

Revision Sheet

IGCSE Computer Science · Unit 8 Programming

12 vocabulary items · 40 marks of exam questions (6 questions)

Part 1 · Vocabulary review answer key. Section A wants the exact English spelling.

Question	Answer	Marks
1	variable	1
2	constant	1
3	data type	1
4	string	1
5	iteration	1
6	procedure	1
7	function	1
8	parameter	1
9	array	1
10	one-dimensional (1D) array	1
11	two-dimensional (2D) array	1
12	file	1

- 13(a) **One mark per mark point, max three**
- Storing string in `Phrase`
 - Correct use of `LENGTH` function
 - Correct use of `UCASE` function
 - Correct outputs of `LENGTH` and `UCASE`

For example:

```
Phrase ← "The beginning is the most important part"
OUTPUT LENGTH(Phrase)
OUTPUT UCASE(Phrase)
```

- 13(b) **One mark for each correct line, max two**

```
40
THE BEGINNING IS THE MOST IMPORTANT PART
```

- 14 **One mark per mark point, max five**
- MP1 storing string in `Quote`
- MP2 correct assignment for `Start` // sending correct start value
- MP3 correct assignment for `Number` // sending correct number of characters
- MP4 use of `SUBSTRING` function with first parameter as `Quote`, or equivalent, plus two other parameters
- MP5 correct use of `LCASE` function
- MP6 two correct outputs

For example:

```
Quote ← "Learning Never Exhausts The Mind"
Start ← 25
Number ← 8
OUTPUT SUBSTRING(Quote, Start, Number)
OUTPUT LCASE(Quote)
```

- 15(a)
- ```
01//02//06//10
04(07) and/or 08
03(12)
```

- 15(b) **One mark for each error identified and corrected**

Line 04 < should be >

Line 08 Count should be Counter

Line 11 ENDWHILE should be ENDIF

```
01 Max ← List[1]
02 Min ← List[1]
03 FOR Counter ← 2 TO 1000
04 IF List[Counter] > Max
05 THEN
06 Max ← List[Counter]
07 ENDIF
08 IF List[Counter] < Min
09 THEN
10 Min ← List[Counter]
11 ENDIF
12 NEXT Counter
13 OUTPUT "Maximum value is ", Max
14 OUTPUT "Minimum value is ", Min
```

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|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16(a) | <b>One mark for any two correct lines</b><br><br><pre> DECLARE P : STRING P ← "The world" DECLARE Q : CHAR Q ← 'W' </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 16(b) | <b>One mark for each point (max four)</b> <ul style="list-style-type: none"> <li>converting P to upper case</li> <li>finding the length of P</li> <li>using a loop to check for position of Q</li> <li>using the string operation substring</li> <li>storing the loop counter in Position if the value is found</li> </ul> <p>For example:</p> <pre> P ← UCASE(P) Counter ← 1 Position ← 0 REPEAT     IF SUBSTRING(P, Counter, 1) = Q     THEN         Position ← Counter     ENDIF     Counter ← Counter + 1 UNTIL Position &lt;&gt; 0 OR Counter = LENGTH(P) </pre> |
| 16(c) | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| 17 | <b>One mark per mark point (max six)</b> <ul style="list-style-type: none"> <li>Declaration of appropriate string variable(s)</li> <li>Input of a line of text</li> <li>Correct use of LCASE</li> <li>Correct use of LENGTH</li> <li>Opening of at least <b>one</b> of the required text files using given names (Main.txt, Lowercase.txt)</li> <li>Storing of correct line of text to Main.txt</li> <li>Storing of correct lines to Lowercase.txt</li> <li>Closing of both text files</li> <li>Correct output</li> </ul> <p>For example:</p> <pre> DECLARE LineOfText : STRING DECLARE LowercaseText: STRING INPUT LineOfText OPENFILE Main.txt FOR WRITE WRITEFILE Main.txt, LineOfText CLOSEFILE Main.txt LowercaseText ← LCASE(LineOfText) OUTPUT LowercaseText, LENGTH(LineOfText) OPENFILE Lowercase.txt FOR WRITE WRITEFILE Lowercase.txt, LowercaseText CLOSEFILE Lowercase.txt </pre> |
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|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18(a) | <b>One mark per mark point, max four</b> <ul style="list-style-type: none"> <li>Line 01 / DECLARE People : ARRAY[1:50, 1:3] OF REAL should be DECLARE People : ARRAY[1:50, 1:3] OF STRING</li> <li>Line 10 / Count ← 100 should be Count ← 1</li> <li>Line 12 / CASE OF should be REPEAT</li> <li>Line 27 / UNTIL NOT Count should be UNTIL NOT Continue // UNTIL Continue = FALSE</li> </ul> <p>Correct algorithm:</p> <pre> 01 DECLARE People : ARRAY[1:50, 1:3] OF STRING 02 DECLARE Count : INTEGER 03 DECLARE Response : CHAR 04 DECLARE Continue : BOOLEAN 05 FOR I ← 1 TO 50 06     FOR J ← 1 TO 3 07         People[I, J] ← "" 08     NEXT J 09 NEXT I 10 Count ← 1 11 Continue ← TRUE 12 REPEAT 13     OUTPUT "Enter the last name" 14     INPUT People[Count, 1] 15     OUTPUT "Enter the first name" 16     INPUT People[Count, 2] 17     OUTPUT "Enter the city" 18     INPUT People[Count, 3] 19     OUTPUT "Do you want to enter another name (Y or N)?" 20     INPUT Response </pre> |
| 18(a) | <pre> 21     IF Response = 'N' 22         THEN 23             Continue ← FALSE 24         ELSE 25             Count ← Count + 1 26         ENDIF 27 UNTIL NOT Continue // UNTIL Response = 'N' </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 18(b) | <ul style="list-style-type: none"> <li>Use of appropriate loop</li> <li>Method to check array maximum not exceeded</li> <li>Method to check current / next array element not empty</li> <li>Output of all three array elements per array row (and no more)</li> </ul> <p>Example algorithm:</p> <pre> Count ← 1 WHILE Count &lt;= 50 AND People[Count, 1] &lt;&gt; "" DO     OUTPUT People[Count, 1]     OUTPUT People[Count, 2]     OUTPUT People[Count, 3]     Count ← Count + 1 ENDWHILE </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 18(c) | <b>One mark per mark point, max four</b><br><br>MP1 Declare/use a variable that is set to the maximum size of the array<br>MP2 ... at the start of the program<br>MP3 After line 18<br>MP4 ... check that the value of the counting variable is not greater than the array maximum variable<br>MP5 ... and if it is do not allow any more entries / set the value of Response to 'N' / add additional condition to UNTIL statement that checks if the counting variable is at maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |