

Solutions

Each answer shows the steps, then the **result**.

2.1

- the **internet** is the worldwide network (infrastructure)
- the **web** is the collection of websites you view on it

2.2

- DNS stores the IP address for each web address
- it **turns a URL into an IP address**

2.3

- protocol: **https**
- domain name: **www.school.org**
- file path: **/exams/paper1.html**

2.4

- any **two** of: remember log-in / store preferences / save a basket between visits / targeted advertising

2.5

- each block stores a **hash of the previous block**
- changing one block changes its hash, so later blocks no longer match and the **tampering is visible**

3.1 B

- a cookie deleted when the browser closes is a **session cookie**
- A survives between visits; C and D are not cookies

3.2

(a)

- the browser asks a **DNS** for the site's IP address
- it contacts the web server using that IP
- the server returns the HTML, which the browser **renders**

(b)

- remembering you / your details **between visits**

3.3

(a)

- protocol: **https**
- domain name: **www.shop.co.uk**
- file path: **/cart/checkout.html**

(b)

- the browser sends the domain name to a DNS server
- the DNS returns the matching IP, passing on if it does not hold the name
- the browser requests the web server at that IP
- the web server sends back the HTML
- the browser **renders** the HTML

(c)

- a session cookie is **deleted when the browser closes**
- that suits a basket that only needs to last for one visit
- use a **persistent cookie** for log-in details or preferences that must survive between visits

(d)

- data between browser and server is **encrypted**
- payment and log-in details cannot be understood if intercepted

(e)

- the **internet** is the worldwide network of connected networks
- the **world wide web** is the collection of pages and resources accessed using it