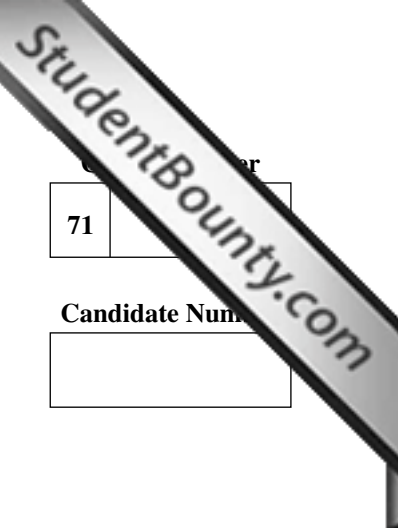




ADVANCED
General Certificate of Education
2009



71

Candidate Number

Applied Information and Communication Technology

Assessment Unit A2 13

assessing

Unit 13: Networking and Communications

[A6J71]



TUESDAY 19 MAY, 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 seventeen** questions on the paper in the spaces provided.

Quality of written communication will be assessed in all questions.

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.

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	4		
2	4		
3	4		
4	4		
5	4		
6	6		
7	4		
8	6		
9	6		
10	5		
11	5		
12	6		
13	6		
14	10		
15	12		
16	8		
17	6		
Total	100		

1 Explain the following.

A star network is _____

A ring network is _____

A bus network is _____

A LAN is _____

_____ [4]

2 In the box below tick (✓) the items that **need not** be present to enable a small local area network to be set up.

Cable	
Bridge	
Two computers	
Serial port	
Printer	
Broadband connection	

[4]

3 Choose the correct words from the list below to fill in the blanks in the sentences describing the device known as a hub.

data segments printers packet signal ports

A hub is a common connection point for devices in a network. Hubs are commonly used to connect _____ in a LAN. A hub can contain multiple _____. When a _____ arrives at one port, it is retransmitted to all other ports on the hub.

The hub simply serves as a conduit for the _____. [4]

4 In the box below tick (✓) **four** acronyms that may be associated with synchronous data transmission

Block Cyclic Check (BCC)	
Acknowledge (ACK)	
Parity Check (PC)	
Start of Text (STX)	
Synchronise Timers (SYN)	
End of Broadcast (EOB)	

[4]

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

Baseband	
Shared medium	
Carrier sense	
Broadband	
Multiple access	
Bluetooth	

[4]

6 List and describe **three** main features associated with a switch.

Feature 1 _____

Feature 2 _____

Feature 3 _____

[6]

7 In the box below tick (✓) **four** appropriate phrases that could be used to describe Dynamic Host Control Protocol (DHCP).

It sets up the serial port to receive data transmissions	
It controls the printer drivers used in the network	
It is a protocol for assigning or supplying IP addresses	
It simplifies network administration	
It supports a mix of static and supplied IP addressing	
It helps set up Instant Messaging	
It can assign router or gateway addresses	

[4]

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

1. IP addressing 2. A subnet mask 3. TCP/IP
4. A MAC address 5. An IP address 6. ARP

	is a unique identifier associated with an item of networking equipment.
	is a discovery protocol used to match a MAC address with an IP address.
	is used to determine the host section of a network.
	allows the management of network traffic to become easier and more practical.
	is a protocol used on the Internet.
	can pass through many routers on its way from source to destination.

[6]

9 Each of the following sentences about networking is either true or false. Place the word **true** or **false** correctly into the space opposite each sentence.

A firewall is a security feature that prevents an internal network or PC being entered by unauthorised users.	
Wireless networking can use a type of security known as WEP.	
A file server is a dedicated piece of hardware that handles all software updates.	
A software engineer's main task is to set up users' access rights and permissions.	
DNS is a system that translates domain names into IP addresses.	
Denial of Service (DoS) is a type of computer virus.	

