GCE A level

1647/01

APPLIED INFORMATION & COMMUNICATION TECHNOLOGY

UNIT AICT7 – Part A
eConnect
Networking Principles, Design and Management
Paper version of on-screen assessment

A.M. WEDNESDAY, 22 June 2016

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 *Green Rock*.
  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 Part A, Question 7.

INTRODUCTION

Green Rock

INVITATION TO TENDER

A new activity centre, Green Rock, is being built in a remote country location. The centre will be managed by Harold Palmer and his assistant manager Henrietta Small. Visitors to the centre will have access to a range of activities and a restaurant.

The activity centre will have an office and an:

- outdoor activity area with a reception
- indoor activity area with a reception

The manager and his assistant will be based in the office where the administration will take place.

Visitors can book indoor and outdoor activities at the respective receptions.

Bookings will have to be checked when a visitor arrives at each activity area reception.

The centre owners will regularly send an auditor to the centre to check the number of bookings made for outdoor and indoor activities.

Green Rock has decided to obtain tenders for the contract to design and install a network system to enable electronic communication throughout the centre.

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.
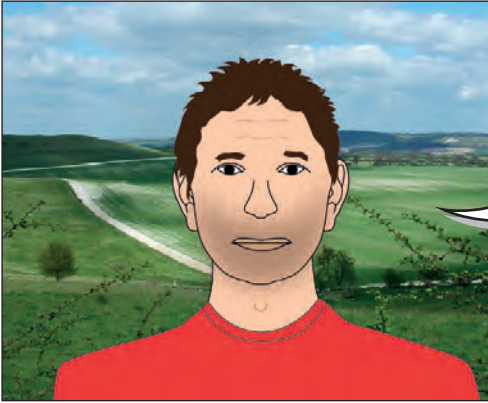
1. *(a)* Describe **three** advantages of using networked computers compared to stand-alone computers. [3]

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(b) Describe **three** disadvantages of installing and using networked computers compared to stand-alone computers. [3]

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FROM: *The Centre Manager*

TO: *Candidate*

SENT: Today

SUBJECT: Virtual Networks

The owners of Green Rock would like access to our network. I am not sure whether we will require a virtual network or a virtual private network and would like to know a little more about them.
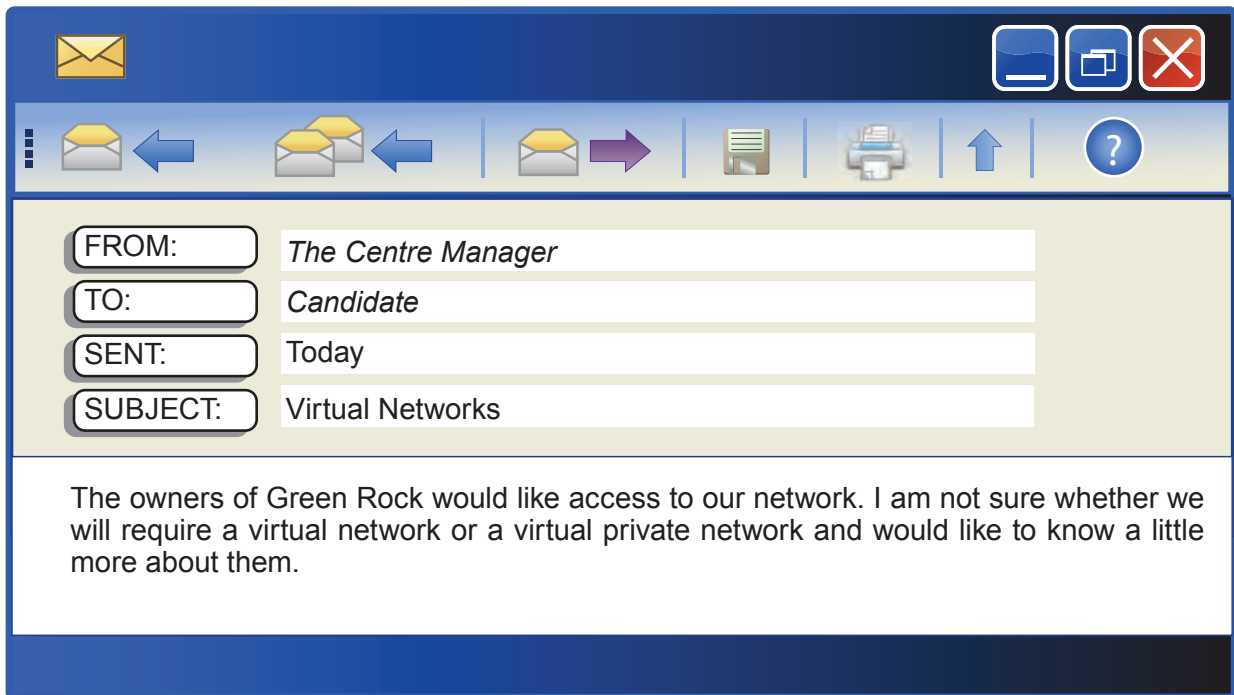
2. *(a)* State **two** characteristics of a VLAN. [2]

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(b) State **two** characteristics of a virtual private network (VPN). [2]

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(c) Describe the processes used to keep communication secure on a virtual private network (VPN). [2]

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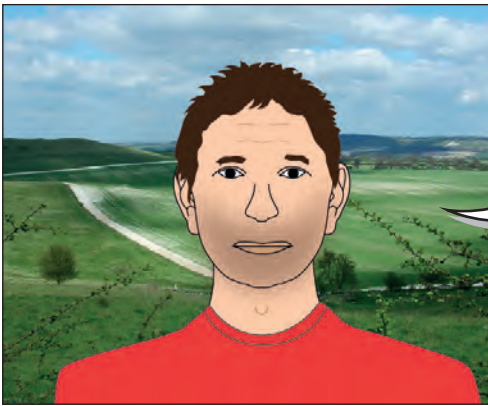
"Hello again, I would like to know more about network communication and would like you to answer a number of questions on protocols and transmission methods."

