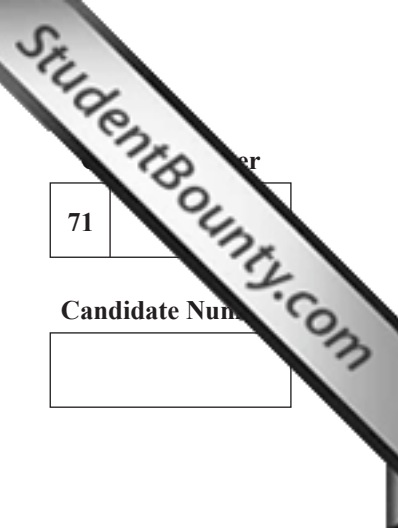




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71  
Candidate Number

# Applied Information and Communication Technology

Assessment Unit A2 13

*assessing*

Unit 13: Networking and Communications

[A6J71]

FRIDAY 24 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 sixteen** questions on the paper in the spaces provided.

### INFORMATION FOR CANDIDATES

The total mark for this paper is 100.  
Quality of written communication will be assessed in questions 7, 8, and 12.  
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

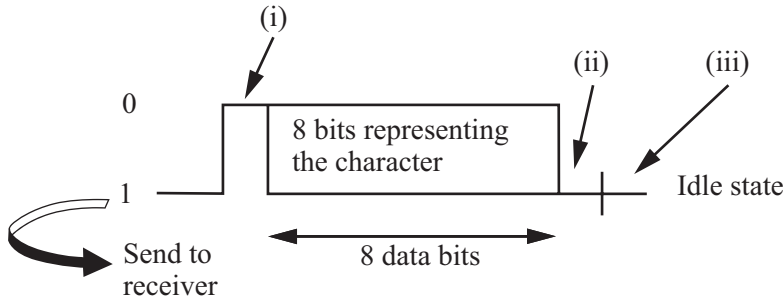
### ADVICE TO CANDIDATES

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	2		
3	4		
4	4		
5	4		
6	4		
7	10		
8	12		
9	10		
10	4		
11	6		
12	12		
13	10		
14	6		
15	4		
16	4		
<b>Total</b>	<b>100</b>		



1 Consider the diagram **Fig. 1** shown below. The diagram represents a method of serial data transmission commonly used when sending a single byte of data from a sender to a receiver. The data that is being sent is framed by a number of different bits. Name the missing bits labelled (i), (ii) and (iii) as shown on the diagram and name the type of serial transmission.



**Fig. 1**

- (a) Missing bit (i) is called \_\_\_\_\_ [1]
- (b) Missing bit (ii) is called \_\_\_\_\_ [1]
- (c) Missing bit (iii) is called \_\_\_\_\_ [1]
- (d) Type of serial transmission is \_\_\_\_\_ [1]

2 In the box below tick (✓) **two** features of a repeater.

It behaves as a firewall during data transmission	
It is used during Internet network dial up	
It can cause attenuation in networks	
It is used to connect multiple Ethernet segments	
It retimes and resends a signal that has lost part of its strength	
It is needed during half duplex data transmission	

[2]

- 3 (a) Bus based computer systems traditionally use coaxial cable to connect computers together in a network. Explain what is meant by a bus network.

A bus network is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

- (b) These bus networks have been largely replaced by star networks. Explain what is meant by a star network.

A star network is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

- 4 Describe **two** main differences between hubs and switches when connecting computer networks together.

Difference 1: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Difference 2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [4]

5 Once a network has been established, it is important to maintain the service for the users of the network. Describe **two** main maintenance functions that must be provided for network users.

Function 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Function 2: \_\_\_\_\_

