Date Datatype

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

1   (a) (i)   Complete the following table by giving the appropriate data type in each case.

Variable	Example data value	Data type
Name	"Catherine"	
Index	100	
Modified	FALSE	
Holiday	25/12/2020	

[4]

(b) The algorithm for function `Calculate()` contains the three pseudocode statements shown.

Describe the error in each statement or write 'no error' if the statement contains no error.

Assume any variables used are of the correct type for the given function.

Statement 1: `Index ← STR_TO_NUM(("27") + 2)`

Error ....

....

Statement 2: `Index ← STR_TO_NUM(MID("CPE1704TKS", 4, 2))`

Error ....

....

Statement 3: `IF MONTH(ThisDate) > '6' THEN`

Error ....

....

[3]

1(b)	One mark for correct description of:	3
	Error 1: Brackets mismatch // 2/value should be added after brackets/function // Addition between a string and a number is not valid // STR_TO_NUM / the function needs to be passed a string / not an integer	
	Error 2: No Error	
	Error 3: `MONTH()` returns an integer and this is being compared with a character/string // Integer cannot be compared to a string // 6 should not be in quotes	

(b) A different part of the program uses the variable `StartDate`.

Write pseudocode statements to declare `StartDate` **and** assign to it the date corresponding to 15/11/2005.

Declaration ....

Assignment ....

[3]

2(b)	One mark for declaration:	3
	`DECLARE StartDate : DATE`	
	One mark for each underlined part of assignment:	
	`StartDate ← SETDATE (15, 11, 2005)`	

2   A program stores a user's date of birth using a variable MyDOB of type DATE.

(a) Write a pseudocode statement, using a function from the **insert**, to assign the value corresponding to 17/11/2007 to MyDOB.

.... [1]

(b) MyDOB has been assigned a valid value representing the user's date of birth.

Write a pseudocode statement to calculate the number of months from the month of the user's birth until the end of the year and to assign this to the variable NumMonths.

For example, if MyDOB contains a value representing 02/07/2008, the value 5 would be assigned to NumMonths.

.... [2]

(c) The program will output the day of the week corresponding to MyDOB.

For example, given the date 22/06/2023, the program will output "Thursday".

An algorithm is required. An array will be used to store the names of the days of the week.

Define the array **and** describe the algorithm in **four** steps.

Do **not** use pseudocode statements in your answer.

Array definition ....

....

Step 1 ....

....

....

Step 2 ....

....

....

Step 3 ....

....

....

Step 4 ....

....

....
[6]

Question	Answer	Marks
2(a)	`MyDOB ← SETDATE(17, 11, 2007)`	1
2(b)	<u>NumMonths</u> ← <u>12 − MONTH(MyDOB)</u> One mark per underlined part	2

Question	Answer	Marks
2(c)	One mark per array definition bullet: • A (1D) array containing 7 elements • of type STRING One mark per Step: Step1: Assign value "Sunday" to first element, "Monday" to second element etc. Step2: Use the function `DAYINDEX()` to return / find the day number from `MyDoB` Step3: Use the returned value as the array index / to access the element that contains the name / string Step4: Output the element / name / string **Note: Max 2 for Array definition, Max 4 for steps**	6