



**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER**

**SCHOOL OF SCIENCE & INFORMATION SCIENCE
B SC. IN COMPUTER SCIENCE**

**COURSE CODE: COM 2103
COURSE TITLE: OBJECT ORIENTED
PROGRAMMING I**

DATE: 6TH DECEMBER 2018

TIME: 0830 – 1030HRS

INSTRUCTIONS

- Answer Question ONE and any other TWO Questions From Section II
- Question 1 is compulsory.
- Time 2HRS.
- ***SWITCH OFF*** your mobile phone.

SECTION I-COMPULSORY

- 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

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

- i. What does this program print? **[8 marks]**
- ii. Write down the comments you would add to explain what the lines, 5, 9 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

A) Write a complete C++ program that reads the base and height of a right triangle from a user, then determines calculates and prints its area. Tip: area of a triangle is given by $\frac{1}{2} * base * height$. **[10 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'** **[10 marks]**

Question Four

(A) **Write a complete C++** program to add any two integers. Make a function `add()` to add integers and display sum in `main()` function.

- a. Function declarations. **[6 marks]**
- b. Correct main program. **[8 marks]**
- c. Function definition. **[6 marks]**

//END