



Quick Revision Sheets

Fast, examiner-focused summaries by **FutureLogic Education** for IGCSE Computer Science. Every section is designed to be read quickly and remembered easily.

Binary — One-Page Cheat Sheet

128	64	32	16	8	4	2	1
Nibble				4 bits			
Byte				8 bits			
Overflow				Result too large for available bits			
Two's Complement				Invert all bits, then add 1			
Hexadecimal				Base-16 — each digit = 4 binary bits (1 nibble)			

EXAM TIP: Write the place values above every binary number before converting. It takes seconds and prevents errors.



Storage — Flash Summaries

RAM	Volatile primary storage — holds data currently in use.
ROM	Non-volatile — stores permanent startup instructions (BIOS).
Cache	High-speed memory storing frequently used data close to the CPU.
SSD	Solid state — no moving parts, faster than HDD.
HDD	Magnetic storage — slower, moving parts, larger capacity.

EXAM TIP: RAM = volatile. ROM = non-volatile. SSD = no moving parts. Learn these precisely — they appear every year.

File Size Formulas

Image file size depends on:

- Resolution (pixels x pixels)
- Colour depth (bits per pixel)
- Compression (lossy or lossless)

Sound file size depends on:

- Sample rate (Hz — samples per second)
- Sample resolution (bits per sample)
- Duration (length of recording)

Formula: Image file size = Width x Height x Colour depth (bits)

Formula: Sound file size = Sample rate x Sample resolution x Duration





■ Key Definitions — Must Know

Metadata	Data that describes other data — e.g. file size, date created, camera settings.
Encryption	Converting plaintext into ciphertext so unauthorised users cannot read it.
DNS	Converts human-readable domain names into IP addresses.
Packet Switching	Splitting data into packets, each sent independently across a network.
Parity Bit	An extra bit added to binary data to detect transmission errors.
Overflow	When a calculation result exceeds the number of bits available to store it.

EXAM TIP: DEFINE questions need the full technical meaning. "Metadata = data about data" is too thin — always develop.

Teacher note: These six definitions appear most frequently in DEFINE and State questions. Drill them until automatic.





■ What Loses Marks?

x	Missing technical vocabulary — replace vague words with precise terms.
x	Not answering the command word — DESCRIBE ≠ EXPLAIN ≠ IDENTIFY.
x	Forgetting to show working in binary — method marks are awarded even if wrong.
x	Confusing RAM and ROM — volatile vs non-volatile, temporary vs permanent.
x	Mixing sample rate and sample resolution — rate = samples/sec, resolution = bits/sample.

■ How to Answer Explain Questions



*"Cache improves performance **because** frequently used data is accessed faster than RAM, **therefore** the CPU spends less time waiting."*

→	because
→	therefore
→	as a result
→	which means
→	so that





■ What Cambridge Wants

✓	Technical keywords — use precise Cambridge vocabulary in every answer.
✓	Direct answers — get to the point immediately, no filler sentences.
✓	Developed explanations — never stop after one sentence on a 3-mark question.
✓	Accurate definitions — use the full technical meaning, not everyday language.
✓	Correct terminology — name components, registers, and processes precisely.

■ Examiner Tips

1 mark = 1 point	Do not overwrite — one clear fact is all that is needed.
Show binary working	Method marks are awarded even if the final answer is wrong.
Use precise terminology	Vague words like "faster" or "better" are not credited without reason.
Read command words first	Identify → State → Describe → Explain. Different depth, different marks.
Do not overwrite answers	Extra sentences on 1-mark questions waste time and earn nothing.

Fast Revision Checklist

■	Learn the Top 50 definitions — cover and recall each one.
■	Practise binary conversions — decimal to binary and back.
■	Revise the FDE cycle — name every register and its role.





■	Learn cyber security threats — phishing, malware, trojans, firewalls.
■	Practise explain questions using the Point → Because → Effect formula.
■	Memorise file size factors — resolution, colour depth, sample rate, sample resolution.
■	Revise command words — know the difference between State, Describe, and Explain.

