



Subject		Computer Science		
Title/Topic	Format	Length	Date	
Paper 1 – Computer Systems	Written Paper	2 hours 30 minutes	Wednesday 4 January 9.15am – 11.45am	
Paper 2 – Problem Solving,	Written Paper	2 hours 30 minutes	Wednesday 11 January 9.15am – 11.45am	

My Advent assessment will test my knowledge on...

Paper 1

- Binary Data
 - Unsigned numbers
 - Hexadecimal conversion
 - Normalising a floating-point binary number
 - Converting binary floating point to decimal
 - Adding floating-point values
- CPU Performance Factors including pipelining
- RAM and ROM
- Legislation - Computer Misuse Act
- Uses of a GPU
- Object Oriented Programming – Writing a class template
- Web Development
 - Purpose of HTML and CSS
 - Completing a Javascript function
 - Client-side vs server-side processing
- Storage devices – Solid state vs magnetic
- Data Structures – Stacks and queues
- Databases-
 - Flat file vs relational db, primary key, secondary key, foreign key
 - Normalisation
- Boolean Algebra
 - Writing expressions from circuit diagrams
 - Simplifying a Boolean expression
 - Completing a truth table
- Addressing modes – comparison between them and how they function
- CPU Architecture – Registers in the CPU
- Little Man Computer – Assembly
 - Tracing through an existing program
 - Convert assembly to a high-level language equivalent



- Data Structures – Binary trees, linked lists, hash tables

Paper 2

- Binary Search vs Linear Search
- Errors – Syntax vs Logic
- CPU Pipelining
- Tree Traversal – Bread first
- Good programming practice - Global and local variables
- 2D Arrays, Functions and Constructs
 - Answer questions and solve problems, write solutions that access 2D arrays of data
- Computational Thinking – Abstraction, Decomposition, Concurrent Processing
- Big O Notation of standard algorithms
- Sorting algorithms - Quicksort
- Algorithms – A* Pathfinding
- Object Oriented Programming Terminology
 - Methods, Constructor, Inheritance, Encapsulation
 - Writing a constructor method
 - Writing a method
- Circular Queue – How they work and implementation in code

What should I do to revise and prepare for this assessment?

To prepare for this assessment:

1. Use the revision materials provided

What useful websites/resources could I use to help me prepare?

Empty box for providing useful websites/resources.