3. Name **four** communication protocols, identifying a suitable use of each. [4]

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Examiner only

4. *(a)* Name **each** transmission method described below:

(i) data is transmitted in both directions at the same time [1]

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(ii) data is transmitted in both directions but only in one direction at any time [1]

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(iii) data is transmitted in one direction only [1]

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(b) Describe the difference between serial and parallel transmission methods, giving an example of where each transmission method might be used. [4]

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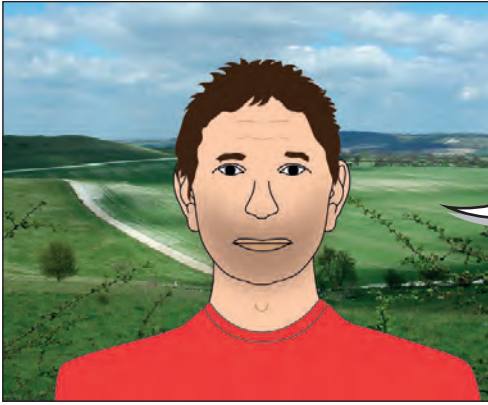
"I understand that buying and maintaining hardware for our network will be a major expense so I would like you to provide more information about thin client networks."

5. *(a)* Describe the difference in processing capability between thin client workstations and standard workstations. [2]

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(b) Explain why Green Rock should consider installing a thin client network. [3]

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FROM:	*The Centre Manager*
TO:	*Candidate*
SENT:	Today
SUBJECT:	Peer-to-peer networks

We are undecided on the network design we should adopt and would like to know more about peer-to-peer networks.
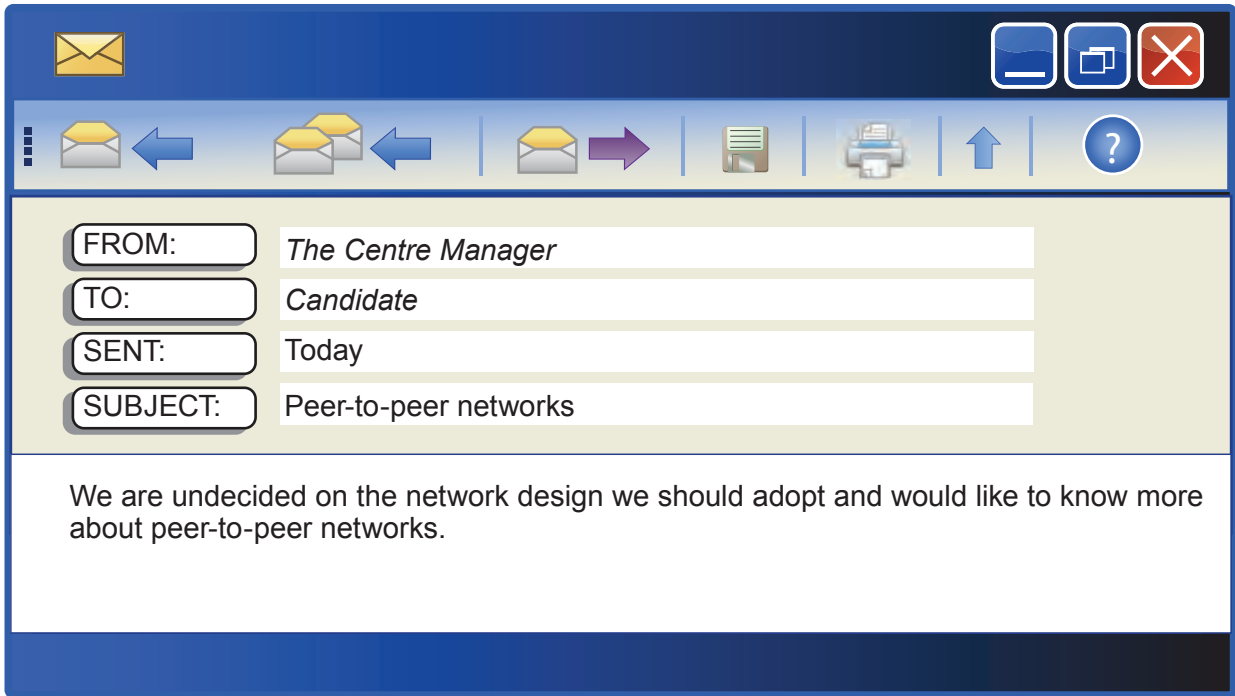
6. Describe the main features of a peer-to-peer network and give **one** reason why Green Rock might consider installing a peer-to-peer network. [4]

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7. Explain how packet switching operates on the internet. Your answer should include reasons why packet switching is the preferred method of communication on wide area networks. [8]

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END OF PAPER

For continuation only.

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