[6]

10 Choose and insert a correct word from the list below to complete the section on video conferencing.

- multipoint microphone RAM Ethernet e-mail address**
ISDN hotspots Internet point-to-point Instant Messaging

Video conferencing uses a computer, video camera, _____
and a network such as the _____ to conduct a live
conference between two or more people. A two person video conference
is known as _____, while more than two involved in a
session is known as _____. It may use
_____ as a connection tool.

[5]

11 In the box below tick (✓) **all** the features below that you would expect to find associated with a wireless network.

It uses radio to transmit data.	
It is more secure than wired systems.	
It uses the same network card as found in non wireless systems.	
It can be subject to war-driving.	
It can be used in locations having "hotspots".	
It needs an antenna to function.	
It may be subject to interference from devices operating at the same frequency.	

[5]

12 e-mail is a very important business tool today. Identify **two** business features provided by e-mail and explain how to use each feature.

e-mail business feature 1: _____

e-mail business explanation 1: _____

e-mail business feature 2: _____

e-mail business explanation 2: _____

_____ [6]

14 Choose the correct word from the list below to fill in the blanks in the paragraph describing client server networks.

- performance domain function cost centralised
 client environment reliability server security

In a client server network the _____ is an individual user's computer or application that does a certain amount of processing on its own. The _____ consists of one or more computers that receives and processes requests. In a small organisation a single server machine may have more than one _____. A computer used to authenticate access and log-in to the computer system itself is called a _____ controller. Client server architecture combines the best concepts in _____ robust infrastructure. If implemented properly this architecture achieves the best balance between complexity, _____ and ease of use with excellent scalability and _____. The client server _____ is a system with advantages such as _____ and _____.

[10]

15 Describe **three** features of each of the following

Computer virus

1. _____

2. _____

3. _____

Trojan horse

1. _____

2. _____

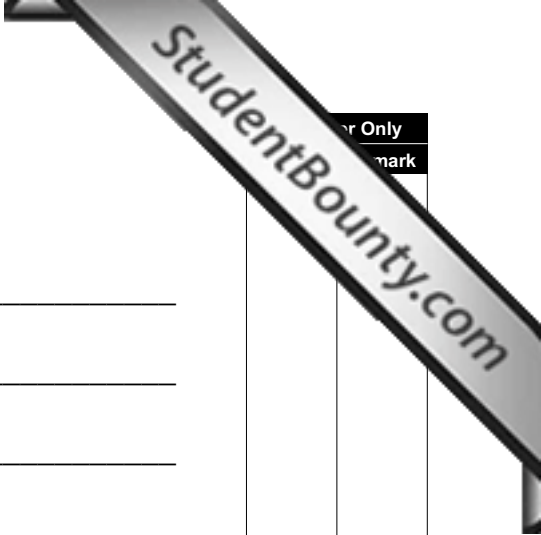
3. _____

Worm

1. _____

2. _____

3. _____



Mark	Only
mark	

Denial of service attack

1. _____

 2. _____

 3. _____

- [12]

16 Complete the following sentences by filling in the blanks in the table below.

PSDN is a	
	is used as a communications medium especially used in video conferencing
Broadband transmission is a data transmission medium which can	
Bandwidth is a measure of the	
A proxy server is	
	is the text name corresponding to the numeric IP address of a computer on the Internet.
IP is	
	is the system which translates URL domain names into IP addresses.

[8]

17 Choose the correct words from the list below to complete the paragraph on multi-site connection.

- shared public encrypted tunnelling token**
private dedicated Internet addressed packet

VPN (Virtual Private Networks) usually refers to a network in which some of the parts are connected using the _____ Internet, but the data sent across the Internet is _____, so the entire network is virtually private. It is a way to communicate through a _____ server securely to a corporate network over the Internet. There will be general access to the _____ rather than leased lines for connections. Security can be guaranteed by the use of _____ in which the entire information _____ is encapsulated. [6]

THIS IS THE END OF THE QUESTION PAPER
