PLA1001 | Mid-term | A21+A22+A23 | FACE

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Booth's Algorithm is applied on _____ *

- (●) Binary Numbers
- ( ) Decimal Numbers
- ( ) Octal Numbers
- ( ) Hexa Decimal Numbers

If Booth's Multiplication is performed on the numbers 22*3, then what is 3 referred to as _____ *

- ( ) accumulator
- ( ) multiplicand
- ( ) quotient
- (●) multiplier

What is the value of n in multiplication of 110* 1000? *

- ○ 2
- ○ 3
- ◉ 4
- ○ 0

What will be the value obtained after multiplication of (-2) * (-3) using Booth's Algorithm? *

- ◉ 6
- ○ -6
- ○ 2
- ○ 3

The 10's complement of 562 is _____ *

- ○ 4
- ◉ 3
- ○ 7
- ○ 8

Euclid's algorithm is used for finding _____ *

- ◉ GCD of two numbers
- ○ GCD of more than three numbers
- ○ LCM of two numbers
- ○ LCM of more than two numbers

What is the total running time of Euclid's algorithm? *

- ◉ O(N)
- ○ O(N log M)
- ○ O(N log N)
- ○ O(log N +1)

What is the total running time of the binary GCD algorithm? *

- O(N)
- O(N^2)
- O(log N)
- O(N log N)

In which memory a String is stored, when we create a string using new operator? *

- Stack
- String
- Heap
- None of the above

Left Shift (<<) in Java is equivalent to? *

- Subtracting the number by 2
- Dividing the number by 2
- Multiplying the number by 2
- Adding the number by 2

What is the output of the Java code snippet? *

```
byte a = 0b0000_0001;
System.out.println(~a);
```

- -1
- -2
- 254
- 127

What is the output of the Java code snippet? *

```
System.out.println(0b0000_1000);
```

- 0b0000_1000
- 1000
- 8
- 9

Swap nipples on : 01100100 *

- [ ] 69
- [ ] 80
- [ ] 90
- [x] 70

Which algorithm will give the result in 2's complement *

- [x] Booth
- [ ] Sieve
- [ ] Kadans
- [ ] None of the above

Fastest algoritham to find Prime numbers *

- [x] sieve
- [ ] segmented sieve
- [ ] quick sort
- [ ] none of the above

which of these NOT a strobogrammatic number *

- [ ] 11
- [ ] 101
- [ ] 1691
- [x] 10701

Which of the following is used with the switch statement? *

- [x] break
- [ ] do
- [ ] Exit
- [ ] Continue

What is the output of the below Java program with arrays? *

```
String[] colors = {"RED";"YELLOW";"WHITE"};
System.out.print(colors[2]);
```

- ○ RED
- ○ YELLOW
- ○ WHITE
- ◉ Compiler error

What is time complexity of fun()? *

```
int fun(int n)
{
    int count = 0;
    for (int i = n; i > 0; i /= 2)
    for (int j = 0; j < i; j++)
    count += 1;
    return count;

}
```

- ○ O(nlog n)
- ○ O(n^2)
- ◉ O(n)
- ○ O(log n)

Which of these operators is used to allocate memory to array variable in Java? *

- ○ malloc
- ○ alloc
- ◉ new
- ○ new malloc

What will be the output of the following Java program? *

```
class leftshift_operator
{
    public static void main(String args[])
    {
        byte x = 64;
        int i;
        byte y;
        i = x << 2;
        y = (byte) (x << 2);
        System.out.print(i + " " + y);
    }
}
```

- ○ 0 64
- ◉ 64 0
- ○ 0 256
- ○ 256 0

Which of the following encryption algorithms can be encountered with Bit flipping attack? *

- ◉ Rivest Cipher 4
- ○ Rivest Cipher 5
- ○ Advanced Encryption Standard
- ○ Data Encryption Standard

Which of the following is a valid declaration of a char? *

- ◉ char ch = '\utea';
- ○ char ca = 'tea';
- ○ char cr = \u0223;
- ○ char cc = '\itea';

What is the output of the below Java program with arrays? *

```
public class Polo
{
    public static void main(String args[])
    {
        String[] computer = {"RAM","HDD","MOUSE"};
        String[] parts = {computer[0],computer[2]};
        System.out.print(parts[1]);
    }
}
```

- ◯ RAM
- ◯ HDD
- ◉ MOUSE
- ◯ Compiler error

Predict the output for the following code? *

```
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);
    }
}
```

- ◯ Complete
- ◯ Iomplede
- ◉ Cimpletd
- ◯ Coipletd

What will be the output for below code? *

```
int values[ ] = {1,2,3,4,5,6,7,8,9,10};
for(int i=0;i< Y; ++i)
System.out.println(values[i]);
```

- ◯ 10
- ◯ 11
- ◯ 15
- ◉ None of the above

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   }
```

- ◯ 15 times ***
- ◯ 15 times +++++
- ◉ 8 times *** and 7 times +++++
- ◯ Both will print only once

With x = 0, which of the following are legal lines of Java code for changing the value of x to 1? *

```
x++;
x = x + 1;
x += 1;
x =+ 1;
```

- ◉ 1, 2 & 3
- ◯ 1 & 4
- ◯ 1, 2, 3 & 4
- ◯ 3 & 2

What will be the output of the following Java program? *

