



Top 50 IGCSE Computer Science Definitions

Revision notes by **FutureLogic Education** — 50 essential Computer Science definitions for IGCSE exam preparation. Learn these precisely using Cambridge terminology.

EXAM TIP: DEFINE questions require the full technical meaning. Vague answers like "RAM is memory" lose marks. Learn each definition exactly as written.

Teacher note: Use this as a class glossary test — cover the definition column and ask students to recall each term. Focus particularly on terms that appear in DEFINE questions: volatile, encryption, overflow, metadata.

#	Term	Definition
	Algorithm	A step-by-step set of instructions used to solve a problem.
2	ALU	Part of the CPU that performs arithmetic calculations and logical operations.
	Binary	A number system that uses only 0 and 1.
4	Bit	A single binary digit (0 or 1) — the smallest unit of data.
	Byte	A group of 8 bits used to store one character.
6	Cache Memory	High-speed memory storing frequently used data close to the CPU.
	Clock Speed	The number of Fetch-Decode-Execute cycles completed per second, measured in GHz.
8	Compiler	Software that translates entire source code into machine code before execution.
	Control Unit (CU)	Part of the CPU that manages the flow of data and controls the FDE cycle.





#	Term	Definition
10	CPU	The Central Processing Unit — the processor responsible for executing all instructions.
	Cyber Security	Protection of computer systems, networks, and data from digital attacks.
12	Data	Raw facts and figures that have not yet been processed.
	Database	An organised collection of structured data stored electronically.
14	DNS	Domain Name System — converts human-readable domain names into IP addresses.
	Encryption	Converting plaintext into ciphertext so that unauthorised users cannot read the data.
16	Fetch-Decode-Execute	The process the CPU uses to continuously process instructions: Fetch → Decode → Execute.
	Firewall	A security system that monitors and filters incoming and outgoing network traffic.
18	HDD	Hard Disk Drive — magnetic secondary storage device with moving parts.
	Hexadecimal	A base-16 number system using digits 0–9 and letters A–F.
20	HTML	HyperText Markup Language — used to structure and create web pages.
	HTTP	HyperText Transfer Protocol — used to transfer web pages over the internet.
22	HTTPS	Secure version of HTTP that uses encryption to protect data in transit.
	IDE	Integrated Development Environment — software containing tools for writing and testing programs.
24	Interpreter	Software that translates and executes source code one line at a time.





#	Term	Definition
	IP Address	Internet Protocol address — a unique numerical address identifying a device on a network.
26	LAN	Local Area Network — a network covering a small geographical area such as a building.
	Lossless Compression	Compression that reduces file size with no permanent loss of data — fully reversible.
28	Lossy Compression	Compression that permanently removes some data to reduce file size — not reversible.
	MAC Address	Media Access Control address — a unique hardware identifier assigned to a network card.
30	Machine Code	Binary instructions (0s and 1s) understood and executed directly by the CPU.
	Malware	Malicious software designed to disrupt, damage, or gain unauthorised access to a system.
32	Metadata	Data that describes other data — for example, file size, date created, or camera settings.
	Network	Two or more connected devices that can communicate and share resources.
34	Optical Storage	Storage that uses lasers to read and write data — for example, CDs, DVDs, Blu-ray.
	Overflow	An error occurring when a calculation result is too large for the available number of bits.
36	Packet Switching	Method of splitting data into packets, each sent independently across a network.
	Parity Bit	An extra bit added to binary data to detect transmission errors.
38	Phishing	A fraudulent attempt to obtain sensitive information by disguising as a trustworthy source.
	Pixel	The smallest individual element of a digital image — each pixel stores a colour value.





#	Term	Definition
40	RAM	Random Access Memory — volatile primary storage used to hold data currently in use.
	Resolution	The number of pixels in an image — higher resolution means more detail.
42	ROM	Read Only Memory — non-volatile memory that stores permanent startup instructions (BIOS).
	Router	A device that forwards data packets between different networks.
44	Sample Rate	The number of sound samples taken per second, measured in Hz or kHz.
	Sample Resolution	The number of bits used to store each sound sample — higher means more accurate sound.
46	SSD	Solid State Drive — secondary storage with no moving parts, faster than HDD.
	Trojan Horse	Malware disguised as legitimate software to trick users into installing it.
48	URL	Uniform Resource Locator — the full address used to locate a specific webpage.
	Variable	A named storage location in a program that holds a value which can change.
50	WAN	Wide Area Network — a network covering a large geographical area such as the internet.

