



### 3.2.1 Protocols

#### Oct/NOV 2002

10. State three rules which would be part of a protocol used for sending data between two processors, explaining why each is necessary. [6]

#### Oct/NOV 2003

7. A college has a number of stand-alone machines. The decision is taken to turn them into a LAN.

(d) (i) Explain why a protocol is needed for this network.

(ii) Give a reason why such a protocol should be arranged in a layered fashion. [4]

#### May/June 2006

4. (c) (i) Explain what is meant by the term protocol. [2]

(ii) Explain why the bit rate is an important part of any protocol. [2]

#### Oct/NOV 2008

6. (b) A protocol will be required.

Explain what is meant by a protocol. [2]

#### May/June 2010. P11

4. (a) Define the term protocol. [2]

#### May/June 2010. P13

4. (a) Define the term protocol. [2]

(b) (i) Explain what features of a protocol need to be established before communication can take place. [5]

#### Oct/NOV 2011. P11

8 (c) When communications are required across a network a protocol is necessary.

(i) Explain the need for a handshake as part of a protocol, giving examples of what occurs during a handshake. [3]

(ii) Explain why a protocol consists of a number of layers. [2]

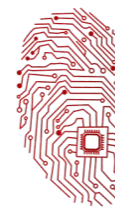
#### Oct/NOV 2012. P11

9 (b) Define the term protocol. [2]

#### Oct/Nov 2013.P12

3(b) Explain why a protocol is needed for data transmission. [2]





### 3.2.1 Protocols

Oct/Nov 2014.P12

3 Five descriptions and eight computer terms are shown below.

Draw lines to connect each description to its correct term.

description	computer term
Signal from hardware or software that causes the operating system to run the appropriate service routine	Broadband
Set of rules for data communication	Buffer
Memory to store data temporarily until it is required for use	Interrupt
A First-In-First-Out (FIFO) structure where items are added at one end and then retrieved from the other end	Parallel transmission
Form of data transmission in which bits of each character are sent simultaneously using a communications path for each bit	Parity check
	Protocol
	Queue
	Stack

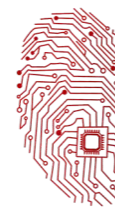
[5]

Oct/Nov 2015.P11/P13

3 Six statements and eight computing terms are shown below.

Draw a line from each statement to its correct computing term.



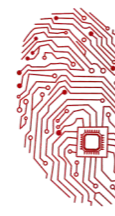


### 3.2.1 Protocols

Statement	Computing term
Data transmission in which all the bits are sent simultaneously using a communications path for each bit	Broadband
Uni-directional communication where data are sent in the form of analogue signals; this system allows multiple transmissions at the same time	Data compression
A method of checking for the successful transmission of a sequence of bits	Circuit switching
Encoding of data to take up less storage space and therefore use less bandwidth when carrying out data transmission	Baseband
Bi-directional communication where data are sent as digital signals; the communication uses a single channel which utilises the entire bandwidth of the media	Parallel
Set of rules or instructions to govern the transmission or exchange of data	Protocol
	Parity
	Packet switching

[6]





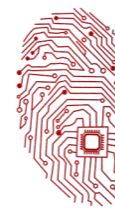
### 3.2.1 Protocols

Oct/Nov 2015.P12

Computer term	Description
batch processing	software that allows a computer to communicate with a device
formatter	software that manages hardware and software resources
hardware driver	software that searches for malware signatures that have been attached to executable programs
protocol	data are collected together and then processed in one go
operating system	software that prepares a storage device for read/write operations
virus scanner	an agreed format or set of rules decided before transmission of data between devices begins

[5]





### 3.2.1 Protocols

#### Computer Science (9608)

May/June 2015.P31/P32

6 (a) Four descriptions and three protocols are shown below. Draw a line to connect each description to the appropriate protocol.

Description	Protocol used
email client downloads an email from an email server	HTTP
email is transferred from one email server to another email server	POP3
email client sends email to email server	SMTP
browser sends a request for a web page to a web server	

[4]

(b) Downloading a file can use the client-server model. Alternatively, a file can be downloaded using the BitTorrent protocol. Name the model used.

[1]

(c) For the BitTorrent protocol, explain the function of each of the following:

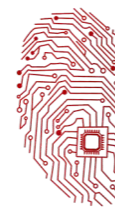
- (i) Tracker [2]
- (ii) Seed [2]
- (iii) Swarm [2]

May/June 2015.P33

2 (b) A user downloads a file using the FTP protocol. Explain the function played by each of the following:

- (i) Server [2]
- (ii) Command [2]
- (iii) Anonymous [2]

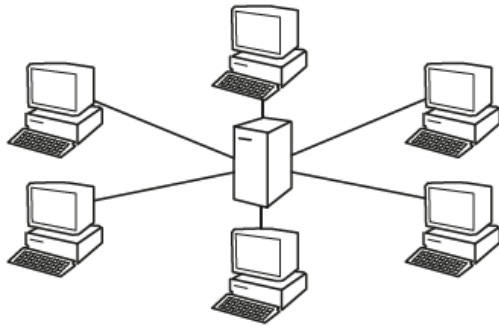




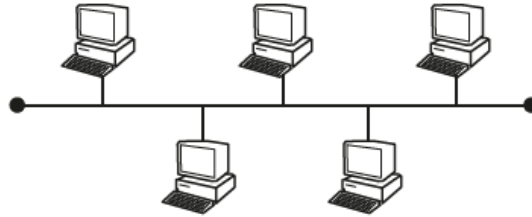
### 3.2.1 Protocols

May/June 2018.P31/P33

3 Star and bus are two types of topology that can be used in a Local Area Network (LAN).



Star topology



Bus topology

(c) (i) Protocols are essential for successful transmission of data over a network. The TCP/IP protocol suite operates on many layers.

State the appropriate layer for each protocol in the following table.

Protocol	Layer
TCP	
IP	
SMTP	

[3]

(ii) Peer-to-peer (P2P) file sharing uses the BitTorrent protocol.

Explain how the BitTorrent protocol allows files to be shared.

[3]

