THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

MAY – JULY 2016 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

REGULAR PROGRAMME

DIT 004: INTRODUCTION TO PROGRAMMING TECHNOLOGIES

Date: JULY 2016	Duration: 2 Hours
INSTRUCTIONS: Answer Question ONE and ANY OTHER TWO Questions	

Q1. a) State and explain the different languages used in computer programming.
(6 marks)

b) What will be the output of these code
```
int  j
for(j = 1; j<=20; j ++) {
std: cout<< ("%1od", 1+(rand()%6))
if(j%5 = =0) {
std: : cout<< ("\n");
}
}
```
(6 marks)

c) Programs regardless of the languages they are written in contain two fundamental parts. Clearly explain these fundamental parts. **(4 marks)**

d) Discuss the importance of computer programming. **(4 marks)**

e) Write simple c++ code to outpit the following.

a) I love programming. Will keep programming

b) "Programming is simple especially using high level programming languages" **(4 marks)**

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f) Explain the meaning of the following terms as used in computer programming
   a) Variables
   b) Source code
   c) Execution   **(6 marks)**

Q2. a) Distinguish between instance variables and global variables as used in computer programming.   **(4 marks)**

b) Write a c++ program to initialize a 10 element array n to zeros and print the array in a tabular format.   **(4 marks)**

c) State and explain any TWO roles that computer programming plays.
                                                              (4 marks)

d) Explain how comments are done in c++ and give an example of a comment.   **(4 marks)**

e) Explain how repetition can be achieved in programming.   **(2 marks)**

f) What are conditional statements.   **(2 marks)**

Q3. a) Explain the following terms as used in computer programming
   a) Writing program
   b) Compiling program
   c) Executing program   **(6 marks)**

b) Explain what is a computer and how it works.   **(4 marks)**

c) What is logical error?   **(3 marks)**

d) Explan how a for loop is different from a while loop.   **(3 marks)**

e) What is an array?   **(4 marks)**

Q4. a) How do sematic errors occur in the written code?   **(3 marks)**

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

c) What is the distinction in terms of display output between the following two lines of code
   i   Print f
   ii   Scan f   **(4 marks)**

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d) What is the output of the following code
```
# include <10stream>
Int main(int argc, char ** argv) {
Int x = 2;
Int y = 8;
Std: : cout<<x + y;
Int miles, yards;
Float kilometers;
Yards = 400;
Miles = 90;
Kilometers = 1.609* (yards + miles);
Std: : cout <<"%dmiles, % d yards");
System("PAUSE");
Return 0;
}
```
(6 marks)

e) What is displayed when this code is executed
```
For(int=;, i<=10; 1 ++)
Std: :cout<<(i x i)
```
(3 marks)

Q5. a) Describe the output of the following code
```
Int main ( )
{
Int biology, physics, mathematics, cre, history, chemistry, geography;
Float average;
Biology = 67;
Physics = 80;
Mathematics = 90;
Cre = 92;
History = 68;
Chemistry = 80;
Geography = 95;
Average = (biology+ physics + mathematics + cre + history + chemistry+ geography) / 7;
Std: : cout <<(average);
Return 0;
}
```
(5 marks)

b) Give TWO examples of high level programming languages. **(4 marks)**

c) Write a program that outputs the square root of 900 ad the square root of a when run. **(4 marks)**

d) Explain and give TWO examples of how computer programming can e used to solve day to day problems in organizations. **(4 marks)**

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e)   Give examples ad uses of three data type   **(3 marks)**

END