Register No. :..... Name:.....

	College of Engineering Muttathara		
	Series Exam	CE(2024)	
Civil Engineering		Branch: CIVIL ENGINEERING	
Semester: Semester 1		Academic Year: 2024-25	
Course Code: UCEST105	L-T-P Credits: 3-0-2-0	Course Name: Algorithmic Thinking with Python	
Time: 1.5 hrs Hrs.	series 1	Date: 12/11/2023	Maximum Mark: 30

No.	Question	Mark
1	**PART A (ANSWER ALL QUESTIONS 4X3 =12 MARKS)**	
1.1	Name any four problem solving strategies?	1.0
1.2	While you are signing in to your google account, it shows the entered password is "WRONG". You tried again and again, remembering your password, and on the 10 th attempt, you succeed in logging into your account. The above process comes under which type of problem solving strategy.	1.0
1.3	Six glasses are in a row, the first three full of juice, the second three empty. By moving only one glass, can you arrange them so that empty and full glasses alternate?	1.0
2		
2.1	EVALUATE- PSEUDO 1 Start 2 READ(a,b,c) 3 d=a+b*c 4 PRINT(d) 5 Stop The above represents evaluating an expression, write down the algorithm for the same.	2.0

2.2	Give the functions of the following symbols in a Flowchart a.  b.  c.  d. 	1.0
3		
3.1	Identify the type of operators given in Table1 and Table 2? Table 1: ? Table 2: ?	1.0
3.2	 The above code snippet shows the command given in a terminal. What will be the output in the 3rd and 5th line and of which data type?	1.0

Operation	Operator
Addition	+
Subtraction	–
Multiplication	*
Division	/
Floor division	//
Remainder	%
Exponentiation	**

Operation	Operator
Equal to	==
Not equal to	!=
Greater than	>
Greater than or equal to	>=
Less than	<
Less than or equal to	<=

3.3	Evaluate the following expression stating the precedence of operators in python: 34 ** 2 * 12 + 6 -8	1.0
4		

4.1	`>>> # This is a long comment`
	`>>> # and it extends`
	`>>>  to multiple line`
	
	The above code is run in terminal, what will be the output?
		1.0

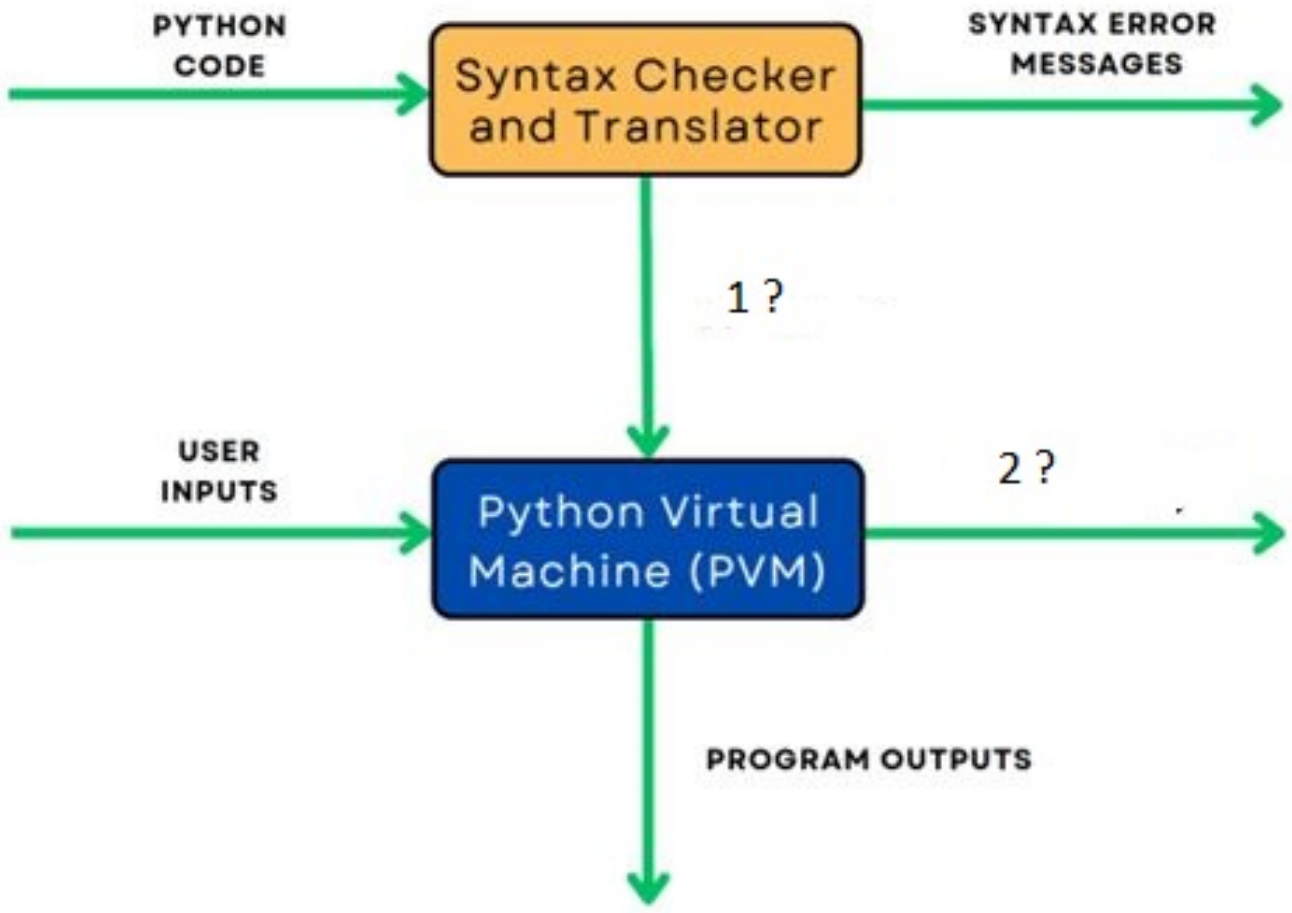
4.2	`length=int(input("Enter the length of the rectangle"))`
	`breadth=int(input("Enter the breadth of the rectangle"))`
	`perimeter=2*(length+breadth)`
	`print("Perimeter of the rectangle is",perimeter)`
	
