MODULE E NETWORKS · E3

Client-server vs peer-to-peer networks: mark scheme

20 marks · OCR J277 spec 1.3.1: the different roles of computers in a client-server and a peer-to-peer network; servers providing services (web server, file server); clients requesting / using services

How to use. 1 mark per bullet up to the maximum shown. **/** 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) J277 1.3.1	Equal status: Peer-to-peer Accounts and security managed centrally: Client-server Both a client and a server: Peer-to-peer Central computer fails, others lose access: Client-server	**4**	1 mark per correct row. 2 ticks in a row = 0 for that row.
2(a) J277 1.3.1	Web server: stores / provides / sends web pages (to clients) File server: stores files / lets clients save and retrieve / access files	**2**	1 mark per server. Do not accept "provides the internet" for the web server. Do not accept "stores data" alone for the file server: must refer to files or file storage / retrieval.
2(b) J277 1.3.1	Requests services / resources / files / web pages (from a server) Uses / receives / displays the services / resources the server sends back Users log in (to the network) from a client	**2**	Max 2. Do not accept "connects to the server" alone. Do not credit an answer that says the client provides services to other computers (that is the server's role).
3(a) J277 1.3.1	There is no (central) server All computers / peers have equal status Each computer acts as both a client and a server / can both request and provide services Computers share files / resources directly with each other Each computer stores its own files / files are spread across the computers	**3**	1 mark per bullet, max 3. MP1 must say there is no server: do not accept "does not need to connect to the server" (this suggests a server exists). Do not accept "computers are connected together" alone.
4(a) J277 1.3.1	Cheaper / less initial cost / no need to buy a (costly) server Easier to set up / does not need a specialist (to set it up) Only a few computers / small network, so central management is not needed No server that could fail and stop everyone working	**1**	Any 1. Do not accept "faster" alone or "more secure".

QUESTION	ANSWER	MARKS	GUIDANCE
4(b) J277 1.3.1	The file may be stored on the computer that was switched off (1) ... so it cannot be accessed until that computer is switched on again / there is no server or central copy holding it (1)	**2**	The second mark depends on the first. Do not accept "the whole network goes down" / "all the computers stop": only the files on that computer are unavailable.
5(a) J277 1.3.1	Central backups (1) ... all the firm's files are backed up in one place, so they are less likely to be lost (1) Central security (1) ... e.g. anti-malware / access rights set from the server for all 60 staff, so confidential client accounts are better protected (1) User accounts / logins managed centrally (1) ... staff can be given different access levels / a new member of staff is set up in one place (1) Updates managed centrally (1) ... software on all 60 computers can be updated from the server, saving time (1) Files stored on the server (1) ... staff can access their files from any computer on the network / files are still available when one staff computer is switched off (1) Staff computers are not slowed down by sharing files with others (1) ... the server handles the requests (1)	**4**	Mark in pairs: 1 for the advantage, 1 for the explanation. The second mark depends on the first. Do not award the same advantage twice. Do not accept "more secure" or "faster" alone without saying how or why.
5(b) J277 1.3.1	Servers are costly / high initial cost (1) ... the firm must buy a server (and its software) (1) Needs a specialist / network manager (1) ... to set up / maintain the network, which the firm must pay for (1) Depends on the server (1) ... if the server fails, staff lose access to files / services and cannot work (1) Server can be overloaded (1) ... if many of the 60 staff request files at once, access may slow down (1)	**2**	1 for the disadvantage, 1 for the explanation. Do not accept "less secure" or "expensive" alone without saying what costs money.

Total: 20 marks