

5 A computer is connected to a network.

(a) The computer has a network interface card (NIC) that has a media access control (MAC) address.

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

Describe the other purposes of the NIC.

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..... [2]

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

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2
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3
..... [3]

(b) The network allocates an internet protocol (IP) address to the computer.

(i) Tick (✓) **one** box to identify a valid IPv4 address.

- A 110:255:2:1
- B 1.30.2FF.A9
- C 3.162.74.3
- D 8.0.257.6.8

[1]

(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]

(c) A user accesses the world wide web using a web browser.

(i) Define the term world wide web.

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..... [1]

(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.

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..... [4]

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

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

1
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2
..... [2]