Computer Science - Year 11 Timetable

Mock

1 hour exam, comprising a combination of both papers:

Paper 1 – Algorithms and Programming

Paper 2 – Computer System

******There will be more focus on the Paper 1 content (as this hasn't been tested yet in a mock), so please focus your revision on paper 1 primarily.**

Paper 1 Algorithms and Programming			**Paper 2 – Computer Systems**	
Algorithms	Definitions – Algorithms, Decomposition, Abstraction.		Computer Hardware	Define computer systems. Define hardware. Explain the Von Neumann Architecture. Describe and explain the CPU. Explain the characteristics of a CPU: clock, cache, and core. Describe the two different types of memory: ROM and RAM. Storage: Magnetic, Optical, Solid State. Cloud Storage – advantages and disadvantages.
Pseudocode	Be able to analyse and write pseudo code.		Data Representation	Binary Hex Denary Be able to convert between them all. Adding binary. Images – Define pixels, colour depth, resolution. Characters – ASCII and Unicode.

Flowchart	Be able to analyse and write flow charts.		Software	Know the definition and role of an operating system. Be able to describe what applications software and utility software is.
Subroutines	Be able to analyse and write procedural and functional subroutines, including parameters.		Cyber Security	Know the four types of social engineering: phishing, pharming, shouldering and blagging. Know the different types of malicious code: malware, adware, spyware, Trojans. Know different security measures to take to prevent cyber threats: MAC filtering, encryption, authentication, firewalls.
Variables	Know the different types of variables (local and global). Be able to identify the data type of the variable: String, Integer, Float, Boolean).		Networks	Know the types of networks: LAN, WAN, PAN. Know the types of topologies: Ring, Bus, Star. Know different network proctols: TCP, HTTP, HTTPS. Be able to describe the TCP/IP stack: Application, Network, Transport, Link layers. Know what packets of data are and how they are broken down.
Operators	Be able to use + - * / AND OR NOT, Equal to, Not equal, Greater than, Less than		Consequences of Computing	Know the legal issues – including laws – associated with computing. Describe the ethical and environmental issues linked with technology and ways of solving these problems.
Sorting Algorithms	Explain merge sort. Explain bubble sort. Compare the two.			

Searching algorithms	Understand linear search. Understand binary search. Compare the two.			
Languages	High level languages Low level languages Compare compilers and interpreters.			
Dry-running	Using trace tables to assess variables and what is being stored after executing code line by line			
Errors	Describe syntax and logic errors.			