OCR GCSE (J277)

Module R: Exam technique

Workbooklet mark scheme · 3 parts · 62 marks

R2 and R6 are IGCSE (Cambridge) only and not on J277.

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	Total	**62**

MODULE R EXAM TECHNIQUE · R1

How OCR J277 Paper 1 and Paper 2 are structured: mark scheme

22 marks · OCR J277 specification sections 2a, 3a, 3b, 3i, 3j, 3n

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. This part is about the assessment, not a content point, so the references are to sections of the OCR J277 specification v3.1 (as at November 2026): 2a specification overview, 3a forms of assessment, 3b assessment of Practical Programming skills (Component 2), 3i assessment availability, 3j retaking the qualification, 3n calculating the qualification result. Topic rows in Q3 also give the content point.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) J277 2a, 3a, 3j	Calculator allowed in Paper 2: False Every question must be answered: True Retake only the lower-scoring paper: False	**3**	1 mark per correct row. 2+ ticks in a row = 0 for that row. Row 1: both papers are non-calculator (2a, 3a). Row 2: all questions are mandatory on both papers (2a, 3a). Row 3: a retake must include all examined components, i.e. both papers (3j).
2(a) J277 2a, 3a, 3b	Paper 1 is worth: 80 (marks) Extended response question: 8(-mark) Section A: 50 (marks) Section B: 30 (marks) Program code in the papers: OCR Exam Reference Language	**5**	1 mark per correct gap, in this order. Correct answer only. Section A and Section B the wrong way round = 0 for both of those gaps. Allow "ERL" / "Exam Reference Language" for the last gap. Do not accept "a high-level language" / "pseudocode" for the last gap: all code given in the papers is in OCR Exam Reference Language (3b). 15 and 75 are distractors (they are not J277 figures).
3(a) J277 2a; 1.2.4, 2.4.1, 2.5.1, 1.4.2	Binary to hexadecimal: Paper 1 (1.2.4 Data storage) Logic diagram with AND, OR, NOT: Paper 2 (2.4.1 Boolean logic) Compiler vs interpreter: Paper 2 (2.5.1 Languages) Firewall protecting a network: Paper 1 (1.4.2 Identifying and preventing vulnerabilities)	**4**	1 mark per correct row. 2+ ticks in a row = 0 for that row. Paper 1 covers topics 1.1 to 1.6; Paper 2 covers topics 2.1 to 2.5 (2a). Synoptic questions may draw on other topics too (3m), but each of these tasks is taught in the topic shown.
4(a) J277 2a, 3b	Response P (high-level language, one missing bracket): Can be awarded marks Response Q (numbered steps in plain English): Cannot be awarded marks Response R (flowchart): Cannot be awarded marks	**3**	1 mark per correct row. 2+ ticks in a row = 0 for that row. In Section B, questions that ask students to write or refine algorithms must be answered in OCR Exam Reference Language or a high-level programming language (2a); pseudocode, natural English or bullet points are not awarded marks (3b). Minor syntax errors such as one missing bracket are not penalised (3b), so P can gain marks.

QUESTION	ANSWER	MARKS	GUIDANCE
4(b) J277 3b	Section A assesses the ability to structure answers logically / the logic of the answer // Section A does not focus on syntactic precision / exact syntax In Section A students can choose how to present the answer // answers can be given in natural English / bullet points / pseudocode / flowcharts (as well as ERL or a high-level language)	**2**	1 mark per bullet, max 2. Do not accept "Section A is easier" / "Section A is worth more marks" (NE, not a reason). Do not accept "Section A has no programming questions": Section A can ask for algorithms.
5(a) J277 2a, 3n	Working: (58 + 54 =) 112 out of / ÷ 160 // 112 / (80 + 80) // (112 / 160) × 100 Answer: 70 (%)	**2**	1 mark for working, 1 mark for the answer. Correct answer with no working = 2 marks. Working mark needs the total 112 (or 58 + 54) over 160 (or 80 + 80). Allow averaging the two papers' percentages: (72.5 + 67.5) ÷ 2 = 70 is a valid method for both marks (it works because the two papers are worth the same, 80 marks each). 112 alone with no percentage = 1 mark (working).
6(a) J277 2a, 3a, 3b	Section A (50 marks / most of the paper) tests knowledge and understanding of concepts (not only writing code) Paper 2 covers topics such as Boolean logic / searching and sorting algorithms / producing robust programs / programming languages and IDEs (e.g. compilers and interpreters), which need to be learned / revised as theory Only Section B (30 marks) focuses on programming / Practical Programming skills ... ... and Section B also asks students to design, test and refine programs (not only write them) Some answers need trace tables / test plans / suitable test data / flowcharts / truth tables rather than code Students must be able to read and follow code given in OCR Exam Reference Language	**3**	1 mark per bullet, max 3. Each point must say *why* code-writing alone is not enough. "You need theory too" alone = 0 (NE). A topic named from Paper 1 (e.g. networks, CPU) as a reason = 0 for that point.

