MODULE D DATA TRANSMISSION · D1

Packets and packet switching: mark scheme

20 marks · Cambridge 0478 syllabus 2.1.1

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. "..." means the point builds on the one before. Nothing incorrect is rewarded.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) 0478 2.1.1(b)	One mark for each: (packet) header payload trailer	**3**	Any order. Do not accept "data" alone for payload.
1(b) 0478 2.1.1(b)	Payload	**1**	More than one tick = 0.
2(a) 0478 2.1.1(b)	One mark for each: destination address // address of the receiving device packet number originator's address // address of the sending device // source address	**3**	Any order. "Address" alone = 0 (must say which address). Do not credit payload.
3(a) 0478 2.1.1(b) (c)	Any two from: packets may take different routes // packets may arrive out of order the number shows the packet's place in the order (of the original data) ... so the packets can be reordered / put back in order (once the last packet has arrived)	**2**	max 2.
3(b) 0478 2.1.1(b) (c)	Any two from: it shows where the packet is going // identifies the receiving device a router reads the destination address ... so the router can control the route the packet takes // decide where to send it next so the packet reaches the correct device / the contractor's computer	**2**	max 2.

QUESTION	ANSWER	MARKS	GUIDANCE
4(a) 0478 2.1.1(a)(c)	Any six from: the file / data is broken down into packets each packet has a header containing the destination address // packet number each packet could take a different route a router controls the route a packet takes ... ... using the destination address packets may arrive out of order once the last packet has arrived, the packets are reordered ... ... using the packet numbers	**6**	max 6. Do not credit server for router. Do not credit "the packets are reordered as they arrive".
5(a) 0478 2.1.1(c)	Same route: False Router controls the route: True Reordered when first arrives: False	**3**	1 mark per correct row. More than one tick in a row = 0 for that row. Row 1: each packet could take a different route. Row 3: packets are reordered once the last packet has arrived.

Total: 20 marks