



<b>Ofqual QAN</b>	<b>610/6138/4</b>
<b>Quartz ID</b>	<b>2332</b>
<b>Qualification</b>	<b>Level 2 Diploma in Computing</b>

<b>Unit ID</b>	<b>2333</b>
<b>Assessment</b>	<b>Computational Problem Solving</b>
<b>Assessment Type</b>	<b>Local Examination</b>
<b>Assessment Cycle</b>	<b>Sample Examination</b>

**Answer ALL questions.**

**Clearly cross out surplus answers.**

**Time: 1 hour**

**The maximum mark for this paper is 30.**

**Any reference material brought into the examination room must be handed to the invigilator before the start of the examination.**

**SECTION A - Multiple Choice Question**  
**Circle ONE (1) correct answer from A, B, C, or D for each question.**  
**Each question is worth 1 mark.**

**Question 1**

A student is creating a game. He lists the following tasks: design characters, create levels, write game logic, and add sound effects. What computational thinking skill is he using?

- A** Pattern recognition                      **B** Abstraction  
**C** Decomposition                              **D** Algorithm design

**1 mark**

**Question 2**

Which of the following is a core element of computational thinking?

- A** Cloud computing                              **B** Separation of concerns  
**C** Social networking                              **D** Encryption

**1 mark**

**Question 3**

What does abstraction help you do when solving a complex problem?

- A** Focus on every detail of the problem      **B** Ignore the problem completely  
**C** Identify and focus on the most important information      **D** Break the problem into smaller parts

**1 mark**

**Question 4**

What is pseudocode?

- A** A type of programming language              **B** A visual diagram of an algorithm  
**C** A debugging tool for an algorithm              **D** A simplified, language-independent way to describe an algorithm

**1 mark**

### Question 5

Which of the following is used to get input from a user in Python?

- A `get()`
- B `input()`
- C `read()`
- D `scan()`

**1 mark**

### Question 6

Which of the following is a basic data structure in Python used to store a collection of items?

- A `int`
- B `print`
- C `list`
- D `input`

**1 mark**

### Question 7

Which data type would be best to store a value like True or False?

- A `bool`
- B `float`
- C `int`
- D `str`

**1 mark**

### Question 8

Which of the following is an example of a test case?

- A Writing a new function
- B Checking if the code looks neat
- C Input: 5, Output: 25 for a square function
- D Adding comments to the code

**1 mark**

### Question 9

Why is modular code design important?

- A** It makes the program run faster
- B** It reduces the number of variables needed
- C** It helps organise code, making it easier to read, test, and maintain
- D** It allows the program to run without any errors

**1 mark**

### Question 10

What does a syntax error usually indicate?

- A** The code has incorrect structure or formatting
- B** The program is running too slowly
- C** The output is not what the user expected
- D** The logic of the program is incorrect

**1 mark**

### Question 11

What is the benefit of using breakpoints in debugging?

- A** They make the code run faster
- B** They allow the program to skip errors
- C** They automatically fix bugs
- D** They pause the program at specific lines to inspect behaviour

**1 mark**

### Question 12

Which control structure is used when a program makes a decision between two or more options?

- A** Sequence
- B** Selection
- C** Function
- D** Loop

**1 mark**

### Question 13

Which of the following is a key difference between recursion and iteration?

- A** Recursion cannot be used in Python
- B** Recursion is always faster than iteration
- C** Recursion uses loops, iteration uses function calls
- D** Recursion solves problems by calling itself, iteration uses loops

**1 mark**

### Question 14

What is the main difference between an array and a list in most programming languages?

- A** Arrays can store only numbers
- B** Arrays have a fixed size, while lists can grow or shrink
- C** Lists are always sorted
- D** Lists cannot store strings

**1 mark**

### Question 15

Which of the following is **TRUE** about tuples in Python?

- A** Tuples are mutable
- B** Tuples can be changed after creation
- C** Tuples are ordered and immutable
- D** Tuples are unordered and mutable

**1 mark**

### Question 16

Which of the following best describes how a stack operates?

- A** First In, First Out (FIFO)
- B** Last In, Last Out (LILO)
- C** Last In, First Out (LIFO)
- D** Random Access

**1 mark**

### Question 17

Which **TWO (2)** factors are most commonly used to evaluate the efficiency of an algorithm?

- A Speed and code
- B Size and shape
- C Time and space complexity
- D Input and output

**1 mark**

### Question 18

Which search algorithm is generally more efficient for large, sorted datasets?

- A Binary search
- B Bubble search
- C Linear search
- D Random search

**1 mark**

### Question 19

Which condition must be true for binary search to work correctly?

- A The list must be unsorted
- B The list must be sorted
- C The list must contain only even numbers
- D The list must be in reverse order

**1 mark**

### Question 20

What does Big O notation describe in computer science?

- A The size of the computer
- B The number of variables in a program
- C The performance or efficiency of an algorithm
- D The efficiency of the user interface

**1 mark**

### Question 21

Why is a base case necessary in a recursive function?

- A To make the function run faster
- B To prevent infinite recursion
- C To increase memory usage
- D To allow loops to run

1 mark

### Question 22

Which of the following is a Boolean operator?

- A ADD
- B Multiply
- C AND
- D Print

1 mark

### Question 23

Which of the following is a real-world example of Boolean logic?

- A Calculating the average of numbers
- B Deciding access to a website based on login status
- C Drawing a graph
- D Printing a document

1 mark

### Question 24

What is the result of **NOT** True?

- A True
- B False
- C Error
- D None

1 mark

### Question 25

Which Boolean expression returns True?

- A False OR False
- B True OR False
- C False AND True
- D False AND False

1 mark

### Question 26

Why is ethics important in computational problem solving?

- A** To make programs run faster
- B** To reduce the cost of software development
- C** To improve the appearance of user interfaces
- D** To ensure decisions made by algorithms are fair and responsible

**1 mark**

### Question 27

What is a potential ethical issue with machine learning algorithms?

- A** They always produce random results
- B** They can be biased if trained on unfair or incomplete data
- C** No impact on rural communities
- D** They cannot be used in mobile apps

**1 mark**

### Question 28

Which global regulation is known for its strict data privacy rules and applies to organisations handling EU citizens' data?

- A** CCPA
- B** GDPR
- C** COPPA
- D** HIPAA

**1 mark**

### Question 29

Why is it important to consider ethics when developing software?

- A** To make the software more colourful
- B** To ensure responsible and fair use of technology
- C** To reduce the cost of development
- D** To increase download speed

**1 mark**

### Question 30

Why is accessibility an ethical consideration in software design?

- A** To ensure all users, including those with disabilities, can use the software
- B** The ease of user interface navigation
- C** To make the software look better
- D** To reduce the cost of development

**1 mark**

**End of paper**