



Cambridge International AS & A Level

COMPUTER SCIENCE

9618/22

Paper 2 Fundamental Problem-solving and Programming Skills

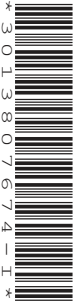
May/June 2021

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.



This document has **4** pages.

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

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
Characters that are not upper case alphabetic are returned unchanged

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

UCASE(ThisChar : CHAR) RETURNS CHAR
returns the character value representing the upper case equivalent of ThisChar
Characters that are not lower case alphabetic are returned 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 type>) RETURNS STRING
returns a string representation of a numeric value
Note: <data type> may be REAL or INTEGER

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

Note: <data type1> may be CHAR or STRING

Note: <data type2> may be REAL or INTEGER

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

Note: <data type> may be CHAR or STRING

Example: IS_NUM("12.36") returns TRUE

Example: IS_NUM("-12.36") returns TRUE

Example: 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

DATE Functions

Note: Date format is assumed to be DDMMYYYY unless otherwise stated.

DAY(ThisDate : DATE) RETURNS INTEGER

returns the current day number from ThisDate

Example: DAY(4/10/2003) returns 4

MONTH(ThisDate : DATE) RETURNS INTEGER

returns the current month number from ThisDate

Example: MONTH(4/10/2003) returns 10

YEAR(ThisDate : DATE) RETURNS INTEGER
returns the current year number from ThisDate

Example: YEAR(4/10/2003) returns 2003

DAYINDEX(ThisDate : DATE) RETURNS INTEGER
returns the current day index number from ThisDate where Sunday = 1, Monday = 2, Tuesday = 3 etc.

Example: DAYINDEX(12/05/2020) returns 3

SETDATE(Day, Month, Year : INTEGER) RETURNS DATE
returns a variable of type DATE

NOW() RETURNS DATE
returns the current date

OTHER Functions

EOF(FileName : STRING) RETURNS BOOLEAN
returns TRUE if there are no more lines to be read from file FileName

Note: This function will generate an ERROR if the file is not already open in READ mode

OPERATORS

&	Concatenates (joins) two strings Example: "Summer" & " " & "Pudding" evaluates to "Summer Pudding" Note: This operator may also be used to concatenate a character with a string
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

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

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