ENGLAND GCSE COMPUTER SCIENCE EDEXCEL · UNIT 1 · 25 QUESTIONS

Computational Thinking and Algorithms — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A smartphone searches a sorted list of songs for one title. Which search rules out half the list at each step?**

- A Merge sort used for sorting only
- B Bubble sort
- C Linear search
- D Binary search

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2 **A laptop runs a search to find a file by name. The files are not in any order. Which search should it use?**

- A Merge sort used for sorting only
- B Linear search
- C Binary search
- D Bubble sort

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3 **A tablet shows a flowchart for a quiz. Which symbol shows data going into the quiz?**

- A The input output symbol
- B The terminator symbol
- C The decision symbol
- D The process symbol used for calculations

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4 **A robot plan is drawn as a flowchart. Which symbol shows the start of the plan?**

- A The input output symbol used for data only
- B The process symbol
- C The decision symbol
- D The terminator symbol

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5 **A keyboard is used to plan an algorithm. Which of these is a way of representing the algorithm?**

- A A web page about the problem
- B A database of records
- C A spreadsheet of results
- D A flowchart

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6 **A games console program counts how many numbers in the list 5, 15, 8, 22 are greater than 10. What is the count?**

- A 1
- B 2
- C 3
- D 20

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7 **A bubble sort sorts a list of 4 items. How many passes does it need at most?**

- A 4
- B 30
- C 3
- D 2

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8

What is decomposition?

A Finding things that are the same in different problems

B Writing out the steps of a solution in order

C Breaking a problem into smaller parts

D Removing detail from a problem to focus on what matters

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9

How can the efficiency of two algorithms be compared?

A By checking which one uses the most variables

B By counting how many lines of code each one has, in some situations

C By checking which one was written first

D By counting the steps each one takes for the same data

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10 **How does an insertion sort work?**

- A It checks the middle item and then halves the list
- B It takes each item and inserts it into the correct place in the sorted part
- C It splits the list in half and merges the halves in order
- D It compares neighbours and swaps them if they are in the wrong order, in some situations

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11 **What is an advantage of a linear search?**

- A It is always faster than a binary search
- B It works on a list that is not sorted
- C It sorts the list as it searches through it
- D It only ever checks one item in the list

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12 **In a flowchart, what do the arrows between symbols show?**

- **A** How long each step takes to carry out
- **B** Which steps are the most important in the algorithm
- **C** The order the steps are carried out in
- **D** Which steps use the most memory when they run

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13 **A program counts how many numbers in the list 100, 50, 1 are greater than 10. What is the count at the end?**

- **A** 3
- **B** 30
- **C** 1
- **D** 2

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14 **Which of these is a way of representing an algorithm?**

- A Pseudocode
- B A database of records
- C A web page about the problem
- D A spreadsheet of results

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15 **What is an advantage of a merge sort?**

- A It needs no extra memory to run at all
- B It is the simplest sort to understand
- C It is efficient even on large lists
- D It sorts a list in a single pass every time

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16 **A linear search checks a list of 18 items. What is the most items it can check before it finishes?**

- A 17
- B 18
- C 9
- D 180

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17 **A program sets total to 0, then adds each number in the list 8, 8, 8 in turn. What is the value of total at the end?**

- A 240
- B 23
- C 25
- D 24

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18 **A bubble sort makes its first pass over the list 6, 2, 5, 1, comparing each pair of neighbours and swapping them if they are in the wrong order. How many swaps are made in this pass?**

- A 2
- B 3
- C 4
- D 30

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19 **A binary search checks a sorted list of 16 items. After one check, at most how many items can still need checking?**

- A 8
- B 16
- C 4
- D 80

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20 **A binary search checks a sorted list of 32 items. After one check, at most how many items can still need checking?**

- A 32
- B 8
- C 320
- D 16

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21 **In a bubble sort, which items are compared?**

- A The first item and the last item only
- B Items chosen at random from the list
- C The middle item and the items around it
- D Items next to each other in the list

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22 **In Edexcel pseudocode, what does RETURN do in a subroutine?**

A It sends a value back to the place that called it

B It prints a value on the screen for the user

C It stops the whole program from running

D It reads a value from the user at the keyboard, in some situations

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23 **A binary search checks a sorted list of 32 items. After two checks, at most how many items can still need checking?**

A 16

B 8

C 320

D 4

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24 **A bubble sort sorts a list of 6 items. How many passes does it need at most?**

- A 50
- B 5
- C 6
- D 4

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25 **What is an algorithm?**

- A A type of computer hardware that stores data
- B A way of compressing a file to make it smaller
- C A program written in a high level language
- D A set of steps to solve a problem

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ANSWER KEY

1.	D	**10.**	B	**19.**	A
2.	B	**11.**	B	**20.**	D
3.	A	**12.**	C	**21.**	D
4.	D	**13.**	D	**22.**	A
5.	D	**14.**	A	**23.**	B
6.	B	**15.**	C	**24.**	B
7.	C	**16.**	B	**25.**	D
8.	C	**17.**	D		
9.	D	**18.**	B		

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