Total: 22 marks

MODULE R EXAM TECHNIQUE · R3

Command words and what they are asking for: mark scheme

20 marks · OCR J277 spec section 3d (command words), with content from 1.1.1, 1.2.2, 1.2.3, 1.2.5, 1.3.1, 1.3.2, 2.1.3

How to use. 1 mark per bullet up to the maximum shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. **...** means the bullet depends on the one before it. NE = not enough. BOD = benefit of the doubt. Credit any other valid answer that does what the command word asks. Do not credit vague answers such as "faster" or "better" on their own.

QUESTION	ANSWER	MARKS	GUIDANCE
1 J277 3d	1 mark per row: State: B Describe: D Explain: A Refine: E	**4**	C (Outline) is not used. A row with more than one letter scores 0.
2 J277 3d; 2.1.3, 1.3.1, 1.2.2, 1.1.1	1 mark per row: Describe ... linear search: detailed account of what happens Identify ... topology: short answer Explain why ... solid state: account that gives reasons State the purpose ... PC: short answer	**4**	Two or more ticks in a row = 0 for that row. (For the teacher: the answers would be: checks each item in turn from the start until found or the end is reached // star // e.g. small and durable with no moving parts, so suits a device that is carried and dropped // holds the address of the next instruction.)
3(a) J277 1.2.5; 3d Describe	1 mark each to max 2: (Some) data is removed / deleted (from the file) ... permanently // the original (file) cannot be restored / rebuilt The file size is reduced / made smaller The quality (of the image) may be reduced / lowered	**2**	This is a Describe question: reasons (e.g. "so it loads more quickly") are not needed and gain no marks. Do not accept "data is lost" and "data is removed" as two separate points. Do not accept "no data is lost" (that is lossless).
3(b) J277 1.2.5; 3d Explain	1 mark for a point, 1 mark for the linked reason, max 2: The photos (files) are (much) smaller (than with lossless) ... so they download / load in less time for visitors // so pages load more quickly ... so less bandwidth / data is used when the pages are viewed ... so less storage space is needed on the web server The loss of quality is (usually) not noticeable (on a screen) // the quality is still good enough to show the item	**2**	Max 1 if no reason / consequence is linked to a point. "Faster" alone = NE: must say what is faster (e.g. the page loads in less time). "Saves space" alone = NE.
4(a) J277 3d Compare; 1.3.2	1 mark from: It only refers to / only talks about wireless (connections) It does not refer to / mention wired connections // it does not give any similarities or differences between the two	**1**	Do not accept "it is too short" or "it is wrong": the points about wireless are correct.

