ENGLAND GCSE COMPUTER SCIENCE OCR · UNIT 3 · 25 QUESTIONS

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

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

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2 **A robot sorts a list of distances from smallest to largest with an insertion sort. What does it do with each new distance?**

- A It checks the middle distance and halves the list, in some situations
- B It inserts it into the correct place among those already sorted
- C It splits the list in half and merges the halves
- D It swaps it with the largest distance in the list

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3 **A games console program counts how many numbers in the list 4, 12, 2, 14, 68 are greater than 10. What is the count?**

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

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

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

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5 **A smartphone app shows a flowchart for setting up a new account. What does the diamond shape mean?**

- A A calculation carried out by the app
- B The start of the flowchart
- C Data going into or out of the app
- D A decision that must be made

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6 **A laptop sorts a short list of scores with a bubble sort. What does the laptop compare first?**

- A Two scores chosen at random from the list
- B The first score and the last score
- C The middle score and the scores around it
- D The first two scores in the list

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7 **What is the worst case for a linear search of 20 items?**

A 20 comparisons

B 200 comparisons

C 5 comparisons

D 10 comparisons

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8 **How can the environmental impact of computing be reduced?**

A By recycling old devices and using less energy

B By buying a new device every month

C By leaving computers switched on all the time, in some situations

D By storing more data in the cloud only

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9 **Why is a trace useful?**

- A It shows what a program does and helps find errors
- B It makes a program run faster than before, in some situations
- C It stores the program on the computer
- D It prints the program out on paper

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10 **Why do websites ask users to accept cookies?**

- A Cookies store data about the user and the law says users must be told
- B Cookies make a website run faster for everyone
- C Cookies stop a website storing any data at all
- D Cookies let a website work without the internet, which can happen in some cases

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11 **One pass of a bubble sort works through a list of 10 items. How many comparisons does it make?**

A 10

B 9

C 90

D 8

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12 **How can automation affect jobs?**

A Machines can take over jobs that people used to do

B Machines never change the jobs people do

C Machines can only do jobs that need no skill

D Machines always create more jobs than they remove, in some situations

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13 **A binary search looks for an item in a sorted list of 15 items. At most how many comparisons does it need?**

- A 4
- B 5
- C 3
- D 40

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14 **A merge sort splits a list of 8 items into two halves. How many items are in each half?**

- A 2
- B 40
- C 8
- D 4

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15 **What does the Freedom of Information Act do?**

- A It makes it legal to access any computer system
- B It gives anyone the right to see any personal data, which can happen in some cases
- C It gives people the right to ask public bodies for information they hold
- D It stops public bodies holding any information

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16 **When is a bubble sort a good choice?**

- A When the list is not in any order and is long
- B When the list needs to be searched not sorted
- C When the list is very long
- D When the list is short

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17 **What does a merge sort do first?**

A It takes each item and inserts it into the sorted part, in some situations

B It compares neighbouring items and swaps them

C It splits the list into halves until each part has one item

D It checks the middle item and rules out half the list

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18 **What is pattern recognition?**

A Breaking a problem into smaller parts

B Writing a program in a high level language, in some situations

C Spotting patterns that are the same in different problems

D Removing detail that does not matter

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19 **A bubble sort sorts a list of 10 items. How many passes does it need at most?**

- A 90
- B 9
- C 10
- D 8

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20 **How are arrays numbered in OCR pseudocode?**

- A They have no numbers at all
- B They start at 1
- C They start at 10
- D They start at 0

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21 **The pseudocode sets total to 0, then for i = 1 to 10 it adds i to total. What is the value of total at the end?**

- A 54
- B 55
- C 56
- D 550

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22 **Which flowchart symbol shows data going into or out of an algorithm?**

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

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23 **A linear search looks for an item in a list of 40 items. In the worst case how many comparisons does it need?**

- A 20
- B 400
- C 40
- D 80

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24 **What does a binary search do?**

- A It sorts the list before it starts searching
- B It checks the middle item and rules out half the list at each step
- C It splits the list in half and merges the halves, in some situations
- D It checks each item in turn from the start

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25

What is the digital divide?

A The difference between two types of storage, which can happen in some cases

B The time a computer takes to start up

C The gap between two computers on a network

D The gap between people who have access to technology and people who do not

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ANSWER KEY

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

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