THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

MAY – JULY 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

PART TIME   PROGRAMME

CMT 211: OBJECT ORIENTED PROGRAMMING I

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

Q1.   a)   Fill in the blanks with appropriate word/words

i) _____is an alias name given to a variable**.**   **(1 mark)**

ii) _____is a special member function that initializes the member of a class.   **(1 mark)**

iii) The process of deriving one class from more than one base class is called____   **(1 mark)**

iv) A_____function can accept avalue of any type   **(1mark)**

b) Define the term class**.**   **(2 marks)**

c) Explain the concept of constructor with default arguments.   **(2 marks)**

d) What is inheritance? Explain **TWO** types of inheritance.   **(4 marks)**

e) With an example explain the while loop construct in repetitive statement
                                                                  (4 marks)

f)   Write a C++ program using if statement.   **(4 marks)**

g) Using an example, illustrate the concept of polymorphism in C++.
                                                                  (2 marks)

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h) Describe **THREE** elements used in exception handling. **(3 marks)**

i) Using examples and rules, explain the concept of destructor in C++.
(5 marks)

Q2. a) Using a suitable illustrative diagram, describe the process followed
While developing a program in C++ language**. **(5 marks)**

b) Evaluate **THREE** class access modifiers you use to access a member
function**. **(3 marks)**

c) State the applications of object oriented languages. **(2 marks)**

d) Discuss **FOUR** concepts of object oriented programming language **(8 marks)**

e) Describe the concept of operator overloading **(2 marks)**

Q3. a) Define the following terms as used in programming:
       i)   Data abstraction **(2 marks)**
       ii)   Inline function **(2 marks)**
       iii)   Encapsulation **(2 marks)**

b) State **THREE** features of constructor. **(3 marks)**

c) Explain **THREE** common types of errors during program execution. **(6 marks)**

d) Write a C++ program that multiplies four integers explicitly. **(5 marks)**

Q4. a) Explain the **THREE** types of constructors. **(6 marks)**

b) Below is a program code, identify the errors and rewrite the code. **(5 marks)**
```
int main()
{
int n i;
cout<< "Enter a positive integer: ;
cin>> n
cout<Factors of " << n <<  are: " << endl;
for(i = 1; i <= n; ++i)
if(n % i == 0)
cout<< i <<
return 0
```
c) Differentiate between object oriented language and procedural language**.**
(4 marks)

d) Evaluate **FIVE** storage classes used in defining variable life time.
(5 marks)

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Q5.   a) Explain **FOUR** types of operators in C++ giving an example of each.
                                                                                    (8 marks)

b) Highlight **FOUR** areas in real time environment where C++ can be applied.
                                                                                    (4 marks)

a) Briefly explain the importance of encapsulation in programming**.**   **(3 marks)**

b) Justify the importance of Unified modelling language.   **(3 marks)**

END