

ADVANCED GCE

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

G055

Unit 16: Networking Solutions

Candidates answer on the question paper

OCR Supplied Materials:

- Instructions for Candidates G055/IC (inserted)

Other Materials Required:

- Candidate's pre-prepared materials

**Friday 23 January 2009
Morning**

Duration: 1 hour 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided, however additional paper may be used if necessary.
- Attach your pre-prepared material for tasks 1–3.

INFORMATION FOR CANDIDATES

- The number of marks 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.
- This document consists of **12** pages. Any blank pages are indicated.

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

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Section A

This section relates to the case study and tasks on the Sports Injury Clinic (SIC).

1 Describe **one** benefit to SIC of using an intranet.

.....
.....
.....
..... [2]

2 The specialists at SIC will use a wireless Local Area Network (WLAN).

Identify **three** characteristics of a WLAN.

Characteristic 1

.....

Characteristic 2

.....

Characteristic 3

..... [3]

3 SIC may need a broadband modem attached to their proxy server to connect the network to the internet.

Describe the function of the broadband modem.

.....
.....
.....
..... [2]

4 The part of the SIC network used by the specialists will be a Virtual Local Area Network (VLAN).

(a) Describe **two** items of hardware required to set up a VLAN

Item 1

.....

.....

.....

Item 2

.....

.....

..... [4]

(b) Describe **two** benefits to the specialists of introducing their own virtual network.

Benefit 1

.....

.....

.....

Benefit 2

.....

.....

..... [4]

5 The network at SIC will be set up following standard topologies. The part of the network situated in the offices will be a star network.

(a) Draw a fully labelled diagram of a logical star topology.

[4]

(b) Complete the table below to identify **two** components of a star network that make it vulnerable to failure. State which part of the network will be affected by the failure of each component.

	Component	Which part affected
1		
2		

[4]

(c) Explain **one** useful feature of a star network.

.....

.....

.....

..... [2]

6 When their network has been installed, SIC will be able to benefit from e-commerce.

(a) Define the term e-commerce.

.....
..... [1]

(b) Identify **two** e-commerce services that SIC can use, and give a benefit of each.

Service 1
.....
Benefit
.....
Service 2
.....
Benefit
.....
..... [4]

(c) Identify **one** item of hardware required to use e-commerce.

.....
..... [1]

7 SIC will need a variety of software to be installed on their new network to access internet services.

Describe the function of each of the following types of software:

(a) FTP software

.....
.....
.....
..... [2]

(b) web page editing software

.....
.....
.....
..... [2]

(c) firewall software.

.....
.....
.....
..... [2]

8 SIC will set up an internet connection for their network. Connection settings must be recorded for use if the connection ever needs resetting.

Identify **two** pieces of information that should be logged when an internet connection is set up.

Information 1
.....

Information 2
.....
..... [2]

SECTION B

You do not need the case study or your tasks to answer these questions.

10 A cable is required to connect a network with workstations and servers that could be more than 500m apart.

(i) Identify a suitable cable and connector for this network.

.....
.....
.....
..... [2]

(ii) Justify your choice of cable.

.....
.....
.....
..... [2]

11 Describe the HTTP protocol.

.....
.....
.....
..... [2]

12 Explain the term modulation and give an example of where it is used.

.....
.....
.....
.....
..... [3]

13 Networks that are connected to the internet often use IP subnet addresses for their connected computers.

(a) Define IP subnet address.

.....
.....
.....
..... [2]

(b) A network has a main router and two other routers. The IP addresses served by each router are shown in the table below.

	Router 1	Router 2
1 st IP address	176.92.103.0	176.92.103.128
Last IP address	176.92.103.127	176.92.103.255

The main router uses a subnet mask so that it can just send a packet to the correct router.

What subnet mask should be used to determine which router to send to?

.....
.....
.....
.....
.....
..... [3]

14 (a) Explain the purpose of a communications log.

.....
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..... [3]

(b) Identify **three** items that might be included in a communications log.

.....
.....
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.....
.....
..... [3]

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