GCE A level

1647/01

APPLIED INFORMATION & COMMUNICATION TECHNOLOGY

UNIT AICT 7

eConnect

Networking Principles, Design and Management

Paper version of on-screen assessment

P.M. TUESDAY, 12 June 2012

3 hour examination consisting of two parts

Examiner only

Total Mark (PART A only)	

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 *Beacon Autocentre*.

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.

INTRODUCTION

Beacon Autocentre

INVITATION TO TENDER

Beacon Autocentre is an independent car service and repair centre. The business has grown over the last two years and now has the following sections, all on one site:

- Servicing Garage
- Bodywork Repair Shop
- Tyre Fitting Bay
- Vehicle Testing Centre

Customers' cars are repaired and serviced in the Servicing Garage, sprayed in the Bodywork Repair Shop; have new tyres fitted in the Tyre Fitting Bay and have an MOT carried out at the Vehicle Testing Centre.

The owner and her secretary are based in the Vehicle Testing Centre and there are mechanics working in each of the sections.

Currently there are no IT systems apart from one personal computer and a printer in the Vehicle Testing Centre.

Beacon Autocentre has decided to obtain tenders for the contract to design and install a network system to enable electronic communication.

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 Beacon Autocentre. My business is expanding and I would like a new way to communicate with my staff and customers. I know about the Internet but would like to know more about a company intranet and an extranet."

1. *(a)* Describe the difference between an intranet and the Internet giving **one** example of information that would be found on *Beacon Autocentre*'s intranet and **one** example of information that would be found on *Beacon Autocentre*'s web site. [4]

....

....

....

....

....

....

....

....

(b) Explain the term extranet giving **one** example of information that could be accessed using an extranet. [2]

....

....

....

....

Turn over.

From: *Bryony Jones*

To: *Candidate*

Sent: Today

Subject: Virtual Networks

Hello

I am not sure whether we will require a virtual network and would like to know a little more about them.

Thanks
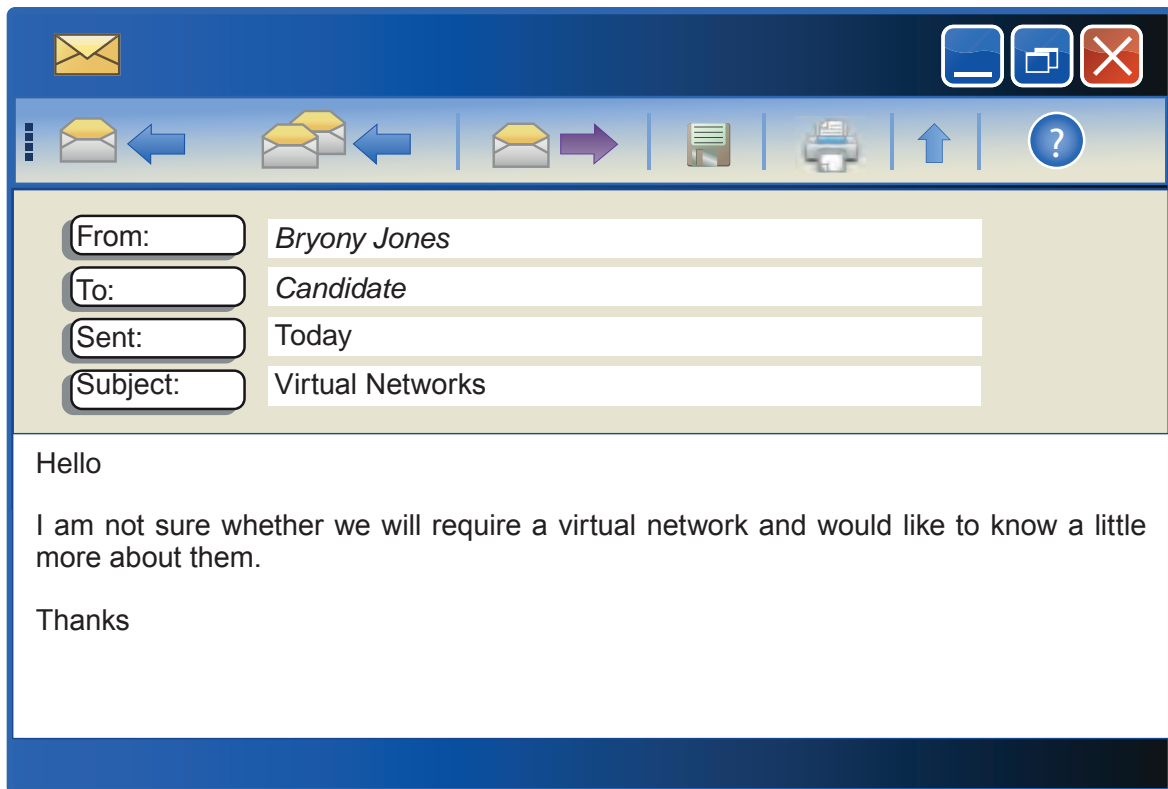
2. *(a)* Briefly describe **two** ways in which a VLAN differs from a LAN. [2]

....