	The above python code is run. ***" Write and show how the output window "*** be if you input length value with your roll number and breadth value with your age?
		2.0

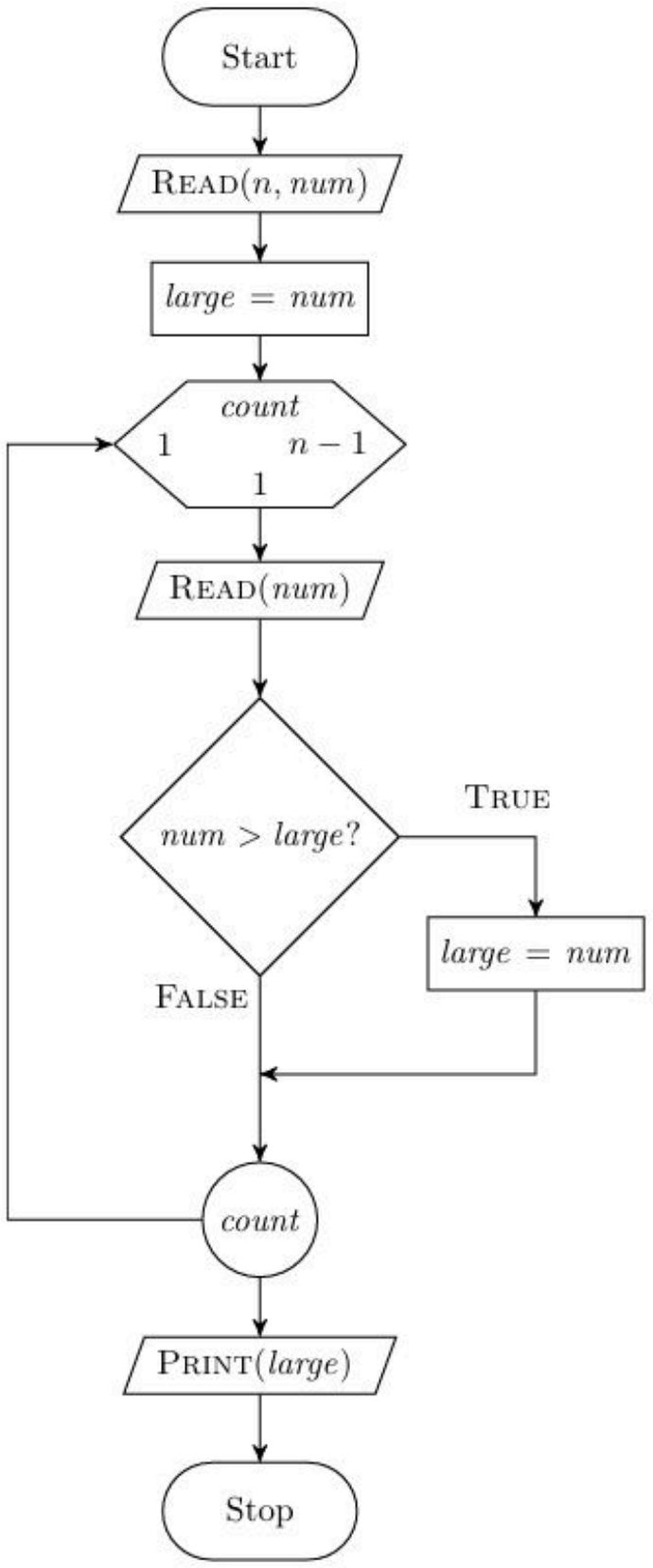
Section B (Answer any two full questions)		
Answer 1 out of 2 questions		
5		
5.1	a. Understand the problem b.Formulate a model for the solution c.Develop an algorithm d.Code the algorithm e.Test the program f..... The above steps are used in which process and write down the last step (step f....) in this process.	1.0
5.2	Rearrange the letters in the words new door to make one word.	2.0
5.3	Name the three types of loop constructs ? Which of these comes under definite iteration category?	2.0

