The Co-operative University of Kenya

END OF SEMESTER EXAMINATION AUGUST -2018

EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

UNIT CODE: CMBT 1104

UNIT TITLE: OBJECT ORIENTED PROGRAMMING

DATE: 27ᵀᴴ AUGUST, 2018   **TIME: 9:00 AM – 11:00 AM**

INSTRUCTIONS:
* Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

a) Explain what the following statements do given that s1,s2,s3,s4,s5,and s6 have type char[]
   (i)   Strcpy (s1,s2)
   (ii)   Strcmp (s3,s4)
   (iii)   Strcat(s5,s6)   (6 marks)

b) Write declarations statements for the following
   (i)   A pointer to adouble
   (ii)   A one dimensional array of four integers
   (iii)   A dynamic array of 20 floats   (4 marks)

c) Write a C++ program that prompts a user to enter an integer value and displays to the user
   whether the value entered is an odd or an even number   (5 marks)

a) Describe the flow control statements below
   (i)   iteration
   (ii)   jump
   (iii)   Selection   (6 marks)

d) Write a program that displays the grade attained by a student in a unit given the marks she
   scores. The grading should be based on the table below.   (6 marks)

10-39	E
40-49	D
50-59	C
60-69	B
70-100	A

e) Explain why C++ is an object oriented programming language   (3 marks)

QUESTION TWO
a) Differentiate between pointers and arrays   (4 marks)
b) Write a program that changes the phrase below to title case
   "all animals are equal" so that it displays "All Animals Are Equal" (6 marks)
c) Describe the effect each of the following types of inheritance to acquired members

i) Private inheritance
ii) Public inheritance
iii) Protected inheritance (6 marks)
d) Differentiate between continue and break statements (4marks)

QUESTION THREE
a) Briefly explain the following terms
i) Constructor
ii) Destructor
iii) Abstract class (6 marks)
b) Create a class called Rectangle with the following properties
i) Two instance variables length and width
ii) A constructor to initialize the instance variables
iii) A destructor
iv) Member functions called area that returns the area of the rectangle (14 marks)

QUESTION FOUR
a) Distinguish between a base class and a derived class (2 marks)
b) Write a program that outputs the sum, product ,quotient and reminder of two integers that are input through the keyboard (6 marks)
c) Indicate whether the variable names used in the declaration statements below are valid or not. If not explain:
i) int 4you
ii) float distance (4 marks)
d) write a C++ program that displays the pattern below
1
2   2
3   3   6
4   4   8   12 (8 marks)

QUESTION FIVE
a) Explain between global variables and local variables (2 marks)
b) Write a program in a function that computes and returns the product of two integers
(3 marks)
c) Using two examples, explain abstract data types used in C++ (4 marks)
d) Write a program that allows the user to enter marks for 10 students in a certain class and then displays the score for each student, the sum and the average mark for the class
(6 marks)
e) Using an example, explain an initialized array (2 marks)
f) Describe the meaning of the statement 'using namespace std' as used in writing programs
(3 marks)