....

....

....

(b) Briefly describe the characteristics of a Virtual Private Network (VPN) and explain the process carried out to ensure all communication is kept secure. [3]

....

....

....

....

....

....

"How a company uses a network seems to be changing everyday. I have heard about distributed networking and cloud-based networking. I would like some advice on these."

3. *(a)* Explain how a distributed network achieves efficient use of system resources. [2]

....

....

....

....

....

....

(b) A third party provider will store all of a company's data and applications, this is known as 'cloud-based networking'. Identify **two** benefits of cloud-based networking for a company. [2]

....

....

....

....

....

....

....

....

"I want to know more about the World Wide Web, blogs and forums and how they could be used to improve my business."

4. *(a)* Describe how information is organised on the World Wide Web and how the information can be retrieved and viewed. [2]

....

....

....

....

(b) Using an example, explain the role of a URL and describe the different parts that form a URL. [3]

....

....

....

....

....

....

5. *(a)* Describe, using an example, how a business could make use of a *blog.* [2]

....

....

....

....

(b) Describe, using an example, how a business could make use of an *internet forum.* [2]

....

....

....

....

Turn over.

From: *Bryony Jones*

To: *Candidate*

Sent: Today

Subject: Protocols

Hello again

I am aware that networks use protocols to communicate. I would like some information on typical uses for some common protocols.

Thanks
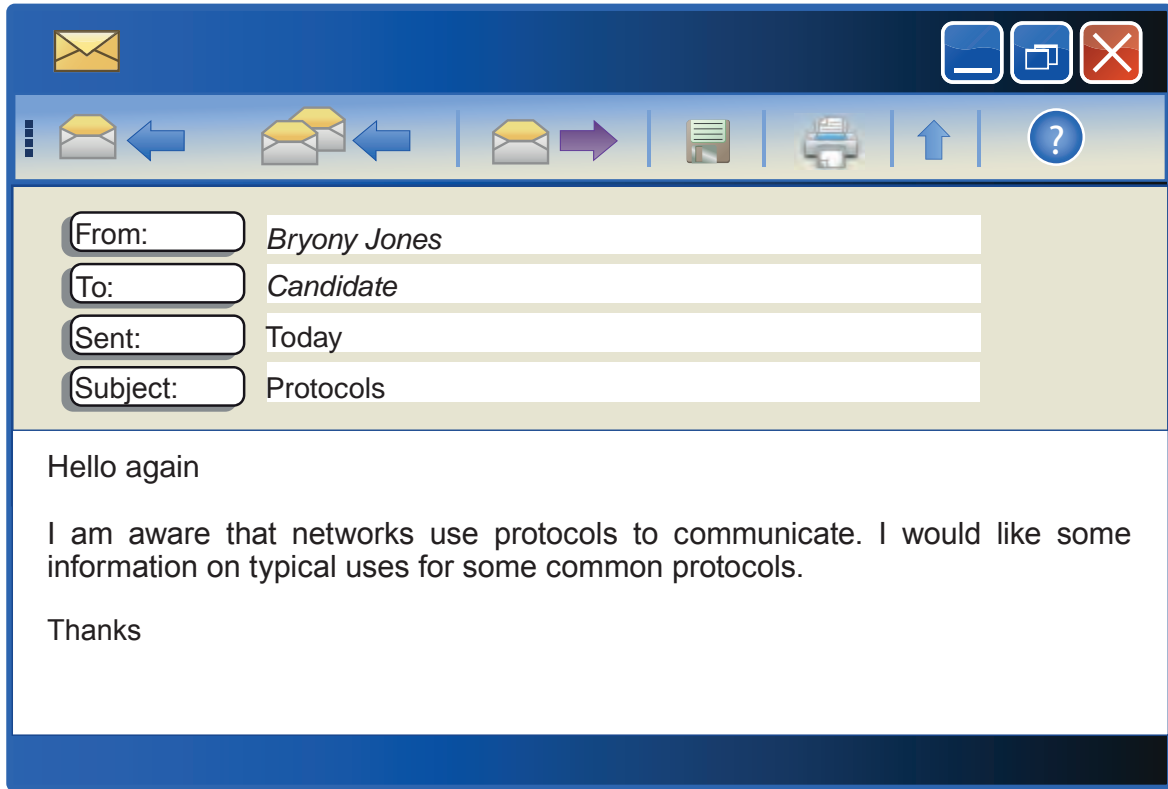
6. Describe, with an example, a suitable use for **each** of the following protocols. [6]