5.4	There are two ways you can run your Python code: a. using the Python shell b.running as a standalone script i)Which among the above two ways will you choose to write a complex program? ii) A python program is saved with which extension? iii) the symbol >>> is known as.....? iv)Can we use the symbol '_' as a variable name?	2.0

5.5	Python supports the following data types:
	○ Number
	○String
	○List
	○Tuple
	○Set
	○Dictionary
	
	i) Name three type of Number or numeric data types?
	ii)Which will be the most appropriate data type to store your name?
	iii)
	line 1: >>>name=input()
	line 2: input
	line 3:>>>name
	line 4:
	The above lines are run in the the terminal (image given below). What will be shown in line 4?
	
	`>>> name=input()`
	`input`
	`>>> name`
	`'[redacted]'`
	`>>>`
		2.0

	OR	
6		

6.1	```#to find the circumference of a circle import math r=input("Enter the radius of the circle") perimeter=2*math.pi*r print("perimeter is", perimeter)``` i) Which is the module that is used in the above code and why? ii) Write down the output window if you input radius as 10?	2.0
6.2	Write a python program to display your name and roll number?	1.0
6.3	 What does the above diagram represent? What will 1 and 2 indicate in the above diagram?	2.0
6.4	print(" How old are you" ?) What will be the output of the above code?	2.0
6.5	Write a python code to find square root of 234?	2.0
	Answer 1 out of 2 questions	
7		

7.1	Flowchart shown represent solution to which problem? 	1.0
7.2	There are two major differences between while and repeat-until loop con structs: 1. In the while loop, the pseudocode continues to execute as long as the resultant of the condition is True; in the repeat-until loop, the looping process stops when the resultant of the condition becomes True. 2. In the while loop, the condition is tested at the beginning; in the repeat until loop, the condition is tested at the end. For this reason, the while loop is known as an entry controlled loop and the repeat-until loop is known as an exit controlled loop. **In the above two types of loops, in which type, instructions will be printed atleast once and why?**	2.0

