University of Vavuniya

First Examination in Information Technology - 2019

First Semester-December 2020/January 2021

Held on October/November 2021

IT1134 Fundamentals of Programming (Theory)

Online Examination

Question-Set 1 of 2

- Time Allowed : **30 Minutes**
- This is a closed-book examination.

---

1. (a) Describe the characteristics of a computer program. [10%]

   (b) Describe **run-time error** , **logical error** and **syntax error** in programming with aid of suitable examples. [30%]

   (c) Describe **implicit** and **explicit** type of conversion in C++ with aid of examples. [20%]

   (d) Write an algorithm to read ten numbers and find the smallest among them: [15%]

      i. Draw a flowchart for this problem. [10%]

      ii. Write C++ statements for this task with sample input and output. [15%]

University of Vavuniya

First Examination in Information Technology - 2019

First Semester-December 2020/January 2021

Held on October/November 2021

IT1134 Fundamentals of Programming (Theory)

Online Examination

Question-Set 2 of 2

- Time Allowed : **30 Minutes**
- Answer **only one** of the **two** Questions
- This is a closed-book examination.

---

2. (a) Write array declarations, including initialization, for each of the following tasks: [20%]

   i. A list of 10 integer marks: 89, 75, 82, 93, 78, 95, 81, 88, 77, and 82.

   ii. A list of 15 character codes, with the first seven codes being *f*, *j*, *m*, *q*, *t*, *w*, and *z*.

   (b) State clearly the concept of scope of an identifier with aid of suitable examples. [15%]

   (c) Describe the principal reason for passing arguments by reference. [10%]

   (d) Write a function declaration and a function definition for a function that takes one argument of type **int** and one argument of type **double**, and that returns a value of type **double** that is the average of the two arguments. [25%]

   (e) Write an iterative and recursive functions to display **Fibonacci** series of first ten numbers. [30%]

3. (a) Explain how **structures** are different from **arrays** in programming. [20%]

(b) Write C++ statements to accomplish each of the following tasks:

i. Define a struct, **UniStudent**, to store the following data about a Student: **FirstName(String)**, **LastName (String)**, **RegistrationNo(String)**, **YearOfStudy(int)**, and the **Course(String)**. [20%]

ii. Declare a **UniStudent** variable and store the following information:

First Name: Vivekanandan,

Last Name: Angayya,

Registration No: 2020IT01,

YearOfStudy: 1

Course: IT. [10%]

iii. Write a function to print **UniStudent** information. [15%]

(c) Consider the following C++ code:

```
double salary = 78000;
double raise;
try
{ cout << "Enter the raise:  ";
cin >> raise;
cout << endl;
if ( raise < 0.0)
throw raise;
cout << "Salary increase:  $ "<< salary * raise / 100 << endl; }
cout << "Exiting the try block." << endl;
catch
{
cout << "Negative raise:  " << x << endl;
}
```

i. Find errors, if any, in the above code and provide the correct code. [15%]

ii. Find the output if the inputs are **5** and **-4**, after the correction of the code. [20%]