(a) HTTPS

....

....

....

....

(b) FTP

....

....

....

....

(c) VoIP

....

....

....

....

From: *Bryony Jones*

To: *Candidate*

Sent: Today

Subject: Network Topologies

Hello

I understand that bus topology networks are not used as often as star topology networks even though they often require less cabling and can be cheaper to install. I would like you to clarify the difference between bus and star network topologies.

Thanks

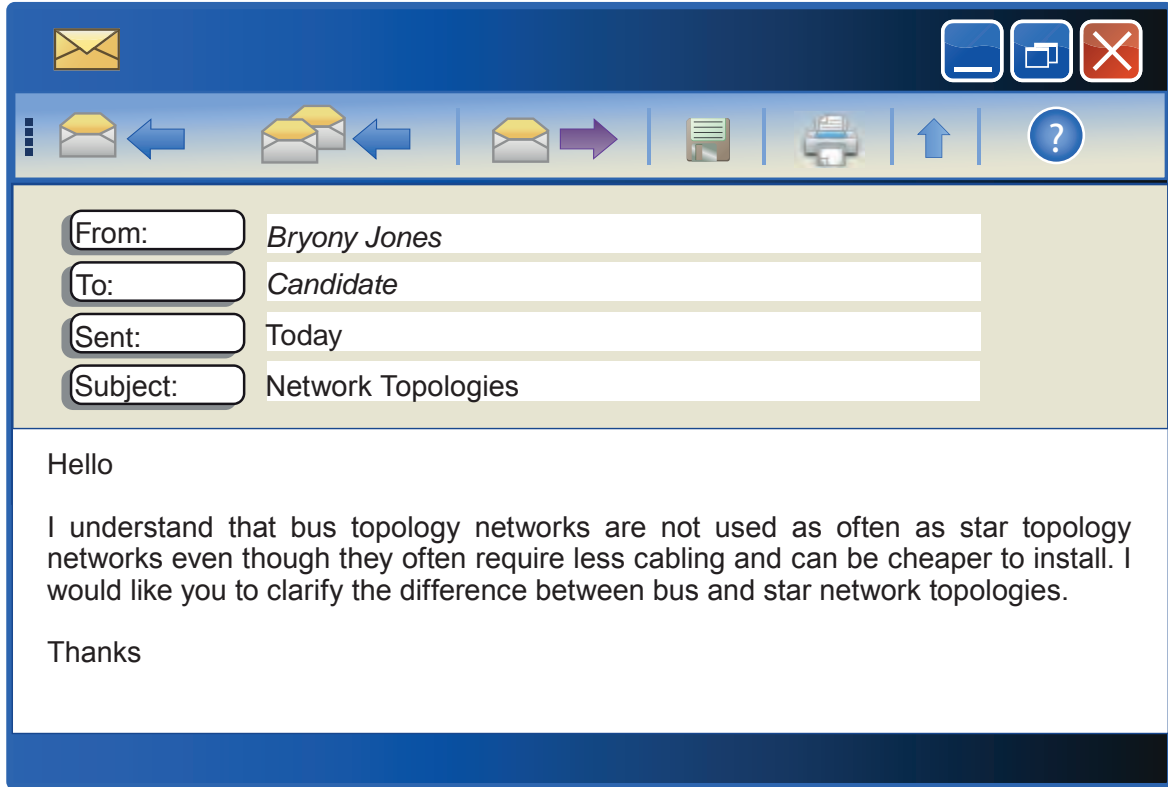**7.** Describe how communication takes place between two work stations, *station A* and *station B*, on a bus and on a star network. Recommend which topology, bus or star, should be installed at the Beacon Autocentre and justify your choice. [10]

....

....

....

....

....

....

....

....

....

....

....

....

....