

Topic 16: System Software

Keyword sheet - Cambridge AS & A Level Computer Science 9618. Tick each term once you can define it from memory.

Keyword	Definition	Know it?
Kernel	Core of the OS with direct hardware access, controlling processes, memory and devices.	
Multi-tasking	Apparent simultaneous execution of several processes by time-sharing the CPU.	
Process / process states	Program in execution / running, ready, blocked.	
Process control block (PCB)	Data structure storing a process's state, registers and priority.	
Scheduling: FCFS, SJF, SRTF, round robin, priority	Algorithms deciding which process runs next; round robin uses time slices; SRTF and priority can be pre-emptive.	
Pre-emptive / non-pre-emptive	OS can / cannot interrupt a running process.	
Context switch	Saving the state of one process and loading another.	
Virtual memory	Using secondary storage to extend RAM, enabling large programs.	
Paging	Dividing memory and programs into fixed-size pages and frames, swapping pages between RAM and disk.	
Segmentation	Dividing programs into variable-sized logical segments.	
Page fault / thrashing	Required page not in RAM / excessive swapping that slows the system.	
Compiler stages	Lexical analysis, syntax analysis, code generation and optimisation.	
Syntax diagram / BNF	Graphical / text notation for the grammar of a language.	
Reverse Polish Notation (RPN)	Postfix notation evaluated using a stack, with no need for brackets.	
Interpreter vs compiler	Interpreter: immediate execution, easy testing, slower; compiler: one translation, fast execution, source not needed.	