

Year 12 Computer Science Preview Sheet

Exam Board: AQA

Syllabus: 7517

Unit 1: Fundamentals of programming

- Pseudocode
- Functions
- Constants and variables
- Selection; Iteration
- Arrays
- Subroutines
- Files; Exception handling

Unit 2: Problem solving and theory of computation

- Solving logic problems;
- Structured programming
- Algorithms; Testing and evaluation
- Abstraction and automation
- Finite state machines

Unit 12: OOP

- Concepts of object-oriented programming ; design principles

Unit 3: Fundamentals of data representation

- Number systems;
- Bits, bytes and binary
- Bitmapped graphics
- Digital representation of sound
- Data compression and encryption algorithms

Unit 4:

- Role of Operating System
- Programming language classification and translators
- Logic gates
- Boolean algebra

Unit 11: Fundamentals of databases

- Entity relationship modelling
- Relational databases and normalization
- Defining and updating tables in SQL
- Systematic approach to problem solving

Unit 5: Computer organisation and structure

- Internal computer hardware
- The processor instruction set
- Assembly language
- Input-output devices
- Secondary storage devices

Unit 6: Communications

- Network topologies; Client-server and peer-to-peer
- Wireless networking, CSMA and SSID
- Internet structure; Packet switching
- Protocols; IP addresses
- Security, privacy and challenges of digital age

Non – Exam –Assessment:

Problem Analysis (interview, documents looked at, observation; Evidencing work; DFDs and flowcharts, ERD, Screen designs