QUESTION	ANSWER	MARKS	GUIDANCE
4(b) J277 1.3.2	1 mark per comparison, max 2: Wired connections are usually more reliable / have less interference than wireless Wired connections usually have a higher bandwidth / transfer data at a higher speed than wireless Wireless signals can be intercepted from further away (e.g. outside the building), wired needs physical access to the cable // wired is (usually) more secure than wireless Wired costs more / takes longer to install because cables must be laid, wireless needs no cables Wireless signal / performance can be reduced by distance or walls, wired is not affected in the same way Wired devices must stay where the cable is, wireless devices can move // more devices can be added easily with wireless than wired Both connect the computers to the (office) network / allow data to be shared (a similarity)	**2**	Each point must refer to both wired and wireless (both named, or a clear comparative such as "wired is more reliable than wireless"). A point about one type only = 0. "Wired is faster" = BOD as a comparison of data speed. Do not credit a repeat of the given answer (moving laptops, quick to set up) unless it is now compared with wired (e.g. "wired devices are fixed to one place"). Mark the first two points only.
5(a) J277 1.2.2; 3d Identify	1 mark from: Solid state (e.g. external SSD / USB flash drive) Magnetic (e.g. external / portable hard disk drive)	**1**	Accept a named device of either type. Do not accept optical (a disc cannot hold 2 TB). Do not accept cloud storage (not a type of secondary storage device). If optical is given, 5(b) scores 0.
5(b) J277 1.2.2; 3d Justify	1 mark each to max 2, matching the choice in (a): **Solid state:** durable / robust / no moving parts (so it is unlikely to be damaged when carried in a bag) Small / light / portable (so easy to take home each week) High enough capacity to hold 2 TB Fast (read/write) speed (so the 2 TB backup takes less time) **Magnetic:** high capacity (so it can hold 2 TB and later backups) Low cost per GB / cheap for a large capacity Portable (external drive) (so it can be taken home) Reliable / long life for storing backups	**2**	Justification must match the choice. For magnetic, do not accept "durable" / "no moving parts". For solid state, do not accept "cheapest per GB". "Large capacity" must relate to the 2 TB (or "high capacity"); "big" alone = NE. "Fast" alone = NE. Words in brackets show the link to the scenario; they are good practice for Justify but are not needed for the mark.
6 J277 1.2.3; 3d Calculate	1 mark for working, 1 mark for the answer: Working: 8,000 × 10 × 16 (= 1,280,000 bits) // ÷ 8 (= 160,000 bytes) // ÷ 1,000 Answer: 160 (KB)	**2**	Accept 156.25 KB (division by 1,024). Correct answer with no working seen = 1 mark only (Calculate and "Show your working" ask for the stages). Award the working mark for 8,000 × 10 × 16 or 1,280,000 or 160,000 seen, even if the final answer is wrong.

Total: 20 marks

MODULE R EXAM TECHNIQUE · R4

Answering 8-mark extended response questions: mark scheme

20 marks · OCR J277 spec 3a (J277/01 has one 8-mark extended response question), 3d (command words), 3k (assessment of extended response), 1.6.1 (ethical, legal, cultural, environmental and privacy issues; legislation)

How to use. One mark per bullet up to the maximum shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. "..." means the point depends on the one before it. **NE** = not enough on its own. Question 5* is marked with mark bands (levels of response), shown below the table. Laws are as at November 2026.

QUESTION	ANSWER	MARKS	GUIDANCE
1 J277 3a, 3k	Whole answer placed in a mark band, not one mark per point: True Only drawbacks can reach the top band: False General points with no link to the scenario are enough for the top band: False	**3**	1 mark per correct row. A row with both boxes ticked scores 0.
2 J277 3d (Discuss)	A range of arguments / factors / points // more than one issue A balanced review // both sides / for and against // benefits and drawbacks A clear conclusion / opinion / judgement / recommendation (Conclusion / points) supported by evidence / reasons // linked to the scenario / context	**2**	1 mark each to max 2. Credit any other valid feature that matches the OCR meaning of Discuss. Mark the first two answers only. "Explain it" / "write a lot" / "detail" alone = NE. Do not credit "only the advantages" or "a list of points".
3 J277 1.6.1, 3k	**Why:** some customers have no bank card / bank account / smartphone // cannot use the app // some customers only use / prefer cash (e.g. to budget) // some older customers / people on low incomes may not have a card or phone **Why:** if the card reader / app / internet connection fails (or a phone battery is flat), customers cannot pay (and cash is not available as a back-up) **Impact on customers:** they are shut out / excluded // cannot buy from the café // must go elsewhere // are treated unfairly (compared with other customers) **Impact on the chain:** loses those customers / sales / income // damaged reputation / bad publicity // complaints Identifies this as an ethical issue // the digital divide	**3**	1 mark per bullet to max 3. For 3 marks the answer must include at least one **why** and at least one **impact**; otherwise max 2. Repeating the given point ("they cannot pay") = 0. Credit any other valid reason or impact in context.
4 J277 1.6.1	Record of every drink, when and where: privacy Tell customers, use only for that purpose, keep secure, or be fined: legal No card and no smartphone, cannot buy anything: ethical Paper receipts stop, receipts in the app: environmental	**4**	1 mark per correct row. Row 3: also accept cultural (digital divide). Row 2: accept "Data Protection Act" for legal. Each row needs one word; two words in a row = 0 for that row.

