Department of Computer Science

Ilishan Remo, Ogun State, Nigeria

2013/2014 2nd Semester Mid-Semester Examination

COSC102 –Introduction to Programming in C++

Class: CIS/CS/CT

Date/Time: [redacted]

Venue:

Instructions: Answer ALL

Examiners: Akande, Bola; Omotunde, A.A.; Seton, Rotimi

Time Allowed: 60 Minutes

SECTION A – MULTIPLE CHOICE

1. Characteristics of C++ Programming Language include the following **except**
   a. Object Oriented Paradigm
   b. Case Insensitivity
   c. Portability
   d. Speed
2. A token, a string of one or more character which is significant to the compiler, includes all **except**
   a. Identifier
   b. Operators
   c. Literals
   d. Black Space
3. cout << is the syntax for _____ data.
   a. Identifying
   b. Outputting
   c. Accepting
   d. Processing
4. using namespace std; for accepting data from users could also be done in the body of a program by
   a. cin<<::std
   b. std::cin<<
   c. std::cin>>
   d. cin>>::std
5. An expression is the smallest unit that does something while statement is an equation that has value
   a. True
   b. False
6. These are all types of constants except
   a. Literal Constant
   b. Defined Constant
   c. Declared Constant
   d. Symbolic Constant
7. The bit width and the unsigned range for an integer are
   a. 2 bytes; 0 to 255
   b. 4 bytes; -2147483648 to 2147483648
   c. 4 bytes; 0 to 4294967295
   d. 8 bytes; 0 to 4294967295
8. A variable is a named memory location which can be given to a value or an expression
   a. True
   b. False
9. A(n)_____ provides many tools that support the software development process, such as editors for writing and editing programs, debuggers for locating logic errors in programs, and many other features.
10. C++ programs normally go through six phases--- _____, _____, _____, _____, _____, and _____.

SECTION B

1. Write a program that inputs three integers from the keyboard and prints the sum, average, product, smallest and largest of these numbers. The screen dialog should appear as follows when the program is run:

   Input three different integers: 13 27 14
   Sum is 54
   Average is 18
   Product is 4914
   Smallest is 13
   Largest is 27

   NOTE: These numbers change depending on user input

2. Write a program that calculates the squares and cubes of the integers from 1 to 10. **Use proper escape sequence** to print the following neatly formatted table of values:

integer	square	cube
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125
6	36	216
7	49	343
8	64	512
9	81	729
10	100	1000

3. Write a program that makes use of ALL of the following
   a. %, /, +=,*=, ++variable, variable++, ++variable, variable--, !=, ==, =
4. Write a program that prompts users for *principal, interest rate, & time* to calculate simple interest and compound interest.
5. Write a program that dynamically accepts the elements of an array as inputs from users
   a. For array size i (i is determined by the user)
   b. For array size 10

SECTION C: Attempt all

1. Rewrite the following code as you would expect a successful compilation

```
//Program to compute area of a circle
#include<stdio.h>
#define PIE 3.142;
float area (float radius) //function prototype or declaration
int main()
{
  float radius;
  printf("Input the radius %d " ) ;
  scanf("%d", radius);
  printf("Area is %f ", area(radius));
}
float area(float r);   //function definition
{
  int circle;
  circle=PIE*radius*radius;
  return circle;
}
```

2.

```
//Consider the following program snippnet
:
:
if(hungry==yes)
{
        if(choice==rice)
        {
                printf("Have a plate of rice");
        else
                printf("Wait for beans");
}
else
     printf("Have a bottle of ginger-drink");
}
```

i. What will be the output if the first "if" evaluates as false?
ii. What will be the output if the second "if" evaluates to be true?
iii. What will be the output if the second "if" evaluates to be false?