\_\_\_\_\_

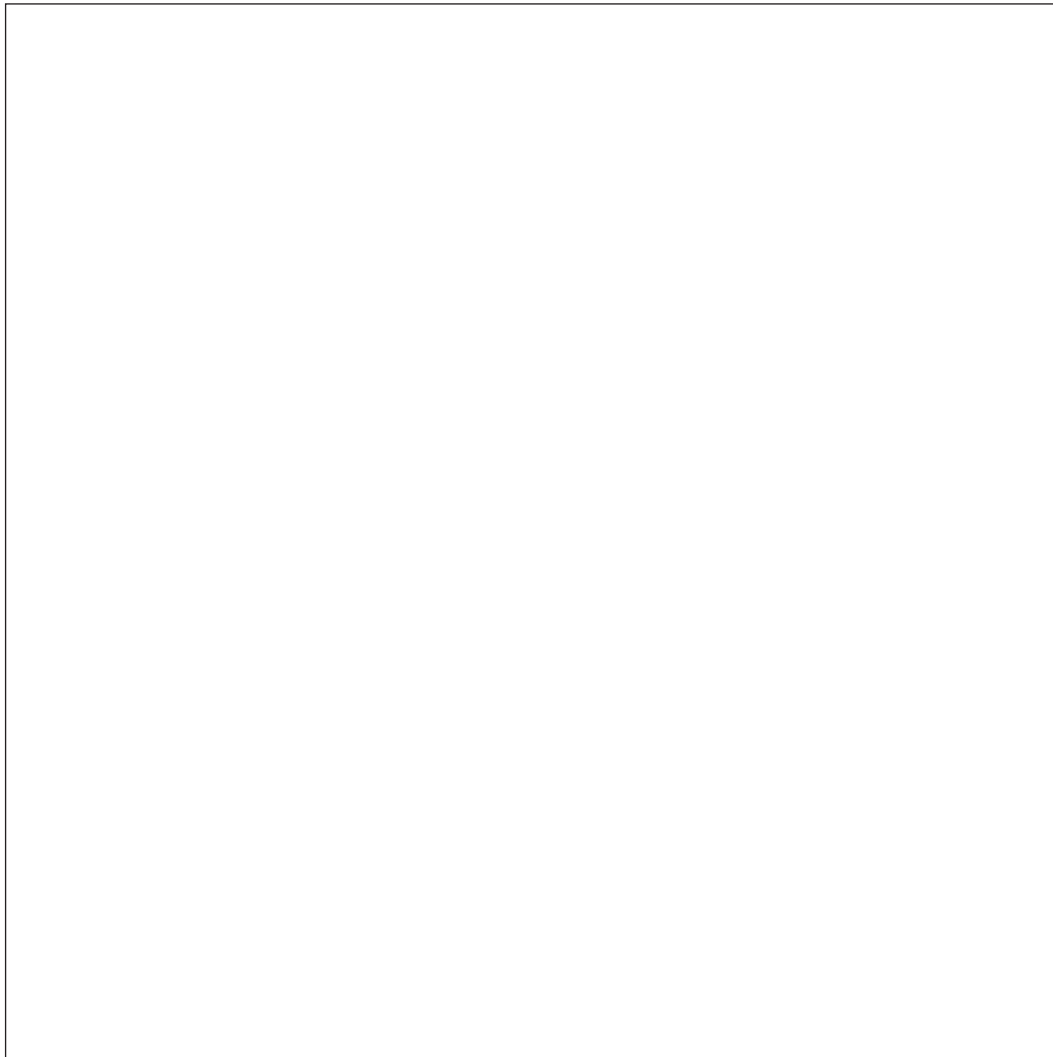
\_\_\_\_\_ [4]

6 In the box below tick (✓) **four** features of a network card.

It can be found on the motherboard of a computer	
It is used to check a user's password	
It is used to connect computers together on a peer-to-peer network	
It has a special code allocated during manufacture	
It is used to send and receive binary data in a network	
It is designed to request web pages from a server	

[4]

- 7 A publishing company wishes to set up a network of 30 computers spread over two floors of its offices. The company wishes all staff to use publishing software installed on the network to prepare their daily work. The staff should also be able to use e-mail and the Internet as well as having access to two laser printers (one of which is colour). With the aid of an appropriately labelled diagram, describe in detail how this network should be set up.



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[10]

- 8 Once a network has been set up in an organisation, one of the major issues that may impact on its use is the Acceptable Use Policy for the users. Discuss the main contents of an Acceptable Use Policy.

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[12]

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9 Employees in a manufacturing company communicate and send documents to one another by e-mail.

(a) Describe **three** main benefits of using e-mail for business purposes.

Benefit 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Benefit 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Benefit 3: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [6]

(b) Describe how a network user could protect their e-mail account from spam and virus attacks.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [4]



10 The table below contains some features that you would **not** associate with a firewall in a computer network. Put a tick (✓) beside those features you would **not** expect to find in a firewall.

It uses software to allocate user accounts in a client server network	
It stores MAC addresses of all network cards in this network	
It is also known as a router	
It has software loaded to prevent viruses	
It stores website addresses that may not be viewed by a network user	
It contains the homepage of the company owning the network	
It is a security feature that prevents unauthorised entry to a network	

[4]

11 An Internet service provider (ISP) is usually used to provide a connection to the Internet. Describe **three** features that an ISP can provide to someone wanting to access the Internet.

Feature 1: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Feature 2: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Feature 3: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

[6]



13 Each of the following statements about IP addressing is either true or false. Insert the word TRUE or FALSE in the space opposite each statement about IP addressing.

It is an address allocated to network equipment at the point of manufacture	
It is a physical address	
It is used because it is impossible to remember the address of all equipment used on the Internet	
It can be either static or dynamic (supplied)	
It is also known as a MAC address	
It identifies network equipment on the Internet	
Dynamic Host Control Protocol is used for assigning IP addresses	
It is a logical address	
Internet Service Providers can allocate blocks of IP addresses	
It allows a computer's motherboard to be recognised using a worldwide coding system	

[10]

14 Describe **three** features associated with a wireless network.

Feature 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Feature 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Feature 3: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [6]

15 Tick (✓) **four** features below that you would expect to find associated with a proxy server.

It is a computer that is used to store details of users' passwords	
It is used when your computer is accessing a web page	
It is a computer that tries to prevent 'war-driving'	
It is used as a backup computer for the main server	
It sits between a user's computer and the web server whose pages are being requested	
It speeds up file requests to a web server	
It holds an archive of previously requested web pages	
It allocates IP addresses to computer devices	

[4]

16 Describe **two** advantages and **two** disadvantages of video conferencing.

Advantage 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Advantage 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Disadvantage 1: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Disadvantage 2: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[4]

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**THIS IS THE END OF THE QUESTION PAPER**

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