

GRADE 7 — COMPUTING

Unit 5 & 6: Programming Part 1 and Part 2 — End of Unit Test

Instructions: Answer ALL questions in the spaces provided. Write your answers clearly. Total marks: 60.

Section A — Multiple Choice Questions (10 marks — 1 mark each)

Circle the letter next to the correct answer.

1. What is an algorithm?
 - A) A programming language used only for websites
 - B) A step-by-step sequence of instructions used to carry out a task or solve a problem
 - C) A type of computer hardware
 - D) A syntax error in a program
2. Which of the following is a text-based programming language?
 - A) Scratch
 - B) Python
 - C) Flowchart
 - D) SQL diagram
3. Which symbol does Python use to represent the MOD operator?
 - A) //
 - B) %
 - C) MOD
 - D) #
4. In BIDMAS, what does the letter 'I' stand for?
 - A) Integers
 - B) Instructions
 - C) Indices
 - D) Iteration
5. Which relational operator means 'greater than or equal to'?
 - A) <=
 - B) >=
 - C) <>
 - D) ==
6. Which Python code will sort a list called 'numbers' into descending order?
 - A) numbers.sort()
 - B) numbers.sort(reverse = True)
 - C) numbers.reverse()
 - D) numbers.descending()
7. What is a syntax error?
 - A) A mistake in the logic of a program that gives the wrong output
 - B) A mistake within a program that breaks the rules of the programming language and stops the program running
 - C) A missing image file
 - D) An error found only in Scratch
8. What does the Python len() function do?

- A) Returns a random number
- B) Converts a string to an integer
- C) Returns the number of items in a list or characters in a string
- D) Deletes a variable

9. Which of the following converts a string to upper case in Python?

- A) message.upper()
- B) message.UPPER
- C) upper(message)
- D) message.big()

10. What is a computer model?

- A) A physical model of a computer
- B) A mathematical representation of a real-life situation, used to predict what might happen in the future
- C) A type of syntax error
- D) A subprogram used to print text

Section B — Short Answer Questions (10 marks — 2 marks each)

1. Define the term 'pseudocode' and give one reason why programmers use it. [2]

2. Explain one difference between a text-based programming language and a visual programming language. [2]

3. What is the purpose of a trace table? Give one type of error it can help identify. [2]

4. Explain what is meant by 'casting' in programming and give one example. [2]

5. State one advantage and one disadvantage of using computer models and simulations. [2]

Section C — Matching Questions (10 marks — 2 marks each)

Draw a line, or write the matching letter, to match each term in Column A with its correct definition in Column B.

Column A	Column B
1. Algorithm	A. Repeating, or looping, an instruction until a specified result is reached
2. Variable	B. An application that helps programmers design, develop and test their programs
3. Iteration	C. A step-by-step sequence of instructions used to carry out a task or solve a problem

Column A	Column B
4. Subprogram	D. A block of code that can be reused within the same program or in several different programs
5. IDE	E. Part of a program that is given a specific value, such as a number or a name

Section D — Practical Questions (20 marks — 4 marks each)

Write Python code to complete each task. You may use the space under each code box for extra working.

1. Write a Python program that creates a list called scores containing the numbers 45, 12, 89, 3, 67 and then sorts the list into ascending order and prints it. [4]

2. Using BIDMAS rules, write down the result of the following calculation, showing your working: $(5 + 3) * 2 - 4 / 2$ [4]

3. Write a Python program that asks the user to enter their age using input(), converts it to an integer, and then uses an if/else statement with a relational operator to print 'You may continue.' if the age is 13 or over, or 'You are not old enough.' if not. [4]

4. Write a Python program that stores the string "Computer Science" in a variable called subject, then prints the string converted to upper case and prints the total number of characters in the string. [4]

5. Write a Python program that stores the string "programming" in a variable called word, then uses string slicing to print only the first four characters of the string. [4]

END OF QUESTION PAPER