7.3 Write down the **" python code format of for loop "** of each conditions in the table? — 3.0

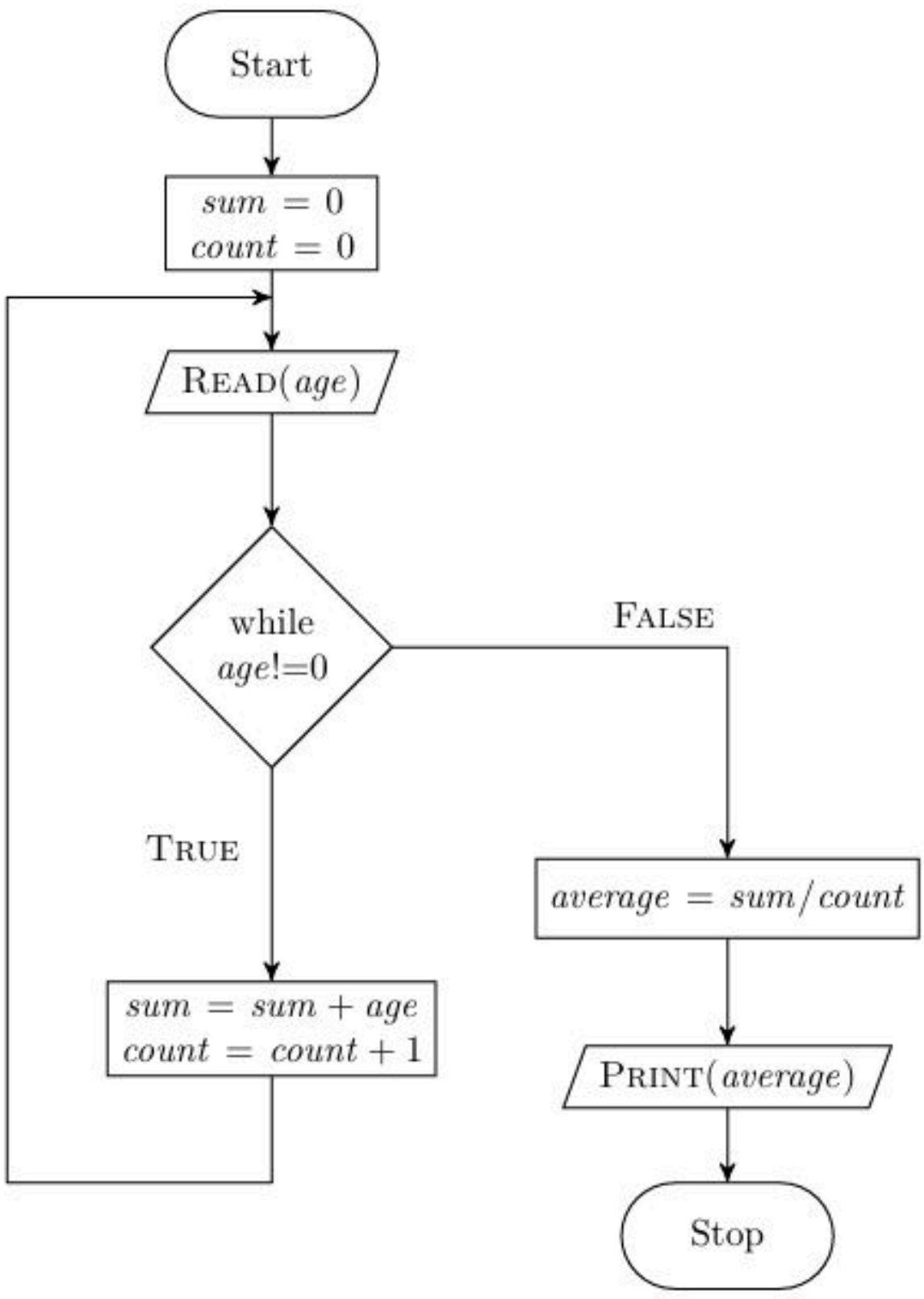
Loop construct	Description	Values taken by *var*
for *var* = 1 **to** 10	*var* gets incremented by 1 till it reaches 10	$1, 2, \cdots 9, 10$
for *var* = 10 **downto** 1	*var* gets decremented by 1 till it reaches 1	$10, 9, \cdots 2, 1$
for *var* = 2 **to** 20 **by** 2	*var* gets increased by 2 till it reaches 20	$2, 4, \cdots 18, 20$
for *var* = 20 **downto** 2 **by** 2	*var* gets decreased by 2 till it reaches 2	$20, 18, \cdots 4, 2$

