MODULE F THE INTERNET · F2

URLs, DNS and how a web page reaches your screen: mark scheme

20 marks · OCR J277 spec 1.3.1 (the Internet: DNS, hosting, web servers and clients)

How to use. 1 mark per bullet up to the Max shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. Credit any other valid answer that shows the same understanding. HTML and the parts of a URL are not required for J277: give no credit for them, but do not penalise them if the rest is correct.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) J277 1.3.1	Domain Name Server / Domain Name Service / Domain Name System	**1**	All three words needed. Ignore capitals.
1(b) J277 1.3.1	IP address // Internet Protocol address	**1**	Accept IPv4 / IPv6 address. Do not accept MAC address or "a number" alone.
2(a) J277 1.3.1	Stores the files that make up a website: Web server A laptop using a web browser: Client Finds the IP address that matches a URL: Domain Name Server Sends web pages to the devices that request them: Web server	**4**	1 mark per correct row. More than one tick in a row: 0 for that row.
3(a) J277 1.3.1	The website's files / web pages are stored on a (web) server // on another company's server The server is connected to the internet ... so other people / clients can access / view the website (at any time)	**2**	Max 2. "Making the website available on the internet" alone = 1 mark. Do not accept "creating / designing the website" or "owning the website".
3(b) J277 1.3.1	The smartphone requests the web page / website / a service from the (web) server The smartphone receives / uses the web page / service The (web) server provides the service / web page (to the smartphone)	**2**	Max 2. Do not accept "it connects to the internet" or "it is used by a person" alone.

QUESTION	ANSWER	MARKS	GUIDANCE
4(a) J277 1.3.1	Row 1: False (1) ... rewrite: A DNS is made up of many / multiple Domain Name Servers // No single server stores the IP address of every website (1) Row 2: True (1) Row 3: False (1) ... rewrite: The web server sends the web page to the client // The DNS sends the IP address (of the web server) to the client (1) Row 4: True (1)	**6**	1 mark per correct True / False, 1 mark per correct rewrite. A rewrite can only score if False is ticked in that row. More than one tick in a row: 0 for that row's tick mark. Ignore rewrites on True rows.
5(a) J277 1.3.1	The request / URL / domain name is passed / forwarded to another / a higher-level Domain Name Server That server looks up / searches for the URL / domain name in its table / database (of domain names and IP addresses) This repeats / it is passed on again until a server finds the matching IP address If no server has the IP address, an error (message) is returned (to the browser / computer) The IP address is returned / sent to the worker's computer / web browser The browser / computer then sends a request (for the web page) to the web server at that IP address ... and the web server sends the web page back (to the computer / browser)	**4**	Max 4. Max 2 if the answer never says the request goes to another / higher-level DNS server. MP5 needs the computer / browser: do not award "sent to the worker / user" alone. Do not credit answers where the URL is sent to the web server to be converted.

Total: 20 marks