THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

AUGUST – DECEMBER 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

DIT 004: INTRODUCTION TO PROGRAMMING TECHNOLOGIES

Date: DECEMBER 2018	Duration: 2 Hours
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1. a) Using C++ Programming language, write a program that does summation of two integers prompting for input from the keyboard and representing the results on the screen as an output. **(4 Marks)**

b) Give four reasons why programming is important. **(4 Marks)**

c) Write a C++ Programs that evaluates between two numbers and displays the largest number. The first number is i=22 and second number is j=34. **(3 Marks)**

d) Explain the meaning of the following terms as used in computer Programming **(3 Marks)**

   i) Writing Program
   ii) Compiling Program
   iii) Executing Program

e) What would be the output of the following C++ program? **(3 Marks)**

```cpp
#include <iostream>
using namespace std;
int main ()
{
int n;
cout << "Enter number > ";
cin >> n;
while (n>0) {
```

ISO 9001:2008 Certified by the Kenya Bureau of Standards

```cpp
       cout << n << ", ";
       --n;
       }
    cout << "Deal Done!\n";
    return 0;
    }
```

f) Explain how a for loop differ from a while loop.   **(3 Marks)**

g) What is an Array? Give an example of array in C++ Programming **(4 Marks)**

h) Giving two examples explain what is initialization of variables?   **(6 Marks)**

Q2.   a)   What is logical error? Give an example for each in C++programming
                                                                 (3 Marks)

      b) Explain how repetition can be achieved in Programming.   **(2 Marks)**

      c) Distinguish between local variables and global variables as used in Computer
         programming   **(4 Marks)**

             i)   Write a C++ program to initialize a 10 element integer array n to
                  zeros and print the array in a tabular format.   **(4 Marks)**

             ii) Explain what are comments and how they are done in C++ giving
                  atleast one example of a comment   **(4 marks)**

             iii) What are conditional Statements?   **(3 Marks)**

Q3.   a) How do Semantic Errors occur in the written code? Give an example of a
         semantic error.   **(4 Marks)**

      b) Explain your understanding of syntax error. Give at least two examples of
         syntax errors.   **(4 Marks)**

      c)   Explain these two commands as used in C++ Programming.   **(4 Marks)**
                  i) Std::cout<<
                  ii) Std::cin>>

      d) Giving examples explain two data types used in C++ Programming?
                                  (4 Marks)
      e) What is displayed when this code is executed?   **(4 Marks)**
            for (int i = 1; i <= 10; i++)
                  std::cout<<(i * i);

Q4. a) Explain the meaning of the following terms as used in Computer
Programming **(8 Marks)**
      i) Variables
      ii) Source code
      iii) String
      iv) Execution

    b) State and Explain the Different Languages Used in Computer Programming.
Give an example in each category. **(8Marks)**

    c) What will be the output of this code? **(4 Marks)**

```
# include <iostream>
# include <string>
using namespace std;
int main( )
{
  string DIT 004 = "this is a programming class";
        std::cout <<DIT 004;
  return 0;
}
```

Q5. a) Programs regardless of the languages they are written in contain two
fundamental parts. Clearly state and explain these Fundamental parts.
(4Marks)

    b) Explain the two major categories of programming levels **(4 Marks)**

    c) Write a program that outputs the square root of 900 and the square root of 9
when run **(4 Marks)**
    .
    d) Explain and give two examples of how computer programming can be used to
solve day to day problems in organizations **(4 Marks)**

    e) Write simple C++ code to output the following. **(4 Marks)**

        **i. Welcome to C++ Programming. Programming solves many day to
day problems**

END