

# Cambridge International AS & A Level

COMPUTER SCIENCE 9618/21

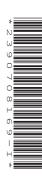
Paper 2 Fundamental Problem-solving and Programming Skills

October/November 2021

INSERT 2 hours

# **INFORMATION**

- This insert contains all the resources referred to in the questions.
- You may annotate this insert and use the blank spaces for planning. Do not write your answers on the insert.



# Note: An error occurs if a function call is not properly formed, or if the parameters are incorrect.

#### **STRING Functions**

LEFT (ThisString : STRING, x : INTEGER) RETURNS STRING returns leftmost x characters from ThisString

Example: LEFT ("ABCDEFGH", 3) returns "ABC"

RIGHT (ThisString: STRING, x: INTEGER) RETURNS STRING returns rightmost x characters from ThisString

Example: RIGHT ("ABCDEFGH", 3) returns "FGH"

MID (This String: STRING, x: INTEGER, y: INTEGER) RETURNS STRING returns a string of length y starting at position x from This String

Example: MID ("ABCDEFGH", 2, 3) returns "BCD"

LENGTH (ThisString: STRING) RETURNS INTEGER returns the integer value representing the length of ThisString

Example: LENGTH ("Happy Days") returns 10

LCASE (ThisChar: CHAR) RETURNS CHAR

returns the character value representing the lower case equivalent of ThisChar Alphabetic characters that are not upper case are unchanged.

Example: LCASE('W') returns 'w'

UCASE (ThisChar : CHAR) RETURNS CHAR

returns the character value representing the upper case equivalent of ThisChar Alphabetic characters that are not lower case are unchanged.

Example: UCASE('a') returns 'A'

TO\_UPPER(ThisString: STRING) RETURNS STRING returns a string formed by converting all characters of ThisString to upper case.

Example: TO UPPER ("Error 803") returns "ERROR 803"

TO\_LOWER (ThisString: STRING) RETURNS STRING returns a string formed by converting all characters of ThisString to lower case.

Example: TO LOWER ("JIM 803") returns "jim 803"

NUM\_TO\_STR(x : <data type1>) RETURNS <data type2>
returns a string representation of a numeric value.

Example: NUM TO STR(87.5) returns "87.5"

STR\_TO\_NUM(x : <data type1>) RETURNS <data type2> returns a numeric representation of a string.

Example: STR TO NUM("23.45") returns 23.45

IS\_NUM(ThisString : STRING) RETURNS BOOLEAN
returns the value TRUE if ThisString represents a valid numeric value.

Example 1: IS\_NUM("12.36") returns TRUE Example 2: IS\_NUM("-12.36") returns TRUE Example 3: IS\_NUM("12.3a") returns FALSE

ASC (ThisChar : CHAR) RETURNS INTEGER returns an integer value (the ASCII value) of ThisChar

Example: ASC ('A') returns 65

CHR (x : INTEGER) RETURNS CHAR returns the character whose integer value (the ASCII value) is x

Example: CHR (87) returns 'W'

# **NUMERIC Functions**

INT (x : REAL) RETURNS INTEGER

returns the integer part of x

Example: INT (27.5415) returns 27

RAND(x : INTEGER) RETURNS REAL

returns a real number in the range 0 to x (**not** inclusive of x).

Example: RAND (87) could return 35.43

## **OTHER Functions**

EOF(FileName: STRING) RETURNS BOOLEAN

returns TRUE if there are no more lines to be read from file FileName

Note: The function will generate an error if the file is not already open in READ mode.

Note: An error occurs if an operator with a value of an incorrect type is used.

## **OPERATORS**

&	Concatenates (joins) two strings  Example: "Summer" & " " & "Pudding" evaluates to "Summer Pudding"
AND	Performs a logical AND on two Boolean values  Example: TRUE AND FALSE evaluates to FALSE
OR	Performs a logical OR on two Boolean values  Example: TRUE OR FALSE evaluates to TRUE
NOT	Performs a logical NOT on a Boolean value  Example: NOT TRUE evaluates to FALSE
MOD	Finds the remainder when one number is divided by another Example: 10 MOD 3 evaluates to 1
DIV	Finds the quotient when one number is divided by another Example: 10 DIV 3 evaluates to 3

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