



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF COMMERCE

BMS 201: COMPUTER PROGRAMMING

DATE: Tuesday, 16th May, 2017

TIME: 2.00 p.m. - 4.00 p.m.

INSTRUCTIONS:

Answer question **ONE** and any other **TWO** questions.

QUESTION ONE (30 MARKS)

- a) Briefly explain the basic operations of a computer. (5 marks)
- b) Define computer programming. (2 marks)
- c) Define an algorithm. (2 marks)
- d) Define the following terms as used in programming.
i) Linker
ii) Compiler
iii) Interpreter
iv) Assembler (4 marks)
- e) Define the following data types as used in C++ and give an examples
i) Char
ii) Short int
iii) Int
iv) Long Integer
v) Bool
- f) Using an example, show the difference between Global variables and local variables. (3 marks)
- g) Consider the program below

```
//my first program in c++
```

```

#include<iostream.h>
Int main()
{
count <<"Hello world"
return 0;
}

```

- Discuss the parts of the above C++ program (5 marks)
- h) Define a function and mention its constituent parts. (4 marks)

QUESTION TWO (20 MARKS)

- a) In a function, the arguments may be passed to the function by value. Arguments can also be passed by reference. Write a C++ program to demonstrate how this can be achieved. (5 marks)
- b) i) Define overloading of a function. (1 mark)
ii) Using a C++ program demonstrate the concept of overloading. (4 marks)
- c) i) Define recursion (1 mark)
ii) Write a program in C++ to find the factorial of a number using recursion. (5 marks)
- d) i) Define prototyping in functions. (1 mark)
ii) Write a program to demonstrate the concept of prototyping. (3 marks)

QUESTION THREE (20 MARKS)

- a) Briefly discuss the following operators: (5 marks)
- i) Arithmetic operators
 - ii) Relational operators
 - iii) Logical operators
 - iv) Bitwise operators
 - v) Conditional operator
- b) i) Define an array (2 marks)
ii) Write a program in to find the largest and smallest elements of an array. (10 marks)
- c) Show the storage of a two-dimensional array in memory with the help of a diagram. (3 marks)

QUESTION FOUR (20 MARKS)

- a) State five characteristics of a good programming language (5 marks)
- b) Explain the meaning of the following escape sequence
- i) \b
 - ii) \n
 - iii) \v
 - iv) \f
 - v) \t

(5 marks)

QUESTION FIVE (20 MARKS)

- a) There exists three types of control structures in programming. Discuss them briefly. (7 marks)
- b) A continue statement causes the program to skip the rest of the loop in the current iteration as if the end of the statement block had been reached. Write a C++ program to demonstrate this. (3 marks)
- c) Discuss the advantages and disadvantages of high level language and state four high level languages. (5 marks)
- d) The programs that translate high-level language to machine language are called? (1 mark)
- e) The _____ language was developed by Wirth for teaching structured programming in University. (1 mark)
- f) In a C system, a _____ program executes before the compilers translation phase begins. (1 mark)
- g) The _____ program translates the executable image of a C++ program from disk to memory. (1 mark)
- h) The _____ program combines the output of the compiler's with various library functions to produce an executable image. (1 mark)