COURSE CODE: COM 123
COURSE TITLE: OO JAVA
CLASS: NDI COMPUTER (FT&DPP)
TIME: 2 ½ HOURS
INSTRUCTION: ANSWER ANY **FIVE (5)** QUESTIONS. ALL
QUESTIONS CARRY EQUAL MARKS

QUESTION ONE

a. State **three(3)** characteristics of an object-oriented computer language. [3 marks]
b. State any three characteristics of a Java program   [3 marks]
c. Given that x=1, y=2, and z=3; State the value of d from the following Java statements:
  i)   d=x+y++;
  ii)   d=z-y+x--;
  iii)   d=++z-y+x;   [1 mark each]
d. State the final value of each of the variables in (c) above after evaluating each of the statements.   [3 marks]

QUESTION TWO

a.   Write briefly on the following
  i) Byte code
  ii) Java virtual machine
  iii) Java environment setup
  iv) Netbeans   [3 marks each]

QUESTION THREE

a.   Write briefly on any six primitive types in java   [12 marks]

QUESTION FOUR

Consider the java program below and answer the questions that follow:

```
import java.util.scanner;
public class main()
 {
 public static void main (string[] args);
 {
 scanner input = new scanner (system.in);
 system.out.print("input the first number: ");
 int num1=input.nextint();
 system.out.print(input the second number: ");
 int num2 = input.nextint();
 int sum =num1+num2;
 system.out.println ();
 system.out.println("sum:  "+sum);
 }
}
```

a.   Explain the functions of each line of the program.   [8 marks]
b.   Write a java program to find average of **three(3)** numbers.   [4 marks]

QUESTION FIVE

a. In each of the problems outlined below write a java program in each case that solves the problem
   i) Count how many odd numbers between 1 and 20
   ii) Find the sum of the digits of a given two-digit positive integer
   iii) Write out the middle digit in a three-digit positive integer

   [4 marks each]

QUESTION SIX

a. Write java statements (not full program) to accomplish each of the tasks below:
   i) Print 'yes' if a given integer x is in the range $-2<x<+3$, otherwise print 'no'

   [4 marks]

   ii) In a class of twenty students, only students below 18 years of age are qualified for a bonus of 10 marks in COM123. You are required to obtain the actual scores of the students in COM123 and print out their final scores in the course. [4 marks]

   iii) Calculate the area of a circle as: $3.142 * radius * radius$, where value of radius is given

   [4 marks]

QUESTION SEVEN

a. Explain the meaning of the following terms used in java programming:
   i) Array
   ii) Assignment statement
   iii) Operator
   iv) Variable name

   [3 marks each]