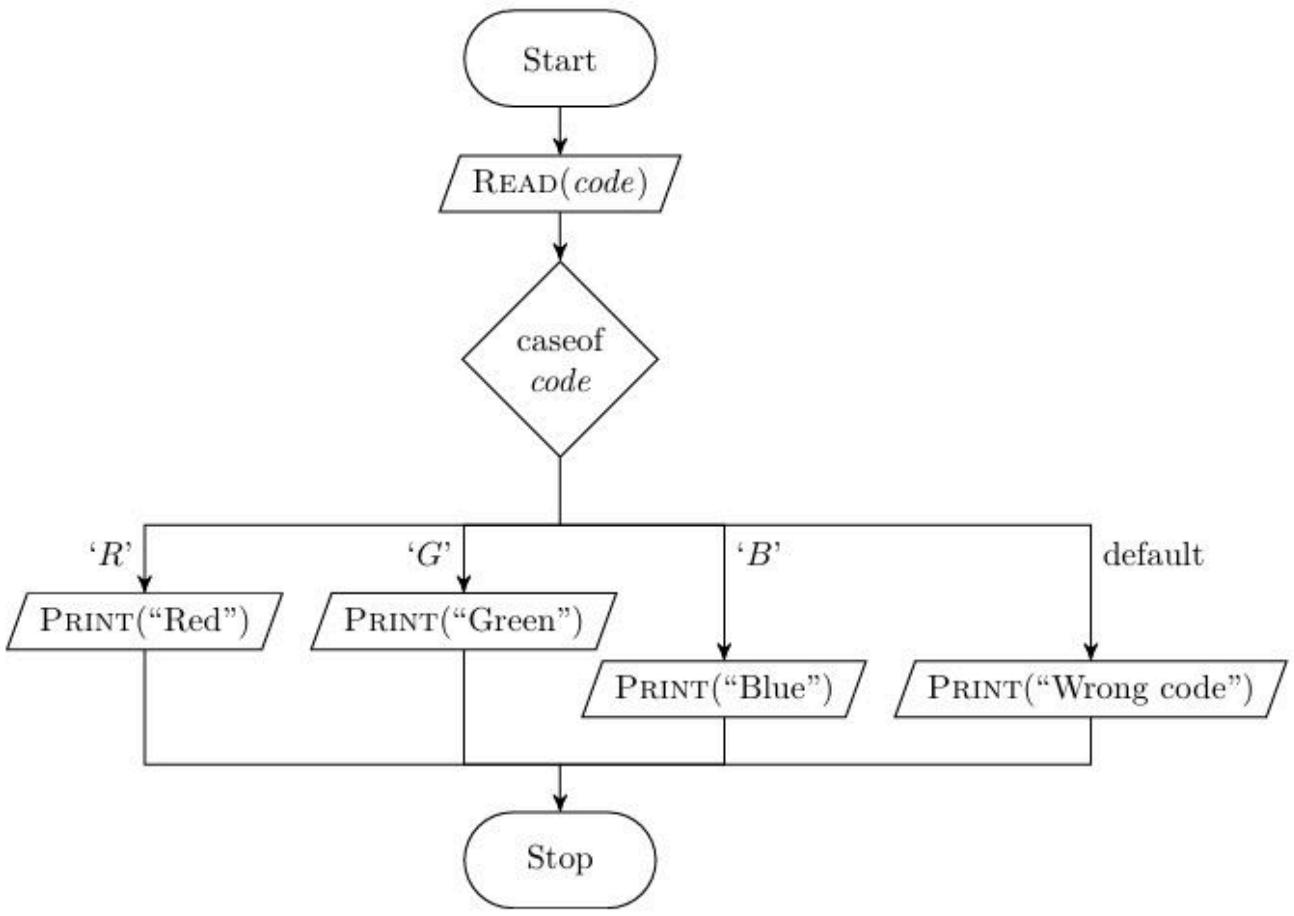
7.4 Draw the flowchart to find the volume of a hemisphere by inputting the radius? — 3.0

OR

8

8.1 What does the flowchart below represent? — 2.0



8.2	The pseudocode represents the solution to which problem? 1 Start 2 READ(n, num) 3 $large = num$ 4 **for** $count = 1$ **to** $n - 1$ 5 READ(num) 6 **if** ($num > large$) 7 $large = num$ 8 **endif** 9 **endfor** 10 PRINT($large$) 11 Stop	2.0
8.3	Write a python program to check whether the entered number is odd or even?	3.0
8.4	Write the pseudocode for the below flowchart?  	2.0