MODULE E NETWORKS · E9

Protocols: HTTP and HTTPS: mark scheme

20 marks · Cambridge 0478 syllabus 5.1.3 (purpose and operation of HTTP and HTTPS)

How to use. One mark per creditworthy point up to the maximum shown. **/** separates alternative words; **//** separates alternative answers. Words in (brackets) are not needed for the mark. Credit any other valid answer that shows the same understanding.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) 0478 5.1.3	Hypertext transfer protocol secure	**1**	All four words needed. Ignore capitals and spacing ("hyper text").
1(b) 0478 5.1.3	Any one from: (Rules) to transfer / request and send web pages // HTML / web page files (between a web server and a browser) To allow web pages to be accessed / viewed (over the internet)	**1**	Do not accept "it is a protocol" alone.
2(a) 0478 5.1.3	Any three from: The web browser / client sends a request (for the page) to the web server ... the request follows the rules of HTTP The web server finds the page / files The web server responds // sends the page / HTML / files back to the browser The data is not encrypted The browser renders / displays the page	**3**	max 3.
3(a) 0478 5.1.3	Both protocols: True HTTP data is encrypted: False HTTPS data cannot be intercepted: False Same purpose: True	**4**	One mark per correct row. A row with both boxes ticked scores 0.
4(a) 0478 5.1.3	Any four from: HTTP does not encrypt data Card details could be intercepted (in transit) ... and read / understood / used (fraudulently) HTTPS encrypts the data (between the browser and the web server) Intercepted data would be meaningless / could not be understood (without the key) HTTPS uses SSL / TLS // the server is authenticated (with a digital certificate) Customers can see the site is secure (padlock) // customers are more likely to trust the site	**4**	max 4. Do not accept "more secure" / "safer" alone. Do not accept "HTTPS stops data being intercepted" or "stops hacking".

QUESTION	ANSWER	MARKS	GUIDANCE
5(a) 0478 5.1.3	Any two from: The URL / address starts with https A padlock (symbol) in the address bar The browser shows the connection is secure // the site's digital certificate can be viewed	**2**	max 2.
5(b) 0478 5.1.3	Logging in to a bank account Paying for a hotel room Sending medical details	**3**	One mark per correct tick. If more than three boxes are ticked, deduct one mark for each extra tick (minimum 0).
6(a) 0478 5.1.3	Similarity, any one: both are protocols // both transfer / request web pages // same purpose // both used between a browser and a web server Difference, any one: HTTPS encrypts data, HTTP does not // HTTPS is secure, HTTP is not // HTTPS uses SSL / TLS // the URL starts https, not http	**2**	One mark each. Do not accept "HTTPS is better" or "HTTPS is faster".

Total: 20 marks