

Exercises

1. All Internet communications use the TCP/IP protocol stack, which is considered to have four layers – the application, transport, network and link layers.

Describe the roles of each layer when two devices are communicating over the Internet.

In your answer you will also be assessed on your ability to use good English, and to organise your answer clearly in complete sentences, using specialist vocabulary where appropriate. [8]

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2. An ICT technician at a secondary school has access to a variety of programs that she uses to manage a group of web servers.

- (a) State **one** use for each of the protocols listed below.

(i) Telnet [1]

(ii) FTP [1]

(iii) POP3 [1]

- (b) Whilst remotely connecting to one of the servers the technician executes a command that displays the current network connections. Figure 1 shows these network connections.

Active Internet Connections					
Proto	Recv-Q	Send-Q	Local Address	Foreign Address	(state)
tcp4	0	0	192.168.3.205:80	74.125.4.148:58539	ESTABLISHED
tcp4	0	0	192.168.3.205:80	208.43.202.29:57458	ESTABLISHED
tcp4	37	0	192.168.3.205:25	208.43.202.29:57459	CLOSE_WAIT

Figure 1

From Figure 1 provide an example of the following:

(i) IP address [1]

(ii) Port [1]

(iii) Socket [1]

- (c) State two reasons why the technician uses remote management software from her computer rather than going to the actual servers. [2]

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