QUESTION	ANSWER	MARKS	GUIDANCE
5* J277 1.6.1, 3k	Mark using the mark bands and indicative content below.	**8**	Read the whole answer, decide the band, then the mark within it. Bullet points or a table are acceptable if each point is expanded. Whether UK shops must accept cash is not on the J277 specification: ignore such points (no credit, no penalty).

Question 5*: mark bands

MARK BAND	DESCRIPTOR
Mark Band 3 High 6 to 8 marks	Thorough, accurate knowledge of a wide range of considerations. Knowledge is applied directly and consistently to the café chain, its customers and the app. Both sides are weighed up (benefits and drawbacks). A well-developed line of reasoning that is clear and logically structured, with points expanded, reaching a conclusion supported by the points made. **Top of band (8):** at least one ethical, one privacy and one legal issue, with impacts on both customers and the chain.
Mark Band 2 Mid 3 to 5 marks	Reasonable knowledge, generally accurate but at times underdeveloped. Applied to the scenario, though some chances are missed. A line of reasoning with some structure; some points expanded. May cover only benefits or only drawbacks; **top of band (5)** needs at least one of each. May refer to only customers or only the chain. Any conclusion is weak or not fully supported.
Mark Band 1 Low 1 to 2 marks	Basic knowledge, with limited understanding; some inaccuracy. Mostly general points with little link to the café chain. Points are listed rather than discussed; information is basic and unstructured.
0 marks	Nothing worthy of credit.

Question 5*: indicative content (not a checklist; credit any other valid point)

BENEFITS	DRAWBACKS
Café chain • No cash to count, bank or transport: saves staff time and money • Less risk of cash being stolen or of mistakes in the till; staff safer from robbery • Card / app payments can be quicker, so shorter queues and more customers served • Purchase data shows what sells, where and when: better stock planning, less food waste • Personalised offers can bring customers back more often and increase sales **Customers** • Quick, easy payment; no need to carry cash or wait for change • Offers and rewards matched to what they actually buy • Receipts kept in the app; can see what they have spent	**Ethical** • Excludes people with no bank card or smartphone (e.g. some older people, people on low incomes): digital divide, unfair • Customers may feel pressured to download the app and hand over data to get a fair deal • Personalised offers may encourage people to spend more than they intended • If the payment system or app fails, no one can pay: lost sales, angry customers • Lost customers and reputation could outweigh the savings **Privacy** • The app builds a detailed record of each customer's habits: what, when and at which café • This could reveal daily routine and where a person is at certain times • Data could be shared with or sold to other organisations; customers may not read the terms • Stored data could be leaked or stolen in a data breach **Legal** • Data Protection Act 2018: data must be used fairly, lawfully and transparently, only for the stated purpose, kept secure, accurate and no longer than needed • Customers have rights, e.g. to see their data, have it corrected or erased, and to object to marketing • A breach could lead to a fine and loss of trust • Hacking into the app's data is an offence under the Computer Misuse Act 1990, but the chain must still protect the data
Conclusion (examples): any conclusion is credited if it follows from the points made. A supported middle position is fine, e.g. go cashless only if customers can still pay by card without the app; make data collection and offers opt-in; tell customers clearly what is recorded and why; keep data secure and delete it after a set time; keep cash in some cafés for a trial period.	

Total: 20 marks