



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 $\frac{1}{2} * \text{base} * \text{height}$. **[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