Sri Lanka Institute of Information Technology

B.Sc. Degree
in
Information Technology

Mid Examination
Year 1, Semester 1 (2015)

Computer Programming Techniques and Practices (N101)

Duration: 1 Hour

Instructions to Candidates:

- This is a closed book examination.
- This paper contains 6 questions on 6 pages without the cover page.
- Answer all questions on this paper itself.
- Read all questions before answering.
- The total marks obtainable for this examination is 100.

1) The following table lists computer programming languages. Complete the table by stating the generation and level. (15 marks)

Programming language	Generation	Level
Ruby		
Java		
C		
Assembly Language		
Machine Language		

2) State two differences between second generation and third generation programming languages. (6 Marks)

3) State three types of errors that can occur in a program and state how to identify these errors. (6 marks)

4) State two differences between an Interpreter and a compiler. (4 marks)

5) Read the following scenario and answer the questions a), b) and c).

A user enters a number. The program prints a pattern of numbers diagonally as follows. An example is given below for number 5.

Enter number : 5
Output

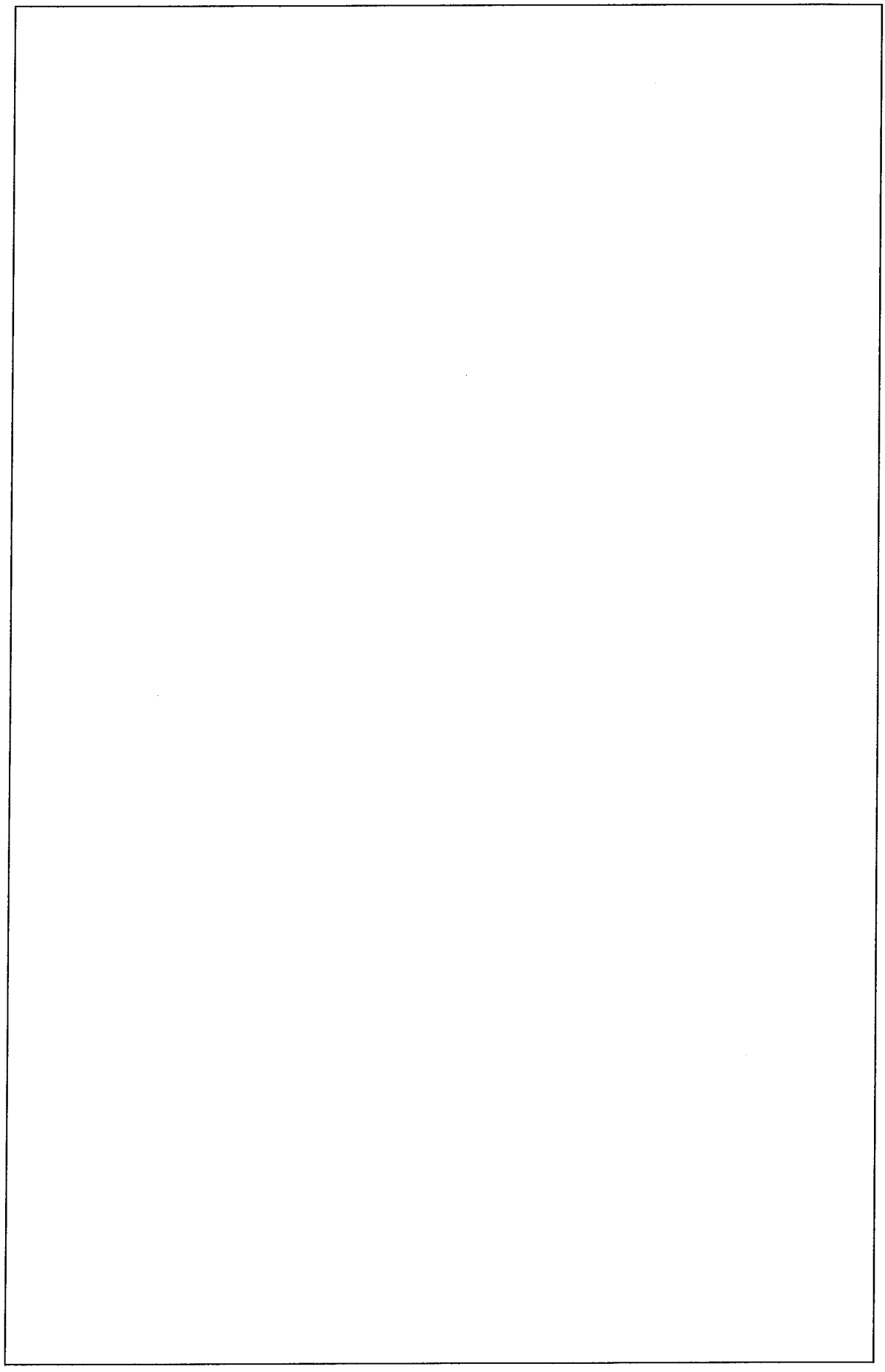
```
        1
      2
    3
  4
5
```

a). Draw the defining diagram for the above scenario. (5 marks)

b). Write the solution algorithm for the above scenario. (20 marks)

c). Desk check the solution algorithm for the following test case. (15 marks)

	Test case
n	3
output	1 2 3



6) A program asks the user to enter a set of positive numbers, one at a time. She enters 0 to indicate that she has no more numbers to enter. The program prints the largest number entered.
Sarah has written the following program to implement the above scenario.

```
Integer a, b
Get a
WHILE (a != 0)
          IF (a < b) THEN
               b = a
          END IF
          Get a
END WHILE
Display 'Largest number entered is ' a
```

a). Desk check the above algorithm using the following test case. Does the solution give the expected result? List the issues you identified. (14 marks)

Test case	
Input numbers	3 2 6 0
Expected Output	Largest number entered is 6

b). Improve the above solution and write the corrected pseudo-code to implement the above program. (15 marks)