



Contents

Section 1	Theory of computer science	
	Binary systems and hexadecimal	
		Introduction
		The binary system
		Measurement of the size of computer memories
		Example use of binary
		The hexadecimal system
	1.6	
Chapter 2	Communication and internet technologies	
	2.1	Introduction
		Data transmission
		Error-checking methods
	2.4	Internet technologies
Chapter 3	Logic gates and logic circuits	
	3.1	Introduction
	3.2	Logic gates
	3.3	Truth tables
	3.4	The function of the six logic gates
	3.5	Logic circuits
	3.6	Logic circuits in the real world
Chapter 4	Operating systems and computer architecture	
	4.1	Introduction
	4.2	Operating systems
	4.3	Interrupts
		Computer architecture
		The fetch-execute cycle
Chapter 5	Input and output devices	
	5.1	Introduction
	5.2	Input devices
	5.3	Output devices
Chapter 6	Memory and data storage	
	6.1	Introduction
	6.2	File formats
	6.3	
	6.4	

6.5 How to estimate the size of a file



(For 9th and 10th Standard-IGCSE)



Chapter 7 High- and low-level languages

- 7.1 Programming languages
- 7.2 Translators
- 7.3 What happens when things go wrong?

Chapter 8 Security and ethics

- 8.1 Introduction
- 8.2 Security and data integrity
- 8.3 Cookies
- 8.4 Loss of data and data corruption
- 8.5 Firewalls and proxy servers
- 8.6 Security protocols
- 8.7 Encryption
- 8.8 Applications
- 8.9 Computer ethics
- 8.10 Free software, freeware and shareware

Section 2 Practical problem-solving and programming

Chapter 9 Problem-solving and design

- 9.1 Introduction
- 9.2 Algorithms
- 9.3 Test data
- 9.4 Validation and verification
- 9.5 Using trace tables
- 9.6 Identifying and correcting errors
- 9.7 Producing algorithms

Chapter 10 Pseudocode and flowcharts

- 10.1 Introduction
- 10.2 Assignment
- 10.3 Conditional statements
- 10.4 Loop structures
- 10.5 Input and output statements
- 10.6 Standard actions
- 10.7 Examples of algorithms in pseudocode
- 10.8 Standard flowchart symbols

Chapter 11 Programming concepts

- 11.1 Introduction
- 11.2 Programming
- 11.3 Declaration and use of variables and constants
- 11.4 Basic data types
- 11.5 How to make your program work



(For 9th and 10th Standard-IGCSE)



Chapter 12 Data structures: arrays and using pre-release material

- 12.1 Introduction
- 12.2 Arrays
- 12.3 Using pre-release material

Chapter 13 Databases

- 13.1 Introduction
- 13.2 What are databases used for?
- 13.3 The structure of a database
- 13.4 Practical use of a database