accounts and invoices.

Dragon Day Nursery has decided to obtain tenders for the contract to design and install a network system to enable electronic communication in their new building.

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 owner of Dragon Day Nursery. We need a network to operate our business. I would like to know more about the characteristics and arrangement of different network topologies."

1. Unlike star topologies, ring and bus topologies are not in common use but all have positive characteristics.

   (a) State **one** benefit of a ring network compared to a bus network. [1]

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   (b) State **one** benefit of a bus network compared to a star network. [1]

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   (c) State **three** benefits of a star network compared to other network topologies. [3]

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"I would like a web site and want to know more about Internet Service Providers and the World Wide Web."

2. *(a)* Identify **three** services that are usually offered by an Internet Service Provider (ISP). [3]

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(b) Using an example, explain the role of a URL and describe the different parts of your example URL. [4]

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FROM: *The Owner*

TO: *Candidate*

SENT: Today

SUBJECT: Communication Methods

Networks can use many different types of communication methods. I would like more information about some of these methods.
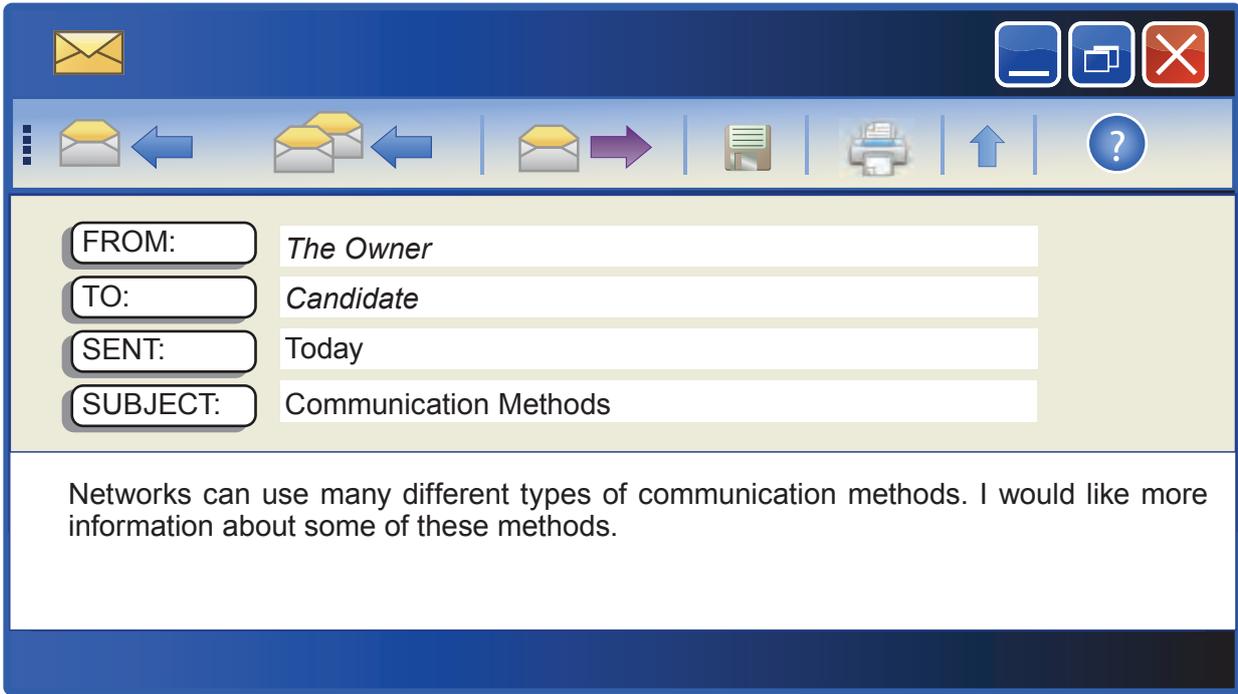
3. Packet switching is a method of communication used on Wide Area Networks. Apart from the order number of the packet which is used to re-assemble the transmitted packets, describe the typical contents of a packet. [3]

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4. *(a)* Describe **each** transmission method named below:

Simplex [1]

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Half Duplex [1]

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Duplex [1]

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(b) Explain the difference between serial and parallel transmission. [2]

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"We are undecided on the network design we should adopt. I have been told that I should install a client-server network."

5. Explain the advantages to the nursery of installing a client-server network. [6]

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FROM: *The Owner*

TO: *Candidate*

SENT: Today

SUBJECT: Virtual Networks

I am not sure whether we will require a virtual network and would like to know a little more about them.
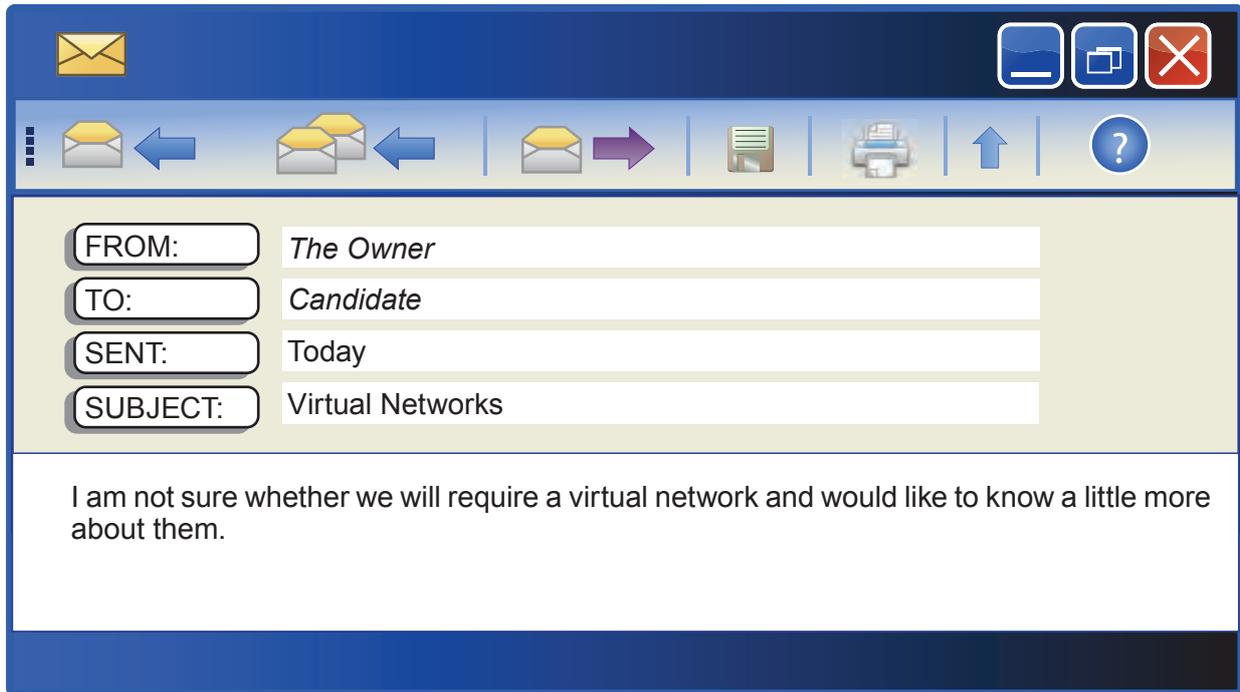
6. *(a)* What is meant by the term Virtual Private Network (VPN)? [1]

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(b) Explain the process carried out to ensure all communication on a VPN is kept secure.

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7. Discuss the benefits and drawbacks of installing networked computers compared to stand alone computers. [10]

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END OF PAPER