

Mock Papers 1 to 7 Revision Overview

OCR J277/01 Complete November preparation journey

The sequence of revision

The seven mock papers you will complete in class in the run-up to the November mock build progressively from individual topics to cumulative application. Papers 1–3 establish the core knowledge, Paper 4 combines and revisits these areas, and Papers 5–7 cover the remaining OCR J277/01 content.

Paper	Main content	What pupils should practise
1	Systems architecture and systems software	Precise component/register roles, fetch-decode-execute, OS functions and utilities.
2	Memory, storage and data representation	Comparisons, conversions, calculations and effects on quality/file size.
3	Networks, connections and protocols	Selecting and justifying models, hardware, media and protocols.
4	Cumulative review of Papers 1 to 3	Switching between topics, showing working and applying knowledge to unfamiliar scenarios.
5	CPU performance and embedded systems	Developed performance explanations and recognition of embedded control.
6	Network security	How attacks work, attacker purpose and layered prevention.
7	Impacts, legislation and licensing	Balanced discussion, law application and justified licence recommendations.

How to use the seven papers

- Complete one section without notes, then mark it using the combined answer book.
- Record the exact topic and command word behind every lost mark, not just the question number.
- Relearn that topic, correct the answer and repeat it from memory two or three days later.
- Finish with mixed questions from Paper 4 and the Computing Star questions so knowledge transfers between contexts.

Papers 1 to 4 Topic Guide

OCR J277/01 Core knowledge and cumulative practice

Paper 1 Systems Architecture and Systems Software

Revise CPU components and registers, Von Neumann architecture, fetch-decode-execute, operating-system functions, interfaces, drivers, buffers, utility software, fragmentation and defragmentation.

CPU and registers

Component roles and stored-program architecture.

<https://www.csnewbs.com/gcse-ocr-1-1a-cpu>

Fetch execute cycle

Registers, cycle sequence, opcodes and operands.

<https://www.csnewbs.com/gcse-ocr-1-1b-fetchexecute>

Systems software

Operating systems and utility programs.

<https://www.csnewbs.com/ocr2020-5-1-operatingsystems>

Paper 2 Memory Storage and Data Representation

Revise RAM, ROM, virtual memory, storage technologies, units, binary and hexadecimal, arithmetic and shifts, text, images, sound and compression.

Primary storage

RAM, ROM, cache and virtual memory.

<https://www.csnewbs.com/ocr2020-2-1-primarystorage>

Secondary storage

Magnetic, optical and solid-state storage.

<https://www.csnewbs.com/ocr2020-2-2-secondarystorage>

Data representation

Use the OCR topic list for units, number systems, text, image, sound and compression pages.

<https://www.csnewbs.com/ocr-gcse>

Paper 3 Networks Connections and Protocols

Revise LAN/WAN, client-server and peer-to-peer, packets, topologies, performance, hardware, internet services, wired/wireless connections, encryption, protocols, addresses, standards and layers.

Network types

LAN/WAN, models, packets, topologies and performance.

<https://www.csnewbs.com/ocr2020-3-1a-networkperformance>

Hardware and internet

Routers, switches, WAPs, NICs, DNS, hosting and cloud.

<https://www.csnewbs.com/ocr2020-3-1b-hardwareandinternet>

Protocols and layers

TCP/IP, web/email/file protocols, addresses and layering.

<https://www.csnewbs.com/ocr2020-3-2b-protocolslayers>

Papers 4 to 7 Topic Guide

OCR J277/01 Cumulative review and remaining Component 01 content

Paper 4 Cumulative Review

Revisit Papers 1 to 3 together. Prioritise calculations, conversions, scenario recommendations, mixed networking questions and extended Computing Star responses.

Paper 5 CPU Performance and Embedded Systems

Revise clock speed, cache and cores; compare specifications in context; define, describe and recognise embedded systems; apply input-process-output control.

CPU performance

Clock speed, cache, cores and limitations.

<https://www.csnewbs.com/gcse-ocr-1-2-cpuperformance>

Embedded systems

Purpose, characteristics and examples.

<https://www.csnewbs.com/gcse-ocr-1-3-embeddedsystems>

Paper 6 Network Security

Revise malware, social engineering, phishing, brute force, denial of service, interception, theft and SQL injection, plus penetration testing, anti-malware, firewalls, access levels, passwords, encryption and physical security.

Security threats

How each threat works and what the attacker wants.

<https://www.csnewbs.com/ocr2020-4-1-securitythreats>

Preventing vulnerabilities

Match layered controls to specific risks.

<https://www.csnewbs.com/ocr2020-4-2-vulnerabilities>

Paper 7 Impacts Legislation and Software Licensing

Revise ethical, legal, cultural, environmental and privacy impacts; stakeholders; balanced discussion; Data Protection, Computer Misuse and copyright law; open-source and proprietary licences.

Impacts of technology

Stakeholders, positive and negative consequences.

<https://www.csnewbs.com/ocr2020-6-1a-impactsoftechnology>

Legislation and licences

UK laws and software licence comparisons.

<https://www.csnewbs.com/ocr2020-6-1b-legislation>

Revision Method and Resources

OCR J277/01 Turn knowledge into exam marks

A reliable 30 minute revision session

Time	Activity
5 minutes	Recall key terms, diagrams or processes from memory before opening notes.
8 minutes	Check one focused source and correct gaps in a different colour.
12 minutes	Answer two to four recap questions, including at least one explain or calculate question.
5 minutes	Mark, record the gap and schedule a redemption attempt two or three days later.

General revision tips

- Use active recall: cover the page, write what you remember, then check. Rereading alone gives a false sense of confidence.
- Learn precise pairs and sequences: PC/MAR versus MDR/ACC, plaintext/ciphertext, LAN/WAN, TCP/IP and fetch-decode-execute.
- For calculations, write the formula, substitute values, convert units and include the final unit.
- For explain questions, use a chain: technical point → what happens inside the system → effect on the user or organisation.
- For discuss/evaluate questions, identify stakeholders, develop benefits and drawbacks, compare their importance and finish with a scenario-linked judgement.
- Interleave topics once secure: mix one architecture, one storage, one network and one impact question rather than completing only one topic repeatedly.

Recommended websites

Cambridge OCR	Specification, assessment materials, past papers and mark schemes. https://www.ocr.org.uk/qualifications/gcse/computer-science-j277-from-2020/assessment/
CSNewbs	OCR J277 topic explanations, examples and practice questions. https://www.csnewbs.com/ocr-gcse
Isaac Computer Science	Free GCSE textbook-style explanations and practice. https://isaaccyberscience.org/
Seneca Learning	Short retrieval practice and OCR revision notes. https://senecalearning.com/en-GB/revision-notes/gcse/computer-science/ocr
MrBrownCS paper walkthrough	Full OCR J277 Paper 1 specimen walkthrough with model answers, exam technique and common misconceptions. https://www.youtube.com/watch?v=Rkc50S-tj4A

Recommended books

Book	Best use
CGP GCSE Computer Science OCR Complete Revision and Practice ISBN 9781789085587	Concise notes, quick questions and whole-course practice.
ClearRevise OCR GCSE Computer Science J277 ISBN 9781910523230	Visual summaries and focused exam practice.
OCR GCSE Computer Science Second Edition by George Rouse and Lorne Pearcey ISBN 9781510484160	Detailed explanations, worked examples and fuller topic study.