

**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

**Thursday 4 June 2009
Afternoon**

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.

FOR EXAMINER'S USE

Question number	Max mark	
Task 2	21	
Task 3	9	
1	2	
2	4	
3	2	
4	7	
5	8	
6	9	
7	5	
8	2	
9	11	
10	4	
11	3	
12	2	
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 how SIC might use an extranet.

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

2 Describe **two** benefits to SIC of introducing a network.

Benefit 1

.....
.....
.....

Benefit 2

.....
.....
..... [4]

3 SIC will need a network interface card (NIC) for each computer.

Describe the purpose of the NIC.

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

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

(a) Identify the characteristics of a VLAN.

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

(b) Identify **two** items of software for a VLAN and state how each is configured.

Item 1
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.....
.....
Item 2
.....
.....
..... [4]

5 SIC will need a variety of networking hardware to be installed.

Explain the function of each of the following:

(a) router

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..... [2]

(b) switch

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..... [2]

(c) patch panel

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..... [2]

(d) gateway

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..... [2]

6 The network at SIC will be set up following standard topologies. The separate sections of the network will be fully connected following a mesh topology.

(a) Draw a labelled logical topology diagram of a fully connected mesh network.

[3]

(b) Identify **two** components required to create a physical mesh network.
For each component state which part of the network will be affected if it failed.

Component 1

Part affected

Component 2

Part affected [4]

(c) Identify **one** useful feature of the mesh network stating why it is useful.

Feature	Why useful

[2]

7 When their network has been installed, the specialists will benefit from the use of a discussion forum.

(a) Explain the term discussion forum and state **two** uses that the specialists can make of it.

Explanation

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.....

.....

Use 1

.....

Use 2

.....

..... [4]

(b) Identify **one** item of hardware required for a discussion forum.

.....

..... [1]

8 SIC will use FTP software to upload web pages to their ISP.

Identify **two** pieces of information that will be needed by the software when uploading files.

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 are less than 100m apart but situated in an area where there is a large amount of electrical equipment.

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

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

(ii) Justify your choice of cable.

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..... [2]

11 Explain the purpose of the various parts of a Uniform Resource Locator such as <http://www.ocr.org.uk>.

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

12 Define analogue signal and give an example of where it is used.

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..... [2]

13 When data is transferred over a telecommunications line its speed is often determined by the available bandwidth.

(a) Define bandwidth.

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..... [2]

(b) Calculate the estimated time to transfer a 32 KB file over a channel with a bandwidth that allows a transfer speed of 64 Kbps.

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..... [3]

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

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..... [3]

(b) Identify **three** items of information that might be included in a problem log.

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

11
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