![cea Rewarding Learning]
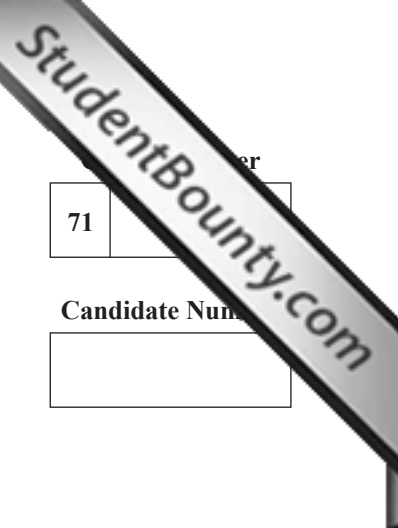
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ADVANCED
General Certificate of Education
2012

Applied Information and Communication Technology

Assessment Unit A2 13

assessing

Unit 13: Networking and Communications

[A6J71]

A6J71

TUESDAY 12 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Answer **all fifteen** questions on the paper in the spaces provided.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Quality of written communication will be assessed in **questions 4, 8 and 11**.

ADVICE TO CANDIDATES

You are advised to take account of the marks for each part question in allocating the available examination time.

For Examiner's use only			
Question	Marks Available	Marks	Remark
1	3		
2	6		
3	3		
4	12		
5	4		
6	6		
7	6		
8	12		
9	6		
10	6		
11	12		
12	4		
13	6		
14	8		
15	6		
Total	**100**		

7335

1 In the box below tick (✓) **three** items that must be present to enable a small peer to peer network to be set up.

Cable	
Network software	
Firewall	
Four computers	
Printer port	

[3]

2 Describe what is meant by the communications process known as "handshaking".

(a) _____

_____

_____

_____

_____[2]

(b) This process can be either unidirectional or bidirectional. Describe, giving a suitable example in each case, how each of these handshaking transfers takes place.

(i) Unidirectional communication

_____

_____

_____

_____

_____

(ii) Bidirectional communication

_____

_____

_____

_____

_____[4]

3 In the box below tick (✓) **three** methods that may describe the process known as serial data transmission.

Half Duplex	
Double Flex	
Full Duplex	
Token Flex	
Simplex	

[3]

4 Asynchronous data transmission can be used when data is sent from one device to another. Bytes of data are packaged, sent and checked. Draw a diagram in the space provided to show this process.

Describe how this takes place.

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_____[12]

5

[Turn over

5 Tick (✓) **four** features in the box below that would be associated with the Ethernet protocol.

Baseband signalling	
Bluetooth technology	
Cable sharing	
Cable length restrictions	
Multiple access	
Token ring	

[4]

6 When referring to star networks, identify which of the statements listed below are **true** and which are **false**.

In a star network the failure of one of the stations affects the whole network.	
Within a star network, each network interface card has its own unique identifier.	
Only one hub can be installed in a star network.	
Star networks can be used as peer to peer networks when there are only a few computers to be connected.	
The cabling for star topologies requires the use of terminators.	
A star network uses a token to pass on data from one node to another.	

[6]

7   Describe **three** features of a router.

Feature 1_____

_____

_____

Feature 2_____

_____

_____

Feature 3_____

_____

_____[6]

8 Computer networks which are connected to the Internet are particularly vulnerable to security threats.

(a) List **four** different types of threat to network security.

1. _____

2. _____

3. _____

4._____ [4]

(b) Describe the threats listed in part **(a)** and explain how these threats may be minimised.

_____

_____

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_____[8]

9 When referring to Dynamic Host Control Protocol (DHCP), identify which

of the statements listed below are **true** and which are **false**.

It is used to control the number of users on the network.	
It protects the file server in the network from Spam attack.	
It is a protocol for assigning or supplying IP addresses.	
It makes network administration much easier.	
It allows a device to have a different IP address every time it connects to the network.	
It helps to combat computer fraud.	

[6]

[Turn over

10 Describe **three** features that you would associate with a firewall.

Feature 1_____

_____

_____

Feature 2_____

_____

_____

Feature 3_____

_____

_____[6]

11 A school currently has a star network with access to the Internet set up in a small classroom. The students use the Internet as a research tool when submitting assignments and coursework. The head of ICT is considering two ways of expanding the network.

OPTION 1	**OPTION 2**
An extra cabled computer room with access to the Internet	Additional laptops with wireless network cards

Consider these options and discuss the main advantages and disadvantages of each.

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_____[12]

12 In a client server network describe **two** advantages to a user who uses a roaming profile.

Advantage 1 _____

_____

_____

Advantage 2 _____

_____

_____[4]

13 e-mail is considered a useful business tool but there are some issues regarding its use. Describe, with an example, how each of the following issues might impact negatively on the use of e-mail in a business.

(a) Spam _____

_____

_____

_____

(b) Privacy _____

_____

_____

(c) Viruses _____

_____

_____[6]

14 Describe **two** advantages and **two** disadvantages to a business of using video conferencing to communicate with other business colleagues who are based in a different country.

Advantage 1 _____

_____

_____

_____

Advantage 2 _____

_____

_____

_____

Disadvantage 1_____

_____

_____

_____

Disadvantage 2_____

_____

_____

_____[8]

15 Complete the sentences in the box below by inserting the correct number.

1. DNS   2. HTTP   3. NAT
4. A DoS attack.   5. Bluetooth   6. Streaming video

	hides IP addresses.
	is a sequence of moving images sent in compressed form over the Internet.
	is an open wireless technology standard for exchanging data over short distances.
	tries to cause the removal of network services to users.
	translates domain names into IP addresses.
	defines how messages are formatted and transmitted on the World Wide Web.

[6]

THIS IS THE END OF THE QUESTION PAPER

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