Course Title: Computer Programming II   **Course Code:** CSC 221 **Credit Units:** (3)
Time allowed: 3hrs **Instruction:** Answer Four (4) Questions Only   **Date:** 27/08/2018

Q1. Give brief explanations on the following terms as they relate to problem solving on the computer
   a.   The CPU and the role it play in a computer
   b.   An asynchronous event with some examples
   c.   A compiler and an interpreter
   d.   High-level languages and machine language.
   e.   A subroutine

Q2
   a.   If you have the source code for a Java program, and you want to run that program, you will need both a *compiler* and an *interpreter*. What does the Java compiler do, and what does the Java interpreter do?
   b.   What is an object in a typical object-oriented programming language?
   c.   Mention and explain fully four different ideas associated with variables in Java.
   d.   Discuss in technical terms what makes a programming language such as Java to be classified as a "platform-independent language."
   e.   Show the exact output that would be produced by the following main() routine:

```
public static void main(String[] args) {
int N;
N = 1;
while (N <= 32) {
N = 2 * N;
System.out.println(N);
}
}
```

Q3
   a.   What does the computer do when it executes a variable declaration statement? Give an example.
   b.   Give the meaning of each of the following Java operators: ++, &&, and !=
   c.   Explain what is meant by an *assignment statement,* and give an example.
   d.   In Java, classes have two fundamentally different purposes. What are they?
   e.   What does it mean to *prime* a loop?

Q4
   a.   Write a for loop that will print out all the multiples of 3 from 3 to 36.
   b.   Complete the following main() routine so that it will ask the user to enter an integer, read the user's response, and tell the user whether the number entered is even or odd. (Recall that an integer n is even if n % 2 == 0.)

```
public static void main(String[] args)
{
// complete the body of this subroutine!
}
```

Q5 Suppose that s1 and s2 are variables of type String, whose values are expected to be string representations of values of type int. Write a code segment that will compute and print the integer sum of those values, or will print an error message if the values cannot successfully be converted into integers. (Use a try..catch statement.)

Q6. Write a method with the signature: public void mmm(int n), with a for loop that will print out the numbers 1,4,7, 10 ... until the parameter value n is reached. The method should ensure that the parameter n value is 1 or greater than 1, otherwise informing the user of their error.
```
public void mmm(int n){
// your code goes here
}
```