You will be completing a full paper 1 and paper 2

Paper 1

- **Fundamentals of Algorithms:** Understanding, designing, and tracing algorithms using pseudocode or flowcharts.
- **Searching Algorithms:** Linear search and Binary search.
- **Sorting Algorithms:** Bubble sort, Merge sort, and Insertion sort.
- **Programming Fundamentals:**
    - **Data Types & Casting:** Integers, Reals, Booleans, Characters, Strings.
    - **Programming Constructs:** Sequence, Selection (IF/ELSE), Iteration (FOR/WHILE loops).
    - **Data Structures:** Arrays (1D and 2D), Lists, Records.
    - **Input/Output & File Handling:** Reading/writing to text files.
    - **Subroutines:** Functions and Procedures, parameters, and return values.
- **Computational Thinking:** Decomposition, abstraction, and algorithmic thinking.
- **Robust & Secure Programming:** Input validation, authentication, error handling, and testing strategies.
- **Boolean Logic:** Logic gates (AND, OR, NOT), truth tables, and Boolean expressions.
- **Programming Languages:** High-level vs Low-level languages, translators (compilers, interpreters, assemblers).

Paper 2

- **Fundamentals of Data Representation:** Understanding number bases (binary, decimal, hexadecimal), units of information (bits, bytes, etc.), binary arithmetic (shifts and addition), and how text, images, and sound are represented and compressed (Huffman and RLE).
- **Computer Systems:** Defining hardware and software, the role of operating systems and utility programs, and Boolean logic (AND, OR, NOT, XOR gates and truth tables).
- **Fundamentals of Computer Networks:** Network types (LAN, WAN, PAN), topologies (bus, star, mesh), protocols (TCP/IP, HTTP, HTTPS, FTP, SMTP, IMAP), and the 4-layer TCP/IP model.
- **Cyber Security:** Identifying threats like social engineering and malware, as well as methods to detect and prevent them (e.g., authentication, firewalls).
- **Relational Databases and SQL:** Understanding database concepts and using Structured Query Language (SQL) to retrieve and manipulate data.
- **Ethical, Legal, and Environmental Impacts:** Examining the impacts of digital technology on society, including issues of privacy, legislation (e.g., Data Protection Act), and environmental concerns.