

Past-paper walk-through

Network hardware ■ 3.4

eXercise

Questions in this set

- 0478/12 M25 Q5 ■ 14 marks
- 0478/12 J24 Q7 ■ 4 marks
- 0478/11 J23 Q6 ■ 6 marks

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

Question 5

0478/12 M25 ■ Q5 ■ 14 marks

A computer is connected to a network.

(a)(i) One purpose of the NIC is to provide the computer with a MAC address.

Describe the other purposes of the NIC.

[2]

(a)(ii) Identify **three** characteristics of a MAC address.

1. 2. 3.

[3]

Question 5

0478/12 M25 ■ Q5 ■ 14 marks

A computer is connected to a network.

(b)(i) Tick (✓) **one** box to identify a valid IPv4 address. **[1]**

A 110:255:2:1

B 1.30.2FF.A9

C 3.162.74.3

D 8.0.257.6.8

(b)(ii) Identify the device in a network that can automatically assign an IP address to a computer, each time the computer connects to the network. **[1]**

Question 5

0478/12 M25 ■ Q5 ■ 14 marks

A computer is connected to a network.

(c)(i) Define the term world wide web.

[1]

(c)(ii) The uniform resource locator (URL) for a website includes the protocol
hypertext transfer protocol secure (HTTPS).

Explain how HTTPS makes the transmission of data secure.

[4]

(c)(iii) The protocol is one part of a URL.

Give the other **two** parts of a URL.

1. 2.

[2]

Solution 5

(a)(i)

Mark scheme

- Any two from:
 - ■ Transmit/send data to the network/devices // Receive data from the network/devices
 - ■ To allow a physical connection
 - ■ Convert network data so it can be understood by the computer
 - ■ Convert computer data to be transmitted over the network
 - ■ To be assigned an IP address

Solution 5

(a)(ii) Mark scheme

- Any three from:
 - (Represented) in hexadecimal
 - Numbers are separated by colons/hyphens
 - Six groups of digits
 - Sets of 2-digit/8-bit (hex) numbers // 48 bits // 12-digits
 - Contains manufacturer ID and unique device number
 - Static address // cannot be changed

Solution 5

(b)(i)

Mark scheme

- C

(b)(ii)

Mark scheme

- Router

Solution 5

(c)(i)

Mark scheme

- A collection of web pages

Solution 5

(c)(ii) Mark scheme

- Any four from
 - ■ Uses SSL/TLS
 - ■ Encrypts data
 - ■ ... which stops the data being understood if intercepted
 - ■ ... using asymmetric encryption
 - ■ ... data is encrypted using the web server's public key
 - ■ ... data can only be decrypted by the web server's private key
 - ■ Data transmitted to the server can only be decrypted by the server

Solution 5

- ■ Uses digital certificates

Solution 5

(c)(iii)

Mark scheme

- ▪ Domain name
- ▪ Web page name // file name

Question 7

0478/12 J24 ■ Q7 ■ 4 marks

A computer has both a media access control (MAC) address and an internet protocol (IP) address.

(a) Tick (✓) **one** box to show which of the statements is correct about the MAC address.

[1]

A It is assigned by the manufacturer.

B It is assigned by a router.

C It can be static or dynamic.

D It is made up of three different parts.

Question 7

0478/12 J24 ■ Q7 ■ 4 marks

A computer has both a media access control (MAC) address and an internet protocol (IP) address.

(b)(i) Give an example of an IP address that has an IPv4 format. [1]

(b)(ii) Give **two** characteristics of the IPv6 format.

1. 2. [2]

Solution 7

A It is assigned by the manufacturer.



B It is assigned by a router.

C It can be static or dynamic.

D It is made up of three different parts.

Answer: **A**

Question 6

0478/11 J23 ■ Q6 ■ 6 marks

6 A user wants to connect their computer to a network.

(a) (i) Identify the component in the computer that is needed to access a network.

Question 6

- (ii) Identify the type of address that is allocated to the component by the manufacturer, which is used to uniquely identify the device.

Question 6

- (b) A dynamic internet protocol (IP) address is allocated to the computer when it is connected to the network.
 - (i) Identify the device on the network that can connect multiple devices and automatically assign them an IP address.

Question 6

- (ii) Describe what is meant by a dynamic IP address.

Solution 6

(a)(i)

Mark scheme

- ■
- Network interface card/controller // NIC // WNIC
- 1

Solution 6

(a)(ii)

Mark scheme

- ■
- Media access control/MAC address // MAC
- 1

Solution 6

(b)(i)

Mark scheme

- ■

- Router

- 1

Solution 6

(b)(ii) Mark scheme

- Three from:
- ■
- It can be used to uniquely identify a device (on a network)
- ■
- It can change ...
- ■
- ... each time the device is connected to the network
- 3

Solution 6

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