

IGCSE Computer Science

Name: _____ Score: _____

1. Abstraction means:

- ☐ testing the program with extreme and boundary data
- ☐ keeping only the important details and ignoring the rest
- ☐ breaking a problem into smaller, more manageable parts
- ☐ writing the solution in binary so the computer can run it

2. Checking that an age is between 0 and 120 is a:

- ☐ format check
- ☐ presence check
- ☐ double entry
- ☐ range check

3. A linear search finds a value by:

- ☐ halving the list each time and checking the middle item
- ☐ sorting the list first and then reading the first item
- ☐ checking each item in turn from the start
- ☐ swapping pairs of items until the value moves to the front

4. Pseudocode is:

- ☐ a flowchart that uses shapes to show each step
- ☐ machine code written as binary instructions for the CPU
- ☐ steps written in simple, code-like English (not a real language)
- ☐ a programming language that runs directly on a computer

5. Double entry of data is a validation check.

- ☐ True ☐ False

6. A bubble sort puts a list in order by:

- ☐ checking each item once and placing it straight into its final position
- ☐ building a binary tree and reading the values back out in order
- ☐ comparing side-by-side pairs and swapping any that are out of order, repeatedly
- ☐ dividing the list into two halves and merging them back in order

7. Trace 'total = 0; FOR i = 1 TO 5: total = total + i'. What is total at the end?

8. Using totalling on the list [2, 4, 6, 8], what is the final total?

9. Every algorithm can be decomposed into:

☐ sensor, microprocessor and actuator

☐ analysis, design and testing

☐ input, processing and output

☐ header, payload and trailer

10. Entering data twice and comparing the two copies is:

☐ a check digit added to the end of the data

☐ double entry (a verification method)

☐ abstraction, keeping only the important details

☐ a range check (a validation method)

1. keeping only the important details and ignoring the rest

Abstraction simplifies; decomposition breaks a problem into parts.

2. range check

A range check confirms a value lies within allowed limits.

3. checking each item in turn from the start

Linear search examines items one by one until it finds the value or reaches the end.

4. steps written in simple, code-like English (not a real language)

Pseudocode describes an algorithm in readable, code-like English without being a real language.

5. False

False. Double entry is a verification check: it confirms data was entered correctly. Validation checks that data is sensible, such as a range or type check.

6. comparing side-by-side pairs and swapping any that are out of order, repeatedly

It swaps out-of-order neighbours and repeats passes until no swaps are needed.

7. 15

$1+2+3+4+5 = 15$ – the value the trace table builds up row by row.

8. 20

$2 + 4 + 6 + 8 = 20$.

9. input, processing and output

Input (data in) $\rightarrow$ processing (the work) $\rightarrow$ output (the result).

10. double entry (a verification method)

Double entry is a verification method – the two copies must match.