MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR

SCHOOL OF SCIENCE AND INFORMATION SCIENCES
UNIVERSITY EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE (STATISTICS)
FOURTH YEAR REGULAR EXAMINATION

COURSE CODE: COM 400
COURSE TITLE: COMPUTER PROGRAMMING II

DATE: 23/04/2019 TIME: 8:30 – 10.30 A.M

INSTRUCTIONS

1. Answer Question ONE and any other TWO Questions From Section II
2. Question 1 is compulsory.
3. Time 2HRS.
4. ***Mobile phone are not allowed in exam room***.

Section I, Compulsory (30 marks)

A) Write a single C++ statement to accomplish each of the following:

a) Declare the variables *c*, *thisIsAVariable*, *q76354* and *number* to be of type int (in one statement).
[2 marks]

b) Prompt the user to enter an integer. End your prompting message with a colon (:) followed by a space. **[2 marks]**

c) Read an integer from the user at the keyboard and store it in integer variable age.
[2 marks]

d) Print the message "This is a C++ program" on one line.
[2 marks]

e) Print the message "This is a C++ program". Separate each word from the next by a tab.
[2 marks]

B) Write code segment of a c++ program to declare the variables x, y, z and result to be of type int (in separate statements) and initialize each to 0.

[4 marks]

C) Write a complete C++program that calculates and displays the sum of three integers. Add comments to the code where appropriate. Your program must prompt a user to enter three integers of the user's choice.

[6 marks]

D) Write code segment (part program) to determine whether the value of the variable count is less than 10. If it is, print "Count is less than 10."

[2 marks]

E) Write a C++ statement to declare variable *var* to be of type *long* and initialize it to 10.

[2 marks]

F) Identify and correct the errors in each of the following: **[6 marks]**

a. a) while (c <= 5) (product *= c; ++c;)
b. cout >> value;
c. if (i == 1) cout << "A" << endl; cout << "B" << endl; else; cout << "c" << endl;

SECTION II –CHOOSE ANY TWO QUESTIONS

Question Two (20 Marks)

G) Read the program below and use it to answer the following questions.

i. Write down the output of the program exactly how it appears when the program is run?
[**8 marks]**

ii. Write down the comments you would add to explain what the lines, 5, 9, 10 and 11 determine.

[12 marks]

```
1.  #include <iostream>
2.  using namespace std;
3.  int main()
4.  {
5.  unsigned int y = 0;
6.  unsigned int x = 1;
7.  unsigned int total = 0;
8.   while ( x <= 10 ) // loop 10 times
9.  {   14     y = x * x;
10.    cout << y << endl;
11. total += y;
12.     ++x; // increment counter x 1
13.  } // end while
14.  cout << "Total is " << total << endl; // display result
15. } // end main
```

Question Three (20 Marks)

(a) Write a complete C++program that reads the base and height of a right triangle from a user, then calculates and prints its area.

Tip: area of a triangle is given by *½*base*height.*

[12 marks]

(b) Declare a class called *Hello* with one function called *sayhello* whose access specifier is public. Use *sayhello* in the main program to print the following output **'Hello World'**

[8 marks]

Question Four (20 Marks)

(a) Write a complete C++ program to add any two integers. Declare functions add() to add integers and displaysum() to give output of the sum in main() function.

(i) Function declarations. **[6 marks]**
(ii) Correct main program. **[8 marks]**
(iii) Function definitions. **[6 marks**]

//END