



# Cambridge International AS & A Level

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**COMPUTER SCIENCE**

**9618/23**

Paper 2 Fundamental Problem-solving and Programming Skills

**May/June 2021**

INSERT

**2 hours**

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## 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.



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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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