OCR
RECOGNISING ACHIEVEMENT

ADVANCED GCE UNIT

G055

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

Unit 16: Networking Solutions

FRIDAY 15 JUNE 2007

Afternoon

Time: 1 hour 30 minutes

Additional materials:
Pre-release material and tasks with candidate instructions
Candidates pre-prepared materials

Candidate Name

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and Candidate number in the boxes above.
- Answer **all** the questions.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is 100.
- No marks will be awarded for using brand names of software packages or hardware.

Question number	For Examiner's Use Only	Max
Task 2		21
Task 3		9
1		3
2		4
3		2
4		13
5		4
6		8
7		4
8		8
9		4
10		6
11		2
12		4
13		2
14		4
15		2
TOTAL		100

This document consists of **11** printed pages, **1** blank page and an insert.

[Turn over

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PLEASE DO NOT WRITE ON THIS PAGE

Section A

This section relates to the case study and tasks on Rolling Rocks.

1   Identify **three** costs to Rolling Rocks of maintaining and supervising the network.

Cost 1 ....

     ....

Cost 2 ....

     ....

Cost 3 ....

     ....[3]

2   Describe **two** disadvantages to Rolling Rocks of networking the computers.

Disadvantage 1 ....

     ....

     ....

Disadvantage 2 ....

     ....

     ....

     ....[4]

3   Rolling Rocks can choose to install a peer-to-peer network or a client-server network.

Give **two** reasons why Rolling Rocks might consider a client-server network.

Reason 1 ....

     ....

Reason 2 ....

     ....[2]

[Turn over

4 Two of the network topologies available to Rolling Rocks are bus and star. Fig. 1 shows a diagram of the logical layout for a bus topology.
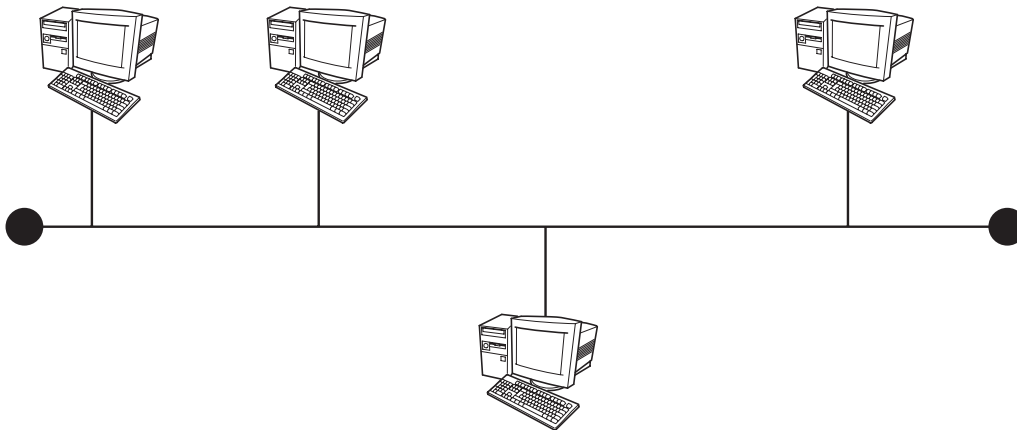
Fig. 1

(a) Give **three** features of a bus topology.

Feature 1 ....

....

Feature 2 ....

....

Feature 3 ....

....[3]

(b) (i) Draw a diagram to show a star topology.

[1]

(ii) Give **three** features of a star topology

Feature 1 ....

....

Feature 2 ....

....

Feature 3 ....

....[3]

(c) Evaluate the use of a star topology for the Rolling Rocks network.

....

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....

....[6]

[Turn over

5 The network might be connected using fibre optic cable.

(a) Identify a connector that would be used with this cable.

....[1]

(b) Identify **one** characteristic of fibre optic cable.

....

....[1]

(c) Explain why this type of cable and connector is unlikely to be considered suitable for the network at Rolling Rocks.

....

....

....

....[2]

6 The network at Rolling Rocks will need some new hardware.

Describe the function of each of the following types of hardware.

(a) active hub ....

....

....

....[2]

(b) gateway ....

....

....

....[2]

(c) Uninterrupted Power Supply (UPS) ....

....

....

....[2]

(d) file server ....

....

....

....[2]

[Turn over

7 Rolling Rocks might choose to use the NetBEUI protocol throughout their local area network.

(a) Describe the NetBEUI protocol.

....

....

....

....[2]

(b) Explain why this protocol might be chosen.

....

....

....

....[2]

8 The Managing Director understands that there could be a higher risk of hackers accessing the network once it has been installed and connected to the Internet.

(a) What is a hacker?

....[1]

(b) Describe how a hacker might access the network?

....

....

....

....

....

....[3]

(c) Describe **two** ways that the company can protect itself against the threat of attack by hackers.

Way 1 ....

....

....

....

Way 2 ....

....

....

....[4]

9 Rolling Rocks could produce their own web-based advertising materials.

Describe the benefits of using web-based advertising.

....

....

....

....

....

....

....

....[4]

Section B

You do not need the case study or your tasks to answer these questions. Answer these questions on the lines provided.

10 A company wants to set up a network that allows its travelling sales staff to communicate with each other and with the head office while out on sales calls. Technology can be used to allow them to use a Virtual Private Network (VPN) operating over the Internet.

(a) Describe **one** advantage of using a VPN.

....

....

....

....[2]

(b) Describe **one** disadvantage of using a VPN.

....

....

....

....[2]

(c) Identify **two** items of hardware that would be needed to create a VPN.

Item 1 ....

....

Item 2 ....

....[2]

11 When connecting a network to the Internet a dial-up or a broadband connection can be used.

Describe **one** difference between a dial-up and a broadband connection.

....

....

....

....[2]

12 Describe **two** characteristics of Token Ring technology.

Characteristic 1 ....

....

....

....

Characteristic 2 ....

....

....

....[4]

13 An IP header contains a Time To Live (TTL) field.

What is the purpose of the TTL field?

....

....

....

....[2]

14 Identify **four** measures that can be taken by a company to ensure that passwords remain effective.

Measure 1 ....

....

Measure 2 ....

....

Measure 3 ....

....

Measure 4 ....

....[4]

[Please turnover for question 15]

[Turn over

15 A problem log will contain details of problems encountered while using a network.

How can problem logs be filed so that they can be effectively retrieved?

....

....

....

....[2]