

1.2 SOFTWARE & SOFTWARE DEVELOPMENT · 1.2.2

Applications, utilities & open vs closed source — Mark scheme

34 marks · spec 1.2.2(a)(b)(c)

AO key: AO1 = knowledge & understanding · AO2 = application · AO3 = reasoned judgements. Accept any valid alternative; do not award the same point twice.

Q	ANSWER	AO	MARKS
1(a)	Systems software runs/manages the computer and its hardware (OS, utilities, translators) (1); applications software is run by the user to perform a real-world task (1). (2)	AO1	2
1(b)	An application does a task for the user; a utility maintains/optimises the computer. (1)	AO1	1
1(c)	Systems software. (1)	AO1	1

Q	ANSWER	AO	MARKS
2(a)	System software (1) that maintains/optimises the computer or performs housekeeping tasks (rather than a user task) (1). (2)	AO1	2
2(b)	1 mark per example + 1 for its purpose, max 4 (two utilities), e.g.: • disk defragmenter (1) — reorganises files on a disk so reads are faster (1) • backup utility (1) — copies files so they can be restored if lost (1) Allow compression, antivirus, file management, automatic update.	AO1	4

Q	ANSWER	AO	MARKS
3(a)	1 mark each: (i) word processor / DTP (1); (ii) spreadsheet (1); (iii) database (DBMS) (1). (3)	AO2	3
3(b)	It is written to fit the organisation's exact needs (1); so it does precisely what is required / can be changed as needs change (1). (2)	AO2	2
3(c)	Any one: more expensive / takes time to develop / may be less well-tested. (1)	AO1	1

Q	ANSWER	AO	MARKS
4(a)	Software released with its source code available (1) so users can view, modify and redistribute it (1). (2)	AO1	2
4(b)	Any one: Linux / Firefox / LibreOffice / GIMP / Python, etc. (1)	AO1	1
4(c)	Software whose source code is kept hidden / not shared, and is licensed to users. (1)	AO1	1

Q	ANSWER	AO	MARKS
5(a)	A valid benefit + development, max 2, e.g. it can be modified (1) to suit the user's exact needs (1); or free / community support / no vendor lock-in. (2)	AO2	2
5(b)	1 mark per point, max 3: - the source code cannot be viewed or modified (1) - so the user cannot adapt it / depends on the vendor for changes (1) - and usually has to pay licence fees (1)	AO2	3

Q	LEVELS-OF-RESPONSE MARK SCHEME	AO	MARKS										
6	Mark using the levels descriptors below. AO1 (knowledge of open/closed source), AO2 (application to the company), AO3 (justified recommendation). <table><tr><th>LEVEL</th><th>DESCRIPTOR</th></tr><tr><td>Level 3 (7–9)</td><td>Balanced discussion of advantages and disadvantages of both open and closed source, clearly applied to the company (cost, support, adaptability, security, vendor lock-in), leading to a justified recommendation. Well structured.</td></tr><tr><td>Level 2 (4–6)</td><td>Discusses both with some application to the context; a recommendation is made with partial justification.</td></tr><tr><td>Level 1 (1–3)</td><td>Basic points about open and/or closed source with little application or justification.</td></tr><tr><td>0</td><td>Nothing creditworthy.</td></tr></table> Indicative content (credit any valid point): • Open source: free (no licence fees), can be adapted, community support and updates, no vendor lock-in; but support is not guaranteed and may need in-house expertise. • Closed source: professional support, polished and well-tested, training and documentation; but licence costs, cannot modify, dependent on the vendor. • Application: a company values reliability and support (favours closed) but also cost savings and flexibility (favours open); staff skill level matters. • Justified conclusion either way, e.g. open source where in-house expertise exists and cost matters; closed source where guaranteed support is essential.	LEVEL	DESCRIPTOR	Level 3 (7–9)	Balanced discussion of advantages and disadvantages of both open and closed source, clearly applied to the company (cost, support, adaptability, security, vendor lock-in), leading to a justified recommendation. Well structured.	Level 2 (4–6)	Discusses both with some application to the context; a recommendation is made with partial justification.	Level 1 (1–3)	Basic points about open and/or closed source with little application or justification.	0	Nothing creditworthy.	AO1 ×3 AO2 ×3 AO3 ×3	9
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Total for paper: 34 marks