MODULE B MEMORY AND STORAGE · B5

Choosing storage: mark scheme

~25 minutes · 21 marks · J277 spec 1.2.2

How to use. 1 mark per bullet up to the maximum shown. **/** separates alternative words; **//** separates alternative statements for the same mark. 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 1.2.2	Row 1: speed Row 2: portability Row 3: capacity Row 4: reliability	**4**	1 mark per row. 2+ ticks in a row = 0 for that row.
1(b) J277 1.2.2	How well the device survives (physical) damage / knocks / drops / heat // how robust/tough it is // how long it lasts when used/handled	**1**	Do not accept "how reliable it is" (that is reliability). "Strong" alone is NE.
2(a) J277 1.2.2	Solid state (e.g. SSD) Justification, max 3: No moving parts… …so more durable / not damaged if the backpack/laptop is knocked or dropped while travelling Small / light / thin… …so easy to carry between theatres / fits in a laptop // portable Fast(er) read/write speed (than magnetic/optical)… …so large lighting plans open quickly in rehearsals Low power use, so the laptop battery lasts longer away from a socket	**4**	1 mark for solid state, then max 3 for justification. Magnetic or optical chosen = 0 for the whole part. Accept SSD / flash. "Faster" with nothing saying what is faster at, or faster than what, is NE. Justification must be linked to the technician/laptop for full marks; generic points max 2.
3(a) J277 1.2.2	Magnetic (e.g. hard disk drive / magnetic tape) Justification, max 3: High capacity… …so it can hold many terabytes of scans Low(er) cost per gigabyte (than solid state)… …so it suits the small budget The server is never moved, so low durability/portability (moving parts) does not matter Reliable for long-term storage // read/write speed is good enough for opening scans	**4**	1 mark for magnetic, then max 3. Accept HDD / hard disk. Solid state chosen: 0 for choice, but allow max 2 for valid linked justification (e.g. high capacity, fast access) — do not accept "cheaper" for solid state. Optical chosen = 0 for the whole part. "Cheap" alone is NE: need cost per gigabyte or link to the budget.

QUESTION	ANSWER	MARKS	GUIDANCE
4(a) J277 1.2.2	One advantage, explained: Low cost per disc / per gigabyte… …so the band can make many copies cheaply to sell Light / thin / small… …so cheap and easy to post / carry to concerts Enough capacity for one album… …so each disc holds the whole album Read-only discs cannot be accidentally changed/deleted… …so the album stays as recorded	**2**	Mark in pairs: 1 for the advantage, 1 for its link to the band. Mark the first advantage only.
4(b) J277 1.2.2	One disadvantage, explained: Low durability / scratches easily… …so discs may be damaged in the post / at concerts and fail to play Needs an optical drive (to read it)… …which some buyers' computers/devices may not have Slow(er) read speed (than solid state)… …so copying the album onto a device takes longer Low capacity (compared with magnetic/solid state)… …so extra content (e.g. videos) may not fit on one disc	**2**	Mark in pairs. Mark the first disadvantage only. Do not accept "it breaks" alone (NE).
5(a) J277 1.2.2	Row 1: False Row 2: True Row 3: True Row 4: False	**4**	1 mark per row. 2 ticks in a row = 0 for that row. Row 1: solid state has a limited number of write cycles; it does not last forever.

Total: 21 marks