Fasilkom-TI USU
Program Studi Teknologi Informasi
UJIAN AKHIR SEMESTER GANJIL 2022/2023

Matakuliah/SKS	: PBO. Lanjutan (TIF2106) /3	Semester: 3
Dosen	: Sawaluddin	Hari/Tgl : Senin/ 09 JAN 2022
Waktu	: 08.30 – 09.10 (40 Menit)	
	: Closed book	

1. Which of the following is not a Java features?
   a. Dynamic
   b. Architecture Neutral
   c. Use of pointers
   d. Object-oriented

2. What will be the output of the following program?

```
public class Test {
      public static void main(String[] args) {
      int count = 1;
      while (count <= 15) {
            System.out.println(count % 2 == 1 ?
                        "***" : "+++++");
            ++count;
      }      // end while
      }       // end main
}
```

   a. 15 times ***
   b. 15 times +++++
   c. 8 times *** and 7 times +++++
   d. Both will print only once

3. Which of the following for loop declaration is not valid?
   a. `for ( int i = 99; i >= 0; i/9 )`
   b. `for ( int i = 7; i <= 77; i+=7 )`
   c. `for ( int i = 20; i >= 2; --i )`
   d. `for ( int i = 2; i <= 20; i= 2*i )`

4. What will be the output of the following program?

```
Public class Test2 {
    public static void main(String[] args) {
      StringBuffer s1 = new StringBuffer("Complete");
      s1.setCharAt(1,'i');
      s1.setCharAt(7,'d');
      System.out.println(s1);
    }  // end of main
}
```

a. Complete
b. Iomplede
c. Cimpletd
d. Coipletd

5. What will be the output of the following Java code?

```
class Increment {
   public static void main(String args[]) {
         int g = 3;
         System.out.print(++g * 8) ;
   }
}
```

a. 32 b. 33 c. 24 d. 25

6. What will be the output of the following Java program?

```
   class recursion {
      int func (int n){
          int result;
          if (n == 1)
              return 1;
          result = func (n - 1);
          return result;
      }
  }
  class Output  {
      public static void main(String args[]){
          recursion obj = new recursion() ;
          System.out.print(obj.func(5));
      }
  }
```

a. 1 b. 120 c. 0 d. None of the mentioned

7. What will be the output of the following Java code snippet?

```
   import java.util.*;
   class Arraylists {
      public static void main(String args[]){
          ArrayLists obj = new ArrayLists();
          obj.add("A");
          obj.add("B");
          obj.add("C");
          obj.add(1, "D");
          System.out.println(obj);
      } // end of main
   }
```

a. [A, D, C]
b. [A, B, C]
c. [A, B, C, D]
d. [A, D, B, C]

8. What will be the output of the following Java program?

```
   final class A  {
       int i;
   }
```

```
class B extends A {
   int j;
   System.out.println(j + " " + i);
}
class inheritance {
   public static void main(String args[]){
       B obj = new B();
       obj.display();
   } // end of main
}
```

a. 2 2
b. 3 3
c. Runtime Error
d. Compilation Error

9. Soal no 9 dan 10 submit di e-learning USU sesuai jadwal

A prime number (or prime integer, often simply called a "prime" for short) is a positive integer $\rho > 1$ that has no positive integer divisors other than 1 and ρ itself. (More concisely, a prime number ρ is a positive integer having exactly one positive divisor other than 1). For example, the only divisors of 13 are 1 and 13, making 13 a prime number, while the number 24 has divisors 1, 2, 3, 4, 6, 8, 12, and 24 (corresponding to the factorization $24 = 2^3.3$), making 24 *not* a prime number.

Write a method that uses a **loop** to decide whether a number is prime or not.

```
public static boolean IsPrime1(int num) {


}
```

10. Write a method named pickUnique that takes an integer array and returns another integer array containing the input elements without any duplicates. For example, given {10, 2, 7, 8, 2, 3, 7} the method returns {10, 2, 7, 8, 3}.

Hint:
There could be two parts in this method.
(a) In the first part, create an array that marks whether each element in the original array is unique or not. A double for-loop can be useful to compute the value of each element in this array.
(b) In the next part, create an integer array that you will return. The size of this array can be computed while computing the array described above(a) . Value of each elementis computed using the array above(a) and the original array given from the parameter.