```
class increment
{
    public static void main(String args[])
    {
        double var1 = 1 + 5;
        double var2 = var1 / 4;
        int var3 = 1 + 5;
        int var4 = var3 / 4;
        System.out.print(var2 + " " + var4);
    }
}
```

- ○ 11
- ○ 0 1
- ◉ 1.5 1
- ○ 1.5 1.0

What will be the output of the following Java program? *

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

}
```

- ○ 25
- ○ 24
- ◉ 32
- ○ 33

What will be the output of the following Java program? *

```
class Output
{
    public static void main(String args[])
    {
        int a = 1;
        int b = 2;
        int c;
        int d;
        c = ++b;
        d = a++;
        c++;
        b++;
        ++a;
        System.out.println(a + " " + b + " " + c);
    }
}
```

- ◯ 3 2 2004
- ◉ 3 4 2004
- ◯ 3 2 2003
- ◯ 2 3 2004

On applying Left shift operator, <<, on integer bits are lost one they are shifted past which position bit? *

- ◯ 1
- ◯ 32
- ◯ 33
- ◉ 31

What is the GCD of 20 and 12 using Euclid's algorithm? *

- ◯ 8
- ◯ 2
- ◉ 4
- ◯ 6

What is the formula for Euclidean algorithm? *

- ◉ GCD (m,n) = GCD (n, m mod n)
- ◯ LCM(m,n)=LCM(n, m mod n)
- ◯ GCD(m,n,o,p) = GCD (m, m mod n, o, p mod o)
- ◯ LCM (m,n,o,p) = LCM (m, m mod n, o, p mod o)

If for an algorithm time complexity is given by O(log2n) then complexity will: *

- ○ constant
- ○ polynomial
- ○ exponential
- ◉ None of the above

What does it mean when we say that an algorithm X is asymptotically more efficient than Y? *

- ○ X will always be a better choice for small inputs
- ◉ X will always be a better choice for large inputs
- ○ Y will always be a better choice for small inputs
- ○ X will always be a better choice for all inputs

The complexity of Fibonacci series is *

- ◉ O(2n)
- ○ O(log n)
- ○ O(n2)
- ○ O(n log n)

A program P reads in 500 integers in the range [0..100] exepresenting the scores of 500 students. It then prints the frequency of each score above 50. What would be the best way for P to store the frequencies? *

- ◉ An array of 50 numbers
- ○ An array of 100 numbers
- ○ An array of 500 numbers
- ○ A dynamically allocated array of 550 numbers

In Average case, if operation takes $f(n)$ time in execution, then m operations will take? *

- ○ ƒ(n)
- ○ f(m)
- ◉ mf(n)
- ○ nf(m)

The space required by an algorithm is equal to the sum of the following _____ components. *

- 1
- 2
- 3
- 4

What is the output of the following code?
public class Main{
public static void main(String args[]){
StringBuffer s = new StringBuffer("Bob");
s.deleteCharAt(0);
System.out.println(s);
}
} *

- Bo
- ob
- Bob
- B

What is the computational complexity of Binary GCD algorithm where a and b are integers? *

- O (log a + log b)^2)
- O (log (a + b))
- O (log ab)
- O (log a-b)

Predict the output *

```
import java.util.*;
public class Main
{
    public static void main(String[] args)
    {
        int[] arr = {5,6,7,8};
        for (int i = 0; i < arr.length; i++)
        {
            if((arr[i])==arr[i])
            {
                int temp = arr[0];
                arr[0] = arr[i];
                arr[i] = temp;
            }
        }
        for (int t = 0; t < arr.length-3; t++)
        {
            System.out.print((arr[t]) + " ");
        }
    }
}
```

- 5
- 7
- 8 5 6 7
- (•) 8

Which of the following is a mutable class in java? *

- 1. java.lang.String
- 2. java.lang.Byte
- 3. java.lang.Short
- (•) 4. java.lang.StringBuilder

Which data structure is mainly used for implementing the recursive algorithm? *

- Queue
- (•) Stack
- Binary Tree
- Linked List

Which operator is used to invert all the digits in a binary representation of a number? *

- (•) ~
- <<<
- >>>
- ^

Which of the following case does not exist in complexity theory? *

- ○ Best case
- ○ Average Case
- ○ Worst case
- ◉ Null Case

Predict the output *

```
import java.util.*;
public class Main
{
    public static void main(String args[])
    {
        int arr[] = new int[] {0 , 1, 2, 3, 4, 5, 6, 7, 8, 9};
        int n = 6;
        n = arr[arr[n] / 2];
        System.out.println(arr[n] / 2);
    }

}
```

- ○ 0
- ○ 3
- ◉ 1
- ○ Compilation error

What will be the output of the following Java program? *

```
class Output
{
    public static void main(String args[])
    {
        int a = 1;
        int b = 2;
        int c = 3;
        a |= 4;
        b >>= 1;
        c <<= 1;
        a ^= c;
        System.out.println(a + " " + b + " " + c);
    }

}
```

- ○ 2 3 2004
- ○ 2 2 2003
- ◉ 3 1 2006
- ○ 3 3 2006

What is the valid data type for variable “a” to print “Hello World”? *

```
switch(a)
{
    System.out.println("Hello World");

}
```

- ○ int and float
- ○ byte and short
- ○ char and long
- ◉ byte and char

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