



OCR GCSE Component 2 PLC (Algorithm questions are not exclusive to Component 02 and can be assessed in all

Component 2		R	A	G
2.1 Algorithms	I can explain the terms: Abstraction, decomposition and algorithmic thinking			
	I can compare and contrast binary and linear search algorithms			
	I can compare and contrast bubble, merge and insertion sort algorithms			
	I can produce an algorithm in Pseudocode or a Flow Chart that successfully solves a problem			
	I can interpret, correct or complete an algorithm			
2.2 Programming Techniques	I can identify when to use the following data types: Integer, Boolean, Real, Character and String			
	I can declare variables and constants with meaningful identifier names			
	I can use local and global variables appropriately			
	I can use selection when programming			
	I can create a subroutine (procedures and functions)			
	I can use parameters to pass data within a program			
	I can use definite and indefinite iteration			
	I can use nested selection and nested iteration			
	I can use arithmetic operations in a programming language			
	I can use relational operations in a programming language			
	I can use Boolean operations in a programming language			
	I can use Boolean operations in a programming language			
	I can create an array/list in a programming language (up to a 2d array)			
	I can create a record in a programming language			
	I can input data from a file to a program			
	I can output data from a program to a file (write and append)			
	I can use string handling operations in a programming language			
I can use a random number generator in a programming language				
I can use SQL to search for data				
2.3 Producing Robust Programs	I can include the following in my programming: Input sanitisation/validation, Plan for contingencies, anticipate misuse, authentication			
	I understand how comments and indentation improve the maintainability of a program			
	While using suitable test data I can apply the following types of testing: iterative, final/terminal			
2.4 Computational Logic	I can explain why data is represented in computer systems in binary form			
	I can create/amend/complete simple logic circuits/statements using the operations AND, OR and NOT			
	I can describe the main types of utility systems software			
	I can complete a trace table to determine the purpose of an algorithm			
2.5 Translators and Facilities of Languages	I can explain the characteristics and purpose of high and low level languages			
	I can explain the purpose of translators			
	I can describe the characteristics of: an assembler, a compiler and interpreter			
	I can describe the common tools of an IDE			
2.6 Data Representation	I know and can convert the units of information from bit to Petabyte			
	I understand and can convert between binary, hexadecimal and decimal			

	I can add two 8 bit binary integers and explain overflow errors that may occur			
	I can explain the term check digit			
	I can explain the advantages and disadvantages of using different character sets to represent data			
	I can explain how bitmap images are represented in binary by explaining the terms pixel, resolution and colour depth			
	I can calculate a bitmap image file size based on number of pixels and colour depth			
	I can explain what metadata is			
	I can explain how sample rate and sample resolution represent sound digitally			
	I can calculate the size of a sound file based on the sample rate and sample resolution			
	I can explain the need for data compression and methods of compressing